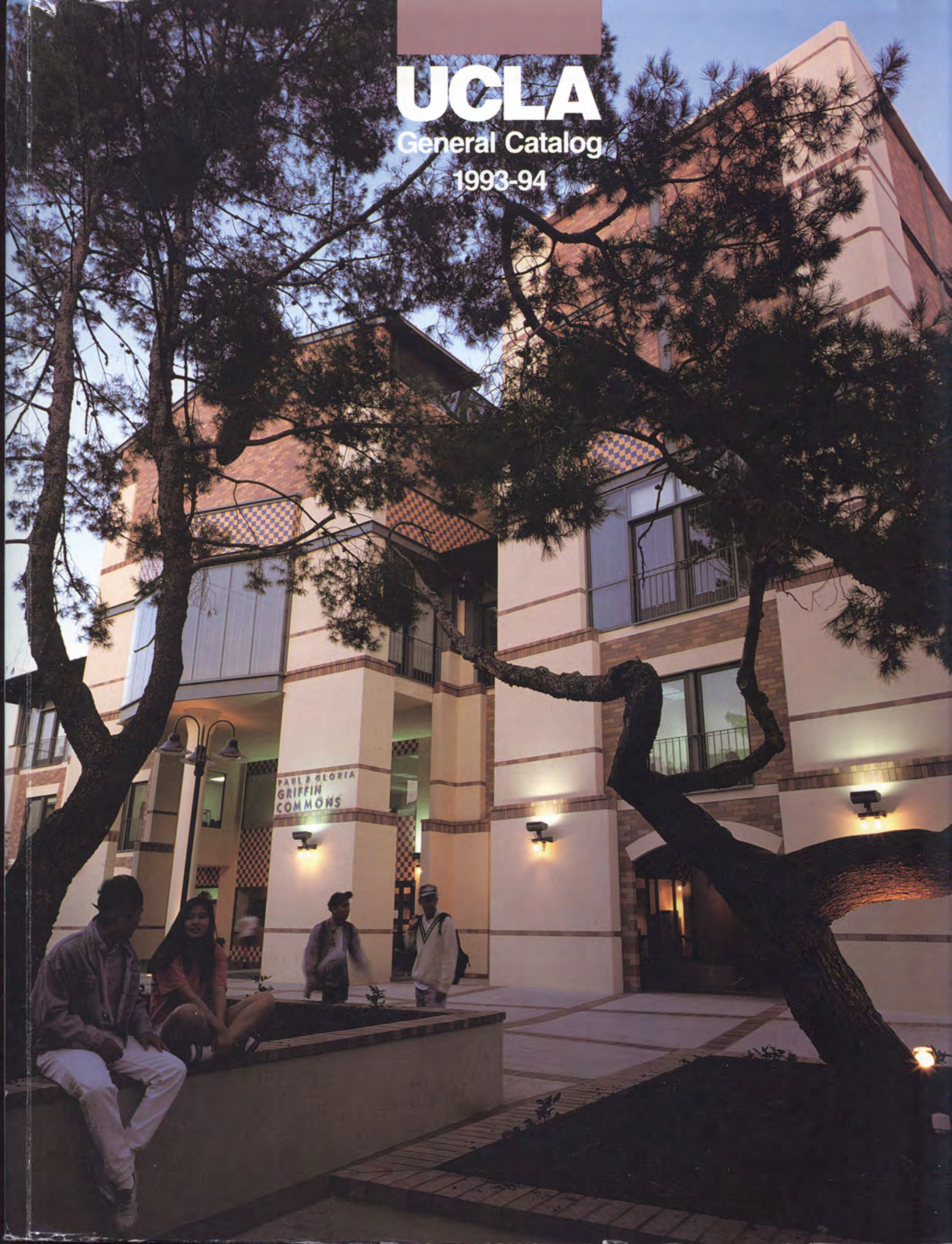


# UCLA

General Catalog

1993-94



PAUL & GLORIA  
GRIFFIN  
COMMONS

# Organization of the Catalog

## General Campus College

### College of Letters and Science

African Area Studies  
African Studies  
Afro-American Studies  
American Indian Studies  
Anthropology  
Applied Linguistics  
Archaeology  
Art History  
Asian American Studies  
Astronomy  
Atmospheric Sciences  
Biology  
Business and Administration  
Chemistry and Biochemistry  
Chemistry/Materials Science  
Chicana and Chicano Studies  
Classics  
Communication Studies  
Comparative Literature  
Cybernetics  
Development Studies  
Diversified Liberal Arts  
Earth and Space Sciences  
East Asian Languages and Cultures  
East Asian Studies  
Economics  
Economics/System Science  
Education  
English  
Folklore and Mythology  
French  
Geography  
Germanic Languages  
History  
History/Art History  
Honors Collegium  
Indo-European Studies  
International Relations  
Islamic Studies  
Italian  
Labor and Workplace Studies  
Latin American Studies  
Linguistics  
Mathematics  
Microbiology and Molecular Genetics  
Molecular Biology  
Musicology  
Near Eastern Languages and Cultures  
Near Eastern Studies  
Neuroscience  
Organizational Studies  
Philosophy  
Physics  
Physiological Science  
Political Science  
Psychology  
Religion, Study of  
Romance Linguistics and Literature  
ROTC Programs  
Scandinavian Languages  
(see Germanic Languages)

Slavic Languages and Literatures  
Sociology  
Spanish and Portuguese  
Teaching English as a Second Language  
and Applied Linguistics  
Urban Studies  
Women's Studies  
World Arts and Cultures  
(see School of the Arts)

## General Campus Professional Schools

### School of the Arts

Art  
Dance  
Design  
Ethnomusicology and Systematic Musicology  
Music  
World Arts and Cultures

### School of Theater, Film, and Television

Film and Television  
Theater

### School of Engineering and Applied Science

Chemical Engineering  
Civil Engineering  
Computer Science  
Electrical Engineering  
Environmental Science and Engineering  
(see School of Public Health)  
Materials Science and Engineering  
Mechanical, Aerospace, and Nuclear  
Engineering

### Graduate School of Architecture and Urban Planning

### Graduate School of Education

### School of Law

### Graduate School of Library and Information Science

### John E. Anderson Graduate School of Management

### School of Social Welfare

## Health Sciences Schools

### School of Dentistry

Oral Biology

### School of Medicine

Anatomy and Cell Biology  
Anesthesiology (Nurse Anesthesia)  
Biological Chemistry  
Biomathematics  
Medicine  
Microbiology and Immunology  
Neurology  
Neuroscience  
Obstetrics and Gynecology  
Ophthalmology  
Orthopaedic Surgery  
Pathology and Laboratory Medicine  
Pediatrics  
Pharmacology  
Physiology  
Psychiatry and Biobehavioral Sciences  
Radiation Oncology  
Radiological Sciences (Biomedical Physics)  
Surgery

### School of Nursing

### School of Public Health

Biostatistics  
Community Health Sciences  
Environmental Health Sciences  
Environmental Science and Engineering  
Epidemiology  
Health Services

**On the cover:** Griffin Commons, located in Sunset Village on the northwest side of campus, at dusk. Photo by Teri Gilman of Image Works West.

**On the title page:** The fledgling UCLA campus in 1930, with Royce, Haines, Kinsey, and Moore Halls and Powell Library forming a lone-some little cluster amid the beanfields of Westwood.

**UCLA**  
General Catalog

1993-94



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## About This Catalog

Chancellor: Charles E. Young  
 Assistant Vice Chancellor/Registrar:  
 Thomas E. Lifka  
 Publications Manager/Editor, Academic  
 Publications: Leann J. Hennig  
 Assistant Editor: Susan J. Kientz  
 Design: Robin Weisz, Juliet Beynon

Photography: Philip Channing, Gary Conner,  
 Colin Crawford, Teri Gilman, Wendy Malecki,  
 Richard Mantonya, Terry O'Donnell, Norm  
 Schindler, Frank D. Smith, Robin Weisz.

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## Please Note

Every effort has been made to ensure the accuracy of the information presented in the *UCLA General Catalog*. However, all courses, course descriptions, instructor designations, curricular degree requirements, and fees described herein are subject to change or deletion without notice.

Other information about UCLA may be found in the announcements of the Schools of Architecture and Urban Planning, Dentistry, Education, Engineering and Applied Science, Law, Library and Information Science, Management, Medicine, Nursing, Public Health, and Social Welfare, and in literature produced by the School of the Arts and School of Theater, Film, and Television. Further details on graduate programs are available in various Graduate Division publications, including *Standards and Procedures for Graduate Study at UCLA*.

## UCLA (USPS 646-680)

Volume 33, Number 3, August 16, 1993  
 A series of administrative publications of the University of California, Los Angeles, published 10 times a year (one issue in March; three issues in August; six issues in September) by UCLA Academic Publications, 405 Hilgard Avenue, Los Angeles, CA 90024-1429, (310) 825-6704. Second-class postage paid at Los Angeles, CA. © 1993 by The Regents of the University of California. POSTMASTER: Send address changes to UCLA Mail Services, 405 Hilgard Avenue, Los Angeles, CA 90024-1361.

# Calendar

	<b>Fall 1993</b>	<b>Winter 1994</b>	<b>Spring 1994</b>
Filing period for undergraduate applications (file with UC Undergraduate Application Processing Service, P.O. Box 23460, Oakland CA 94623-0460)	November 1-30, 1992	—	October 1-31, 1993
Last day to file application for graduate admission or readmission with complete credentials and application fee, with UCLA Graduate Application Processing, P.O. Box 23895, Oakland, CA 94623-0895	December 15	October 1, 1993	December 29
Last day to file graduate petitions for change of major with Graduate Division, 1255 Murphy Hall	December 15	October 1	December 29
Last day for new undergraduates to file On-Campus Housing Lottery Application with On-Campus Housing Assignment Office, 270 De Neve Drive, by 5 p.m.	March 31	October 27	January 26
Last day for current students to file On-Campus Housing Lottery Application with On-Campus Housing Assignment Office by 5 p.m.	April 16	October 27	January 26
Last day for new graduate students to file On-Campus Housing Lottery Application with On-Campus Housing Assignment Office by 5 p.m.	June 1	October 27	January 26
Distribution of registration materials by letter groups for continuing students	June 7	November 1	February 7
New and reentrant students eligible to register by mail should receive Registration Form at mailing address (weekly mailings begin)	June 8	November 2	February 8
<i>Schedule of Classes</i> goes on sale at Students' Store, Ackerman Union	June 11	November 3	February 9
Academic counseling for new students is available by appointment in college and school offices	July 1	Consult college or school	Consult college or school
<b>*First mailing date for registration fee payment</b>	July 1	November 1	February 7
First day to obtain Student Parking Request forms at Parking Services	July 12	October 4	January 3
Last day to submit Student Parking Request for campus parking permit	August 13	November 5	February 4
Eligibility date for new and reentrant registration by mail (Statement of Legal Residence must be processed by the residence deputy by this date in order to receive Registration Form by mail)	August 16	November 15	February 14
Last day to file Undergraduate Application for Readmission form at 1113 Murphy Hall (late applicants will pay a \$50 late payment fee)	August 20	December 3	February 25
<b>REGISTRATION FEE PAYMENT DEADLINE</b>	September 3	December 3	March 4
Registrar mails valid Reg Card to mailing address of students who paid by fee payment deadline; call URSA at (310) 208-0425	Call URSA for date issued	Call URSA for date issued	Call URSA for date issued
<b>LATE registration in person with \$50 late fee</b>	September 7-October 15	December 6-22, 27-29, January 3-21	March 7-April 15
<b>*Financial Aid loan/grant distribution begins</b>	September 21	January 5	March 30
Spanish and Portuguese Placement Examination	September 21	October 26	February 1
English as a Second Language Placement Examination (ESLPE)	September 21, 27	January 6	March 31
\$50 late fee waived for students using loan/grant checks to pay registration fees	September 21-October 8	January 5-14	March 30-April 8
<b>QUARTER BEGINS</b>	September 27	January 5	March 30
Chemistry Diagnostic Test	September 27	November 18	March 3
Chinese Placement Examination	September 27	—	—
German Placement Examination	September 27	January 6	March 31
Issuing of UCLA Student I.D. Cards to new and reentering students begins	September 27	January 5	March 30
Mathematics Diagnostic Test	September 27	November 17	March 2
French Placement Examination	September 28	November 16	February 24
Music Theory Placement Examination	September 28	—	—
<b>INSTRUCTION BEGINS</b>	September 30	January 10	April 4
Korean Placement Examination	September 30	—	—

\*Tentative date; refer to *Schedule of Classes* for specific term.

	Fall 1993	Winter 1994	Spring 1994
Japanese Placement Examination	October 2	—	—
<b>Classes will be dropped if fee payment is not completed by 5 p.m.</b>	October 8	January 14	April 8
Last day to register for Graduate School Foreign Language Tests (GSFLT) in French, German, Russian, and Spanish	October 8	January 14	March 11
Subject A Examination and English 3 Proficiency Examination	October 11	January 24	April 18
Orientation meetings on format for master's theses and doctoral dissertations (see theses and dissertations adviser, 390 Powell Library)	October 14-16	January 20-22	April 14-16
Last day:	October 15	January 21	April 15
(1) To change Study List (add, drop courses) without fee through URSA			
(2) To check waiting lists for courses by telephone (wait lists are dropped at 5 p.m.)			
(3) To enroll by telephone in courses for credit without \$50 late Study List fee			
(4) To file advancement to candidacy petition for master's degree with major department			
(5) To file graduate leaves of absence with Graduate Division, 1255 Murphy Hall			
(6) To file undergraduate request for fee reduction with college or school			
Graduate School Foreign Language Tests (GSFLT) in French, German, Russian, and Spanish	October 16	January 22	March 19
<b>Undergraduates approved for reduced fees are audited (must be enrolled in 10 units or less to be eligible for reduction) as of this date</b>	October 22	January 28	April 22
<b>WITH APPROVAL OF ACADEMIC DEAN:</b>	October 22	January 28	April 22
*(1) Last day for graduate students to ADD courses with \$3 petition fee			
(2) Last day for graduate students to file Late Study List with \$50 fee			
<b>WITH APPROVAL OF ACADEMIC DEAN:</b>	October 29	February 4	April 29
*(1) Last day for undergraduates to ADD OR DROP courses with \$3 petition fee			
(2) Last day for undergraduates to file Late Study List with \$50 fee			
Last day to declare bachelor's degree candidacy for current term (with fee if 160 or more units completed)	November 5	February 11	May 6
Last day to submit final drafts of dissertations to doctoral committees for degrees to be conferred in current term	November 8	February 14	May 9
*Last day for undergraduates to change grading basis (optional P/NP) through URSA without fee	November 12	February 18	May 13
Last day to submit final drafts of theses to master's committees for degrees to be conferred in current term	November 22	February 28	May 23
Last day for continuing students to file applications for undergraduate scholarships for 1994-95	—	March 2	—
Last day to file completed copies of theses for master's degrees and dissertations for doctoral degrees to be conferred in current term with theses and dissertations adviser, 390 Powell Library	December 6	March 14	June 6
<b>INSTRUCTION ENDS</b>	December 9	March 18	June 10
Reading Day	December 10	—	—
Last day to withdraw	December 10	March 18	June 10
<b>WITH APPROVAL OF ACADEMIC DEAN:</b>	December 10	March 18	June 10
(1) Last day for graduate students to change grading basis (optional S/U) with \$3 petition fee			
(2) Last day for graduate students to DROP courses with \$3 petition fee			
Final examination week	December 13-17	March 21-25	June 13-17
<b>QUARTER ENDS</b>	December 17	March 25	June 17
Last day to file applications for graduate merit-based financial support for 1994-95	January 10	Consult department	Consult department
First day to obtain GPA for previous term grades through URSA	January 24	April 18	July 11
Commencement weekend (by college/school)	—	—	June 18-19
Academic and administrative holidays	July 5 September 6 November 25-26 December 23-25, 30-31 January 1	January 17 February 21 March 28	May 30

\*Changes to Official Study List after this date will be considered only under extraordinary circumstances and with approval of the academic dean.

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# About UCLA

# 1





# Introducing UCLA

"... in 10 years . . . we shall look with amazement upon the development of this University, for it is certain to be greater, far greater, than the imagination of any of us can foresee."

— Ernest Carroll Moore  
UCLA Director, 1919

## From Little Acorns . . .

The year was 1880. With a population of 11,000, Los Angeles was a gaslit pueblo trying to convince the state to establish in Southern California a second State Normal School like the one already existing in San Jose, some 300 miles to the north.

In March of the following year, the State Assembly approved the establishment of such a school. A group of enthusiastic citizens, over 200 of whom contributed between \$2 and \$500, purchased a site less than a mile from the business section. Soon the towering Victorian form of the school rose from an orange grove which, today, is the site of the Central Los Angeles Public Library. On August 29, 1882, the Los Angeles Branch of the State Normal School welcomed its first students.

By 1914 the little pueblo of Los Angeles had grown to a city of 350,000 and the school, whose enrollment far exceeded its capacity, moved to new quarters — a Hollywood ranch off a dirt road which would later become Vermont Avenue.

With a view toward expansion, Director Ernest Carroll Moore proposed in 1917 that the school become the first branch of the Berkeley-based University of California. Two years later, the Los Angeles State Normal School was replaced by the Southern Branch of the University of California, no longer merely a teacher's college but an institution that offered two years of instruction in Letters and Science. Third- and fourth-year courses were soon added, the first class of 300 students was graduated in 1925, and by 1927 the Southern Branch had earned its new name: University of California at Los Angeles (the "at" became a comma in 1958).



Groundbreaking, September 21, 1927. Provost Ernest Carroll Moore wields the shovel as Regent Edward A. Dickson (to Dr. Moore's right) and others cheer.

## The Move Westward

As the student population of the University continued to increase, the need for a new site became obvious and the search was soon under way for a permanent home for UCLA. On September 21, 1927, Director Moore turned the first shovelful of soil that broke ground for the creation of the campus of his dreams.

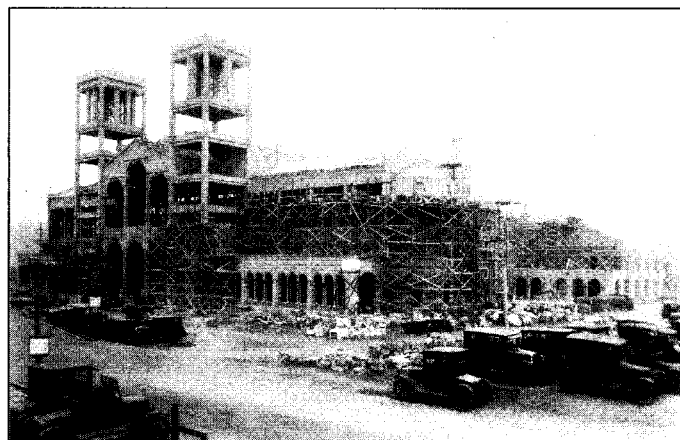
The choice of Westwood, set squarely in the path of westward-moving Los Angeles, no doubt was an important factor in determining UCLA's future growth. But in 1929, on the barren chaparral-covered hills of Westwood, the four original buildings — Royce Hall, Powell Library, Haines and Kinsey Halls — formed a lonesome little cluster in the middle of four hundred empty acres. The campus hosted some 5,500 students that fall.

The first priority after the move to Westwood was to establish a graduate curriculum, essential for any major university. The Regents established the master's degree at UCLA in 1933 and, three years later, the doctorate. UCLA was fast becoming a full-fledged university offering advanced study in almost every field.

Los Angeles and the University nurtured each other through the years, and both experienced phenomenal growth and development during the next half century. UCLA's most spectacular period of growth occurred in the 25 years following World War II, when it tripled its prewar enrollment of 9,000 students and undertook what would become a \$260 million building program that included residence halls, parking structures, laboratories, more classrooms, service buildings, athletic and recreational facilities, and a 715-bed teaching hospital which is now one of the largest and most highly respected in the world.

## UCLA Today

Today, UCLA is a large and complex institution devoted to undergraduate and graduate scholarship, research, and public service. Known for academic excellence, many of its programs are rated among the best in the nation, some among the best in the world.



Not the sound of symphony, but of chisel and saw: Royce Hall under construction, 1928.

Some 230 buildings on 419 acres house the College of Letters and Science plus 13 professional schools and serve over 35,230 students. Another major period of campus development is currently under way which is providing needed additional space for chemistry, management, microbiology, and medical center programs. Several of UCLA's older buildings are now being made earthquake-safe through a broad seismic correction program, and Sunset Village, a new academic and residential community on the northwest campus, was recently completed.

UCLA's top administrative officer is Chancellor Charles E. Young. Marking the twenty-fifth anniversary this fall of his appointment to that position, Chancellor Young is one of America's most senior and most respected leaders in higher education today.

## The Setting

UCLA is cradled in rolling green hills just five miles inland from the ocean, in one of the most attractive areas of Southern California. It is bordered on the north by the protected wilderness of the Santa Monica Mountains and at its southern gate by Westwood Village. Originally envisioned as a business district to serve UCLA, this picturesque little college town has mushroomed into an entertainment magnet for the entire Los Angeles area.

The cultural treasures of the Los Angeles County Museum of Art are a few miles to the east as are other museums, the community of Beverly Hills, the Music Center, and the downtown business area. Beyond that the deserts, snowcapped mountains, and ski resorts are little more than an hour's drive.

## The Ambience

The stately Tudor Gothic and Italian Romanesque architecture of UCLA's early buildings blends with the contemporary and modern design of the newer structures. Royce Hall, one of the original four buildings, remains the campus symbol. Contrasting campus moods range from the activity of Bruin Walk to the serenity of the Japanese Garden. Attend a rock concert on the lawn, or a classical recital in Schoenberg Hall. Contemplate a Rodin or a Lachaise in the Sculpture Garden, or participate in a political rally in Meyerhoff Park.

UCLA is a place of surprises. A unique inverted fountain, where water flows over river rocks, recalls the Yellowstone creeks that inspired it. Enter the Bunche Hall Annex and discover a glorious atrium where palms and ferns glisten in filtered sunlight. Step inside the courtyard of Macgowan Hall and come face to face with the impressive stone Tower of Masks, created by the noted sculptress Anna Mahler.

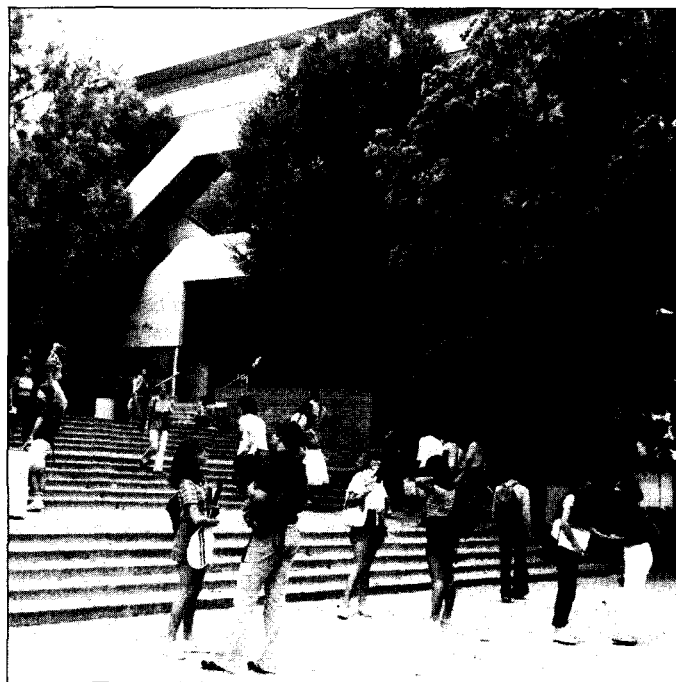
UCLA is a place for serious study in a vibrant, dynamic atmosphere. You must visit the campus to appreciate it. **The Visitors Center**, located in 1417 Ueberroth Building (310-206-8147), has a reception area where visitors are met, welcomed, and assisted. The center arranges group or personal tours of the campus all year round and provides information on campus exhibits and recreation areas. The **Office of Undergraduate Admissions and Relations with Schools** (310-825-8764) conducts tours for prospective undergraduates.

## The Commitment to Research

UCLA is one of the outstanding "research universities" in the country. What does this mean to you as a student?

It means that the same faculty members teach both undergraduate and graduate courses and that these instructors create knowledge as well as transmit it. They spend a major portion of their time engaged in research in libraries and laboratories and out in the field.

At UCLA you are taught by the people making the discoveries, so you learn the latest findings on every front. You may exchange ideas with faculty members who are authorities in their fields, and even as undergraduates you are encouraged to participate in research to experience firsthand the discovery of new knowledge. This inseparable commitment to teaching and research is the hallmark of a research university.



## The Question of Size

Although UCLA has a larger enrollment than other University of California campuses, it is small in comparison to some of the Midwestern universities. Its general campus population of some 31,338 students is about equal to that at UC Berkeley, but the UCLA campus is enriched by an additional 3,893 men and women studying in its health sciences schools of Dentistry, Medicine, Nursing, and Public Health. UCLA makes the most of its size by offering an extraordinary breadth of high quality academic programs and a range of student opportunities available at few other universities in the country.

A major concern of the faculty and staff is to allow you, the student, to feel that you belong. UCLA provides orientation sessions and several innovative academic assistance programs for new students, a staff of helpful advisers and counselors in every college/school and academic department, a myriad of student services, and unlimited opportunities for involvement and participation.

All UCLA students share the pride of attending one of the most prestigious educational institutions in the country. Beyond that, no one individual deals with the totality of UCLA. Campus life is made comfortable by interacting and identifying with only certain parts of the whole, whether they be your academic department, residence hall, fraternity or sorority, club or organization, or the spirit of Bruin victories on the athletic fields.

Many prospective students ask about the size of classes at UCLA. Standard instructional formats include lectures, discussion sections, seminars, and laboratory sessions. Although large lecture groups in some introductory courses are not unheard of, 96 percent of all lower division lecture classes in 1992-93 had fewer than 200 students, and the University is making every effort to further reduce class size. Students in most lecture classes also enroll in discussion sections of about 25 students, and seminars and laboratory classes usually have fewer than 20 students. There is an overall ratio of one faculty member for approximately 17 students.

Most UCLA faculty members take a genuine interest in their students. They set aside office hours for receiving students, and most appreciate the opportunity for informal conversation. Even professors who seem remote in the classroom may be just the opposite on a one-to-one basis. A brief discussion can benefit both student and instructor.

Professors are often aided, especially in the small discussion sections, by teaching assistants (TAs). These are graduate students who teach on a part-time basis while pursuing their degree. Many students find it helpful to talk to the TAs about academic problems.

## Hallmarks of Excellence

Recent surveys indicate that in overall excellence, UCLA is one of America's most prestigious and influential public universities. It is consistently rated among the best universities in the nation and is by far the youngest institution in this select group.

UCLA is accredited by the Western Association of Schools and Colleges and by numerous special agencies. Information regarding the University's accreditation may be obtained in the Planning Office Library, Office of Academic Planning and Budget, 2107 Murphy Hall.

**ACADEMICS** — UCLA has one college and 13 professional schools. The College of Letters and Science offers programs leading to both undergraduate and graduate degrees, as do the School of the Arts, School of Engineering and Applied Science, School of Nursing, and School of Theater, Film, and Television. The other professional schools offer graduate programs exclusively: the Graduate School of Architecture and Urban Planning, Graduate School of Education, School of Law, Graduate School of Library and Information Science, John E. Anderson Graduate School of Management, School of Social Welfare and, in the health sciences, the Schools of Dentistry, Medicine, and Public Health.

Few universities in the world offer the extraordinary range and diversity of academic programs that students enjoy at UCLA. Undergraduates may earn a Bachelor of Arts or Bachelor of Science degree in one of 110 different disciplines; graduate students may earn one of 85 master's and 102 doctoral and professional degrees.

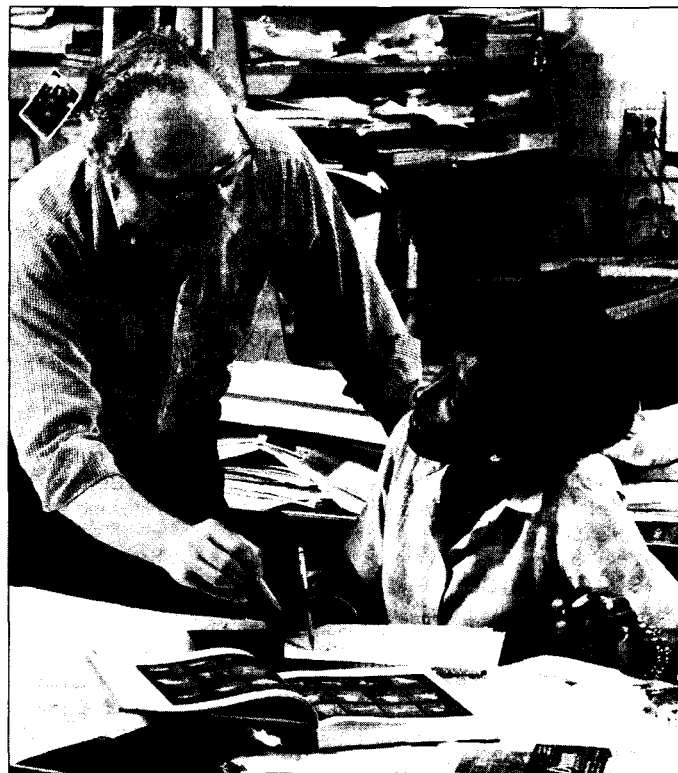
Academic programs undergo a continuing process of review and evaluation to maintain their excellence, and new programs are added as they are approved by The Regents. In response to the heightened importance of worldwide environmental issues, for example, the revised major in geography/environmental studies includes courses in human, cultural, social, political, and economic systems in relation to the environment. New degree programs this year include the interdepartmental B.S. in Neuroscience and the B.S. in Cell and Molecular Biology.

**THE FACULTY** — Of the many factors that go into the making of a great university, no single factor is as important as its faculty. UCLA's distinguished faculty includes 1987 Nobel prizewinner Donald Cram, several John Simon Guggenheim fellows and Fulbright scholars, and many members of both the National Academy of Sciences and the American Academy of Arts and Sciences. In 1992-93 six faculty members received Fulbright scholarships to conduct research, lecture, and consult abroad, and five UCLA scientists and scholars were awarded Guggenheim fellowships. Three were elected as fellows of the prestigious American Association for the Advancement of Science (AAAS). With three additional American Academy of Arts and Sciences award winners and four Sloan Foundation fellows, UCLA placed among the leading universities nationwide in the number of these prestigious awards.

In a recent survey the Conference Board of Associated Research Councils evaluated the quality of the faculty in more than 150 American research universities. UCLA was judged second in the nation among public universities, and among the most highly rated overall. Of the 32 disciplines studied, 17 of UCLA's academic departments were ranked among the top 10 in the country.

**RESEARCH** — UCLA is among the six leading research universities in the country, receiving a record \$316.3 million in 1991-92 in extramural grants and contracts to support its research activities. The University hosts several hundred postdoctoral scholars each year who share its excellent research facilities. Its laboratories have seen major breakthroughs in scientific and medical research; its study centers have helped foster understanding among the various cultures of the world; ongoing pursuits of new knowledge in a myriad of vital areas continue to improve the quality of life for people around the world.

**TEACHING** — Although all UCLA faculty members engage in research and the discovery of new knowledge, they are equally dedicated to disseminating their findings in the classroom. Indeed, excellence in teaching is one of the most important criteria for faculty promotion, and distinguished teaching awards are among those most highly prized by UCLA professors.



**STUDENT BODY** — UCLA's students pride themselves on academic excellence. The Fall Quarter 1992 entering freshman class had an average high school GPA of 3.90, with an average composite score on the Scholastic Aptitude Test (SAT) of 1,152 out of a possible 1,600.

One of the University's highest priorities is to advance the ethnic diversity of its students, faculty, staff, and administrators. The diversity of UCLA's student population — nearly equally divided between men and women — yields the wide range of opinion and perspective essential to a great university. Although most students are from California, they come from all 50 states and more than 115 foreign countries to study at UCLA. The University now enrolls the most ethnically mixed and culturally diverse undergraduate student population — both in total students and as a percentage of enrollment — of any major university in the U.S. Ethnic minorities comprise 58.7 percent of the undergraduates and 34.3 percent of the graduate student population. And international students and scholars presently number over 6,700, making this one of the most popular American universities for students from abroad.

**NUMEROUS OTHER FACTORS** — With more than six million volumes, UCLA's library is rated among the finest in the country. Its athletic teams have made the University an acknowledged leader in intercollegiate sports. Its Center for the Performing Arts ranks as the largest, most diversified and comprehensive program of its kind in the country. And management of the Armand Hammer Museum of Art and acquisition of the Westwood Playhouse in Westwood Village enhance the entire arts program.

The University played a significant role in the 1984 Summer Olympics in Los Angeles, and the campus reprised that role in July 1991 for the U.S. Olympic Festival '91. On both occasions, UCLA housed a large Olympic

Village and served as the venue for several events. In fall 1992 a full academic convocation marked the inauguration, in Royce Hall, of University of California President Jack W. Peltason.

All these factors plus its research facilities, its community service, and its international links with all parts of the world make UCLA today a very special kind of institution.

## The University of California

The University of California traces its origins to 1868, when Governor Henry H. Haight signed the Organic Act providing that California's first "complete University" be created.

Classes began the following year at the College of California in Oakland. The first buildings on the Berkeley campus were completed in 1873, and the University moved into its new home. The following June, the University of California conferred bachelor's degrees on 12 graduates.

Today the University is one of the largest and most renowned centers of higher education in the world. Its nine campuses span the state, from Davis in the north to San Diego in the south. In between are Berkeley, San Francisco, Santa Cruz, Santa Barbara, Riverside, Irvine and, of course, Los Angeles.

All the campuses adhere to the same admission guidelines and high academic standards, yet each has its own distinct character, atmosphere, and — to some degree — academic individuality. Riverside, for example, excels in the plant sciences and entomology; Davis has a large agricultural school and offers the University's only veterinary medicine program; San Diego has excellent oceanography and marine biology programs; San Francisco is devoted exclusively to the health sciences. Among the campuses there are five medical schools and three law

schools, as well as schools of architecture, business administration, education, engineering, and many others.

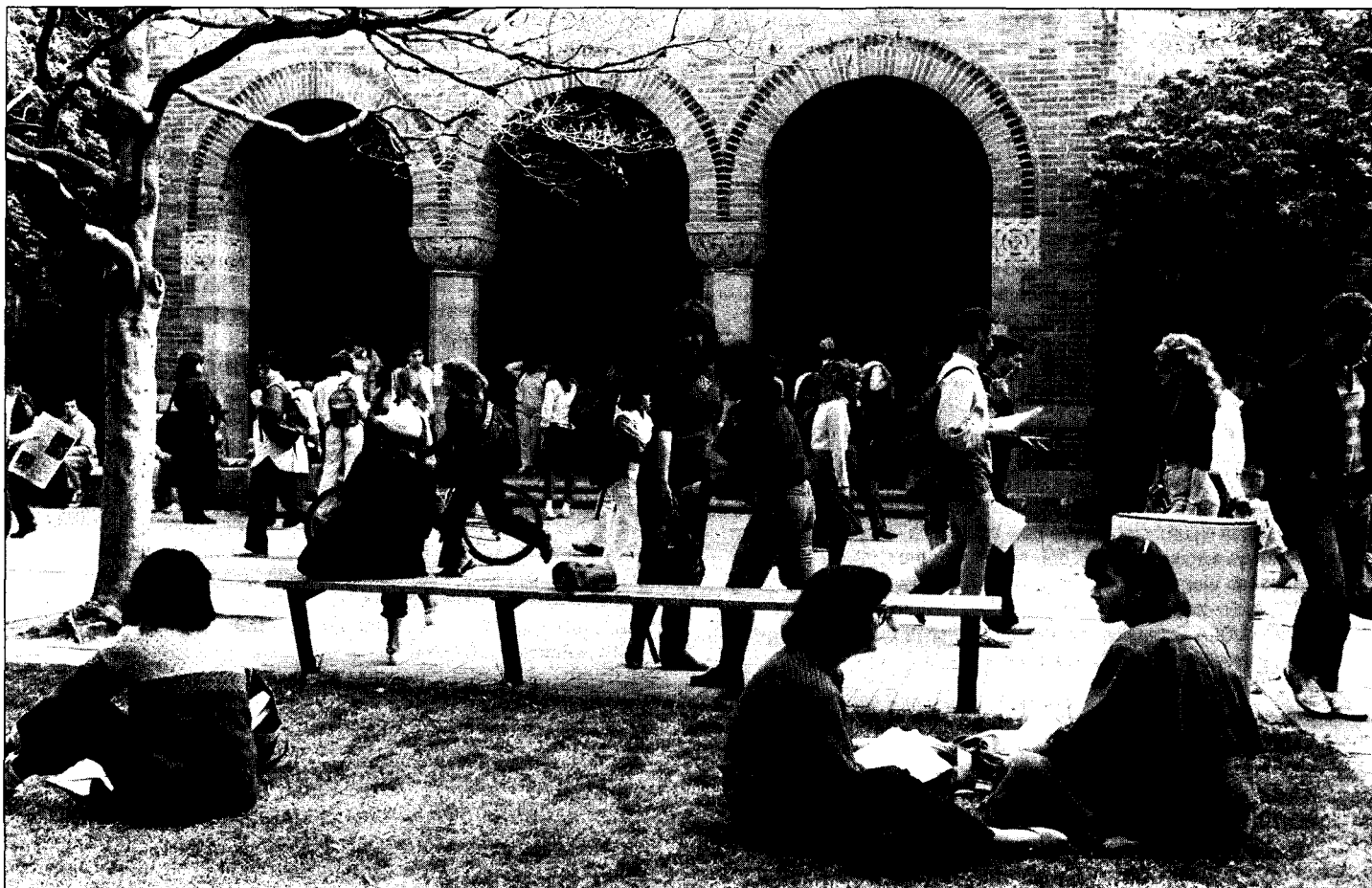
The UC campuses have a combined enrollment exceeding 165,000 students, over 90 percent of them California residents. About one fourth study at the graduate level. Some 150 laboratories, extension centers, and research and field stations strengthen teaching and research while providing public service to California and the nation. The collections of over 100 UC libraries on the nine campuses are surpassed in size on the American continent only by the Library of Congress collection.

The faculty of the University of California is internationally known for its distinguished academic achievements. On its nine campuses the University has 18 Nobel laureates, and membership in the National Academy of Sciences is the largest of any university in the country.

## University Administration

The University of California system is governed by a **Board of Regents** whose regular members are appointed by the Governor of California. In addition to setting broad general policy and making budgetary decisions for the UC system, The Regents appoint the President of the University, the nine chancellors, and the directors, provosts, and deans who administer the affairs of the individual campuses and divisions of the University.

The Regents delegate authority in academic matters to the **Academic Senate**, which determines academic policy for the University as a whole. The Senate, composed of faculty members and certain administrative officers, determines the conditions for admission and granting of degrees, authorizes and supervises courses and curricula, and advises University administrators on budgets and faculty appointments and promotions. Individual divisions of the Universitywide Academic Senate determine academic policy for each campus. Students participate in policy-making at both campuswide and systemwide levels.



# Academic Resources and Programs

## Research: The Discovery of Knowledge

As one of the largest research universities in the world, UCLA is renowned for its programs of faculty and student research; more than 5,000 funded programs are in progress at a given time. One focus of these efforts is a group of "organized research units" (ORUs) which provide an interdisciplinary approach to the search for knowledge.

ORUs are study centers and research institutes consisting of faculty and students from various departments engaged in continuing research of particular subjects. They do not offer courses of instruction or degrees, although several work in conjunction with interdepartmental instruction programs which lead to bachelor's and/or advanced degrees. ORUs provide invaluable experience for students and faculty in basic and applied research and greatly enhance UCLA's educational program and the overall academic quality of the University.

In the overview which follows, UCLA's 24 organized research units are listed within five major divisions — health sciences, life sciences, physical sciences and engineering, social sciences, and arts and humanities. Within each division, representative groups and programs are included which, although not formally established as ORUs, are nevertheless doing important research in their respective areas.

### Health Sciences

The **LABORATORY OF BIOMEDICAL AND ENVIRONMENTAL SCIENCES**, located in Warren Hall (900 Veteran Avenue, 310-825-9431) and the Center for the Health Sciences, is funded through a contract with the Department of Energy. Research is conducted in biomolecular and cellular science, environmental biology, and nuclear medicine. Laboratory faculty members have joint appointments in academic departments and teach at both undergraduate and graduate levels. Major facilities include a biomedical cyclotron, advanced scanning equipment, a cobalt radiation facility, environmentally controlled growth chambers, a vivarium, and a spectrographic analytical laboratory.

The **BRAIN RESEARCH INSTITUTE**, center for neuroscience research and education at UCLA, has one of the largest investigative programs of its kind in the country, with more than 200 scientists involved in every aspect of research in the nervous system from molecular organization of neural cells to human behavior. The institute provides an environment for multidisciplinary research and training in the structure and function of the central nervous system. Education activities include the interdisciplinary Ph.D. program in Neuroscience, the new interdisciplinary B.S. program in Neuroscience administered in conjunction with the College of Letters and Science, an elementary school outreach program whose teaching activities are directed by graduate students, and a joint educational program with UCLA Extension for teachers, educational psychologists, and other professionals. The Office of the Director is located in 73-369 BRI (310-825-5061).

The **CRUMP INSTITUTE FOR BIOLOGICAL IMAGING** brings together physical, biomathematical, chemical, biological, and clinical scientists and students in the merging of the principles of imaging with those of the basic biological sciences. The imaging domain ranges from structure/function studies of molecules and regulation of cellular processes to the biological functions of organ systems in the living human. A major focus is the development and use of imaging technologies to collect, analyze,

and communicate biological data. Imaging approaches are used to build a picture (image) of biological mechanisms of distributed functions of biological processes, organ systems, or a whole organism. Imaging technologies encompass such areas as X-ray crystallography and multidimensional NMR spectroscopy of molecules; immunocytochemistry, electron, and fluorescent microscopy; biological assays with in vitro and in vivo autoradiography; and positron emission tomography (PET), X-ray computed tomography (CT), and magnetic resonance imaging (MRI) studies of the structure and biological function of organ systems of the living human. The institute has research and educational programs for visiting scientists, postdoctoral scholars, and Ph.D. graduate students which include the development of novel multimedia computer-based learning technologies. There are also faculty and student exchange programs with a number of domestic and foreign universities. Dr. Michael E. Phelps is the director (310-825-6539).

The **DENTAL RESEARCH INSTITUTE**, with principal laboratories on the seventh floor of the School of Dentistry, fosters research related to oral health. Areas of investigation include biomaterials, clinical studies, craniofacial biology, immunology/immunogenetics, oral neurology/pain, periodontology, and ultrastructure/cell biology. The Office of the Director is located in 73-017 Center for the Health Sciences (310-206-8045).

The **MENTAL RETARDATION RESEARCH CENTER**, located on the C level and the fourth through eighth floors of the Neuropsychiatric Institute and Hospital, provides laboratories and clinical facilities for research and training in mental retardation and related aspects of human development. Its interdisciplinary activities range from anthropological studies to molecular aspects of inherited metabolic diseases. Administrative offices are located in 58-258 NPI&H (310-825-0313).

The **JULES STEIN EYE INSTITUTE** is one of the best equipped centers for research and treatment of eye diseases in the world. This comprehensive facility, located in the Center for the Health Sciences (310-825-5053), is devoted to the study of vision, the care of patients with eye disease, and education in the broad field of ophthalmology. Outpatient, inpatient, and surgical facilities are provided. The **Doris Stein Eye Research Center** houses new research and training programs concentrating on major eye diseases worldwide.

In the health sciences, research carried out in ORUs is complemented by research on neurological and neuromuscular diseases in the **Lewis Neuromuscular Research Center**, the **Reed Neurological Research Center**, and the **Neuropsychiatric Institute and Hospital**. The **Jonsson Comprehensive Cancer Center**, one of 20 comprehensive centers in the nation, is renowned for the breadth and excellence of its cancer research. The **UCLA AIDS Institute** is deeply involved in all aspects of the fight against AIDS, with basic research in epidemiology, immunology, and the clinical management of AIDS patients being done in the **Center for Clinical AIDS Research and Education**. And the School of Public Health, which last year established the **Southern California Injury Prevention Research Center**, has recently joined forces with the School of Medicine to form the **Center for Health Promotion and Disease Prevention**, another clinical research program to enhance the health of the community.

### Life Sciences

The **MOLECULAR BIOLOGY INSTITUTE** provides research and training resources in molecular biology for faculty from the College of Letters and Science and the School of Medicine, and includes the Parvin Cancer

Research Laboratories. Administrative offices are located in 168 MBI (310-825-1018).

The **CENTER FOR THE STUDY OF WOMEN**, located in 276 Kinsey Hall (310-825-0590), coordinates and disseminates interdisciplinary research on women and gender by sponsoring conferences, publications, programs for affiliated and visiting scholars and graduate students, directories of scholars doing research on women and gender at UCLA and throughout the UC system, an ongoing feminist research seminar, and a public lecture series on Women, Culture, and Society. In collaboration with other UC campuses, women's studies programs, and community groups, the center seeks to address public policies affecting women's lives.

The **Fernald Child Study Center** is a life sciences interdisciplinary research unit created to study and treat a variety of childhood behavioral problems and learning disorders. And the **Center for the Study of Evolution and the Origin of Life** melds the diverse research of more than 100 UCLA faculty members in the study of the emergence and evolution of life on Earth.

## Physical Sciences and Engineering

The **INSTITUTE OF GEOPHYSICS AND PLANETARY PHYSICS (IGPP)** is a multicampus research unit (MRU) of the University of California; the branch at UCLA is engaged in research in climate organics, geophysics, geochemistry, space physics, biochemistry, and biology. Research topics include the nature of the Earth, moon, and other planetary bodies, global change, the origin of terrestrial life, the dynamical properties of the sun and solar wind, and the evolution of stellar interiors. Facilities include analytical laboratories in meteoritics, glaciology, petrology, geochronology, archaeology, and the origins of life, laboratories for experiments in fluid dynamics and high-pressure physics, developmental laboratories for instrumentation in space physics and seismology, and computational laboratories for large-scale numerical modeling relevant to the above topics. The UCLA branch office is located in 3839 Slichter Hall (310-825-1664).

The **INSTITUTE OF PLASMA AND FUSION RESEARCH**, located in 44-139 Engineering IV (310-825-5090), is dedicated to research into plasma physics, fusion energy, and the application of plasmas in other disciplines. Students, professional research staff, and faculty study basic laboratory plasmas, plasma-fusion confinement experiments, fusion engineering and nuclear technology, computer simulations and the theory of plasmas, space plasma physics and experimental simulation of space plasma phenomena, advanced plasma diagnostic development, laser-plasma interactions, and the use of plasma in applications ranging from particle accelerators to the processing of materials and surfaces used in microelectronics or coatings.



The **WHITE MOUNTAIN RESEARCH STATION** is a multicampus research unit (MRU) dedicated to high-altitude research. Four separate laboratory sites near Bishop, California, ranging up to 14,250 feet above sea level, include the highest permanent teaching and research facilities in North America. Research includes studies in archaeology and the biological, medical, and physical sciences. The administrative office is located in 6713 Geology (310-825-2093).

Among other interdisciplinary activities in the physical sciences and engineering at UCLA, three separate research programs in the School of Engineering and Applied Science have formed a consortium, the **Center for Clean Technology**, which fosters research on the interaction between technology and the environment, focusing on pollution prevention and control. On other frontiers, an **Artificial Intelligence Laboratory** designed exclusively for research in this burgeoning field has opened under the wing of the Computer Science Department, and a **Manufacturing and Automation Research Center**, funded by the National Science Foundation, is operated jointly by UCLA's engineering school and the University of Southern California (USC).

## Social Sciences

The **OFFICE OF INTERNATIONAL STUDIES AND OVERSEAS PROGRAMS (ISOP)** supports and coordinates international and foreign area studies at UCLA. Among the area studies centers and programs that operate under its aegis are four major interdisciplinary research centers that rank among the best in the nation. Some of the world's leading specialists on area studies have joined these centers.

The **Coleman African Studies Center** (10244 Bunche Hall, 310-825-3779) is one of the major interdisciplinary centers for African studies in the U.S. It encourages and coordinates research and teaching on Africa in the humanities, social sciences, and natural sciences, as well as in the professional schools of Architecture and Urban Planning, Arts, Education, Law, Library and Information Sciences, Medicine, Public Health, and Theater, Film, and Television. The center also sponsors an active program of public lectures, seminars, publications, and academic exchanges with African institutions and an outreach service to the Southern California community.

The **Latin American Center** (10343 Bunche Hall, 310-825-4571) encourages and coordinates interdisciplinary research, academic programs, and publications. By linking campus activities with developments in the field and in other institutional settings, the center benefits UCLA, the broader community of Latin Americanists, and the general public.

The **von Grunebaum Center for Near Eastern Studies** (10286 Bunche Hall, 310-825-1181) coordinates research projects and academic programs related to the Near East and administers the interdisciplinary programs leading to the M.A. and Ph.D. degrees in Islamic Studies. The combined resources of the center include the largest faculty, one of the most comprehensive library holdings, and the richest variety of Near and Middle Eastern studies courses of any institution in the Western Hemisphere. The center also conducts significant publication and outreach programs.

The **Center for Russian and East European Studies** (11369 Bunche Hall, 310-825-4060) develops and coordinates teaching and research on Russia and the countries of Eastern Europe through conferences, lectures, seminars, and academic exchange programs with Russian and Eastern European institutions.

ISOP also supports other interdisciplinary activities such as the study of arms control, nuclear proliferation, and international cooperation and security in the **Center for International Relations**. The **Center for Pacific Rim Studies** administers the China Exchange Program and the Korea Program and promotes research, course offerings, seminars, and faculty and student exchange programs on the people and nations bordering the Pacific Ocean; the **Center for Chinese Studies** has developed a major graduate program in Chinese studies, as well as significant research on historical and social science topics; an **NDEA Joint Center in East Asian Studies** with the Uni-

versity of Southern California sponsors joint seminars and conferences focused on the East Asian region; and the **Center for Japanese Studies** fosters research on Japan and scholarly exchange with Japanese institutions. Other ISOP programs focus on development studies, language teaching, and South and Southeast Asia. In addition, ISOP houses offices of the UC Education Abroad Program, the Southern California Fulbright Visiting Scholars Program, and the Southern California Consortium on International Studies (SOCCIS).

The **INSTITUTE OF AMERICAN CULTURES** promotes the activities of four major ethnic centers whose goals are to study and illuminate the histories of our country's minorities, and to apply the University's capabilities to the analysis and solution of specific minority problems. These centers promote faculty research, encourage the development of new courses and degree programs, assist departments in recruiting scholars, build library and other resources, and publish literature to disseminate the results of their work.

The **Center for Afro-American Studies** (160 Haines Hall, 310-825-7403) conducts and sponsors research on the African American experience, coordinates the Afro-American studies curriculum, publishes research results, and sponsors community service programming.

The **American Indian Studies Center** (3220 Campbell Hall, 310-825-7315) serves as an educational and research catalyst and includes a library, master's and postdoctoral fellowship programs, and a publishing unit that produces a number of books and a quarterly journal.

The **Asian American Studies Center** (3230 Campbell Hall, 310-825-2974) seeks to increase the knowledge and understanding of the experiences of Asian Pacific peoples in America and promotes the development of material resources related to Asian American studies. The center includes a library, publications unit, student/community projects unit, postdoctoral fellowships, and a master's program.

The **Chicano Studies Research Center** (180 Haines Hall, 310-825-2363) is engaged in the development and articulation of a Chicano/Latino intellectual perspective that recognizes and fosters the creative, professional, and social potential of the Chicano/Latino population. The center, founded in 1969, directs its research efforts in several essential areas, with particular emphasis on history, cultural studies, women's studies, immigration, education, and health and participates in the National Association for Chicano Studies. In addition, the center is one of several campus members of the Inter-University Program for Latino Research, housing the Latino Leadership Opportunity Program. It sponsors several research competitions and a predoctoral and postdoctoral fellowship program.

The **INSTITUTE OF ARCHAEOLOGY**, located in A210 Fowler Building (310-206-8934), is dedicated to studying and understanding the past through laboratory studies of artifacts, analysis of field data, creation of archives to store this information, and the education of students and interested community members via publications and lectures. The institute, the only one of its kind in the U.S., coordinates various academic and practical facilities for more than 40 researchers and many graduate students and volunteers in 10 associated academic departments. It regularly sponsors workshops and special courses. Research facilities include the Information Center (regional office of the California Archaeological Inventory), Ceramics Laboratory, Computer Imaging of Archaeological Data, Obsidian Hydration and Lithics Analysis Laboratory, Paleoethnobotany Laboratory, Rock Art Archive, and Zooarchaeology Laboratory. The Publications Unit publishes the findings of scholars from UCLA and other archaeology centers, while the Public Lecture Program provides a forum for the public presentation of recent archaeological discoveries and advances.

The **INSTITUTE OF INDUSTRIAL RELATIONS**, located in 83 Haines Hall (310-825-1964), has an interdisciplinary research and publishing program directed toward the study of all aspects of the employment relationship, including labor markets, labor law, labor/management rela-

tions, equal employment opportunity, occupational safety and health, and related issues. It also offers social policy and employment relations programs to the general public, unions, and management.

The **INSTITUTE FOR SOCIAL SCIENCE RESEARCH** promotes interdisciplinary research on a broad spectrum of contemporary sociological, psychological, political, and economic problems and community issues. Research components include the Center for American Politics and Public Policy, Center for the Study of Urban Poverty, Interdisciplinary Program in Social Statistics, Survey Research Center, Social Science Data Archive, Organizational Research Program, and Center for Social Theory and Comparative History. Training in survey research methodology is available to students through participation in the annual Southern California Social Survey. The institute publishes the *ISSR Quarterly*, a newsletter for the UCLA social sciences community, and *ISSR Working Papers in the Social Sciences*; it is located in 303 Graduate School of Library and Information Science Building (310-825-0711).

Other interdisciplinary activities in the social sciences include the nationally respected **Business Forecasting Project** in UCLA's John E. Anderson Graduate School of Management and the **Center for the Study of Evaluation** in the Graduate School of Education which is at the forefront of efforts to improve the quality of schooling in America. In addition, the **Center on the Teaching and Learning of History in Elementary and Secondary Schools**, established by the National Endowment for the Humanities and based at the UCLA education school, is bringing K-12 teachers and social studies professors from throughout the country together in an effort to improve history teaching. The **Center for the Study of Urban Poverty** is initiating new research on issues related to urban poverty and is sponsoring seminars in the field. And the **Center for the Study of the Environment and Society** researches and addresses such issues as air pollution, water quality, and the public response to environmental concerns.

## Arts and Humanities

The **CENTER FOR THE STUDY OF COMPARATIVE FOLKLORE AND MYTHOLOGY**, located in 1037 AGSM (310-825-4242), supports and coordinates the study of comparative folklore and mythology. Resources include the Wayland D. Hand Library, the Visual Media and Folk Medicine Archives, the Archive of California and Western Folklore, the American Popular Beliefs and Superstitions Archive and Encyclopedia Project, the Archive of Folk Song and Music, and other collections of field recordings, records, and films.

The **CENTER FOR MEDIEVAL AND RENAISSANCE STUDIES** supports the research activities of some 20 academic departments dealing with the development of civilization between A.D. 300 and 1650. Major programs include funding research assistants, appointing postdoctoral associates and visiting professors, organizing conferences and colloquia, and supporting departments in inviting lecturers. The center sponsors the publication of research both in book-length studies and in two journals, *Viator*, with emphasis on intercultural and interdisciplinary studies, and *Comitatus*, with articles by graduate students and recent Ph.D. graduates. The center is located in 212 Royce Hall (310-825-1880, 825-1970).

The **CENTER FOR SEVENTEENTH- AND EIGHTEENTH-CENTURY STUDIES** and the **CLARK MEMORIAL LIBRARY** are united under the administrative direction of the center and the College of Letters and Science. The center, located in 395 Dodd Hall (310-206-8552), organizes scholarly programs and workshops, seeks to enlarge the Clark Library holdings in the early modern period to enhance local research opportunities, has a publications program that makes the results of its conferences and workshops known to the community, provides long- and short-term fellowships to students and scholars doing research in early modern studies, offers graduate research assistantships and master classes, and organizes public programs and classical music concerts. The Clark Library, located approximately 10 miles from UCLA at 2520 Cimarron Street (213-731-8529), is a rare book library specializing in seventeenth- and eighteenth-century British works. It has a renowned

collection centering on Oscar Wilde and his era and significant holdings of modern fine printing and Western Americana. Bequeathed to UCLA in 1934 by William Andrews Clark, Jr., a prominent Los Angeles book collector and philanthropist, the extensive collection is housed in an elegant building in the West Adams district.

In other research activities, the **Center for Bilingual Research and Second Language Education** is working to produce a society that is proficient in at least two languages. In the **Linguistics Phonetics Laboratory**, one of the best-known laboratories of its kind in the nation, researchers are finding new ways to analyze speech functions and make voiceprints for use in law enforcement. And the University has established the **Hammer Center for Leonardo Studies and Research** where scholars have access to major resources for the study of the works of Leonardo da Vinci.

## Resources for Research and Study

### University Library System

Library facilities are crucial to both study and research. The University Library on the UCLA campus is one of the country's largest and most renowned academic libraries and consists of the University Research Library, the College Library, and 11 specialized subject libraries. Collectively they contain more than six million volumes and extensive holdings of government publications, pamphlets, manuscripts, maps, microforms, music scores, recordings, photographs, and slides. They regularly receive over 95,000 serial publications.

ORION, the library's on-line information system, provides location and holdings information for most library materials and current information for materials on order or in processing. On-line circulation status information for most libraries is also available. ORION public access terminals are located in many campus libraries, and demonstrations and workshops in using the system are available at the beginning of each term.

Students have access to the stacks in most libraries. A handbook describing the organization, services, and hours of the University libraries is available in all of the campus libraries.

The **Reprographic Service**, housed in 2081 Engineering I, can duplicate books, periodicals, manuscripts, and maps.

### University Research Library

The University Research Library on north campus is a modern six-story building designed primarily as a graduate research library serving the social sciences, humanities, and several professional schools. The building houses over three million volumes arranged in open stacks, as well as the Reference Room, Circulation Department, Graduate Reserve Service, Periodicals Room, and Audiovisual Service. The Microform Reading Service, with some 1,110,000 microcopies of newspapers, books, and periodicals, has a variety of reading and copying equipment. During academic sessions library hours are weekdays 8 a.m. to 11 p.m. (6 p.m. Friday), Saturday 9 a.m. to 5 p.m., Sunday 1 to 10 p.m.

The **Department of Special Collections** in the Research Library contains rare books and pamphlets, the University Archives, early maps, and files of early California newspapers. Manuscript collections include the literary papers of Henry Miller and Anaïs Nin, as well as the private papers of Jack Benny, Charles Laughton, Carey McWilliams, King Vidor, and Nobel Peace Prize winner Dr. Ralph J. Bunche, a UCLA alumnus. Other significant holdings include the Sadleir Collection of nineteenth-century fiction, generally regarded as the finest of its kind, and the Ahmanson-Murphy Collection of Early Italian Printing (1471-1550), with a concentration on Aldine imprints. The department also includes UCLA's Oral History Program, a national leader in the field with over 400 interviews with prominent individuals since the program was founded in 1959.

The **Public Affairs Service**, also housed in the Research Library, collects official publications of the U.S. government, the State of California, California counties and cities, selected U.S. state and local governments, foreign nations and selected foreign states and provinces, plus those of the United Nations and some of its specialized agencies and a number of other international organizations. Also housed are current English-language, nongovernmental pamphlets on public affairs representing a wide spectrum of political and social opinion, with strong emphasis on social welfare, economic, social, and political conditions, and industrial relations.

### College Library

The College Library is designed to meet the instructional and informational needs of most undergraduate students. It is permanently located in the Powell Library Building but is housed in a temporary structure — commonly known as "Towell" — until 1995 while Powell undergoes seismic renovation. Towell is located at the foot of Janss Steps between the Dance Building and the Men's Gym and houses 200,000 books and periodicals; course reserve materials, including audiocassettes, lecture notes, past examinations, and APS (Academic Publishing Service) readings available for loan; and the Humanities Computing Laboratory with 36 IBM PS/2s, Macintoshes, and printers. During academic sessions library hours are weekdays 8 a.m. to 11 p.m. (6 p.m. Friday), Saturday 9 a.m. to 5 p.m., Sunday 1 to 10 p.m.

### Specialized Subject Libraries

The resources of the specialized campus libraries are devoted mainly to subjects of concern to the departments or professional schools which they serve, but their materials are available to all UCLA students and faculty. A recorded message (310-825-8301) provides current hours of service for each library.

The **Arts Library** in Dickson Art Center houses material on art, art history, design, film, television, theater, architecture, city and regional planning, and transportation. The Belt Library of Vinciana is also located in Dickson Art Center. Arts Special Collections, located in the University Research Library, contain noncirculating materials, including the Princeton Index of Christian Art, the Artists' File, and other special collections such as unpublished radio, film, and television scripts and archival records of major Southern California motion picture studios.

The **Louise Darling Biomedical Library**, in the Center for the Health Sciences, is one of the finest libraries of its kind in the country. Its 500,000 volumes and nearly 6,000 serial subscriptions serve all the UCLA health and life sciences departments/schools and the UCLA Medical Center.

The **Chemistry Library** includes material on chemistry, biochemistry, and molecular biology, while materials in Chinese, Japanese, and Korean are available in the **Rudolph East Asian Library**. Materials for engineering, astronomy, computer science, meteorology, and mathematics are kept in the **Engineering and Mathematical Sciences Library**, and major subjects covered by the **Geology-Geophysics Library** include geoscience, invertebrate paleontology, planetary and space science, and hydrology.

The **Hugh and Hazel Darling Law Library** has a substantial collection of over 400,000 volumes selected to further the course of instruction in the School of Law and the legal research needs of the UCLA community, and the **Management Library** serves the John E. Anderson Graduate School of Management and the various subjects related to business and management. The **Bruman Map Library** in Bunche Hall houses maps, city plans, nautical charts, and technical books and serials on all aspects of cartography and is one of the largest of its kind in the U.S.

The **Rubsamen Music Library** houses historical musicology and ethnomusicology materials, musical scores, recordings, and the personal collections of such composers as Henry Mancini, Alex North, and Ernst Toch. It is also responsible for the Archive of Popular American Music which contains sheet music, anthologies, arrangements for band and orchestra, sound recordings, and manuscripts. The **Physics Library** covers all aspects of that science, including acoustics and spectroscopy.



### Other Campus Information Resources

In addition to the extensive collections of the University Library, a rich array of other information resources is available to the UCLA community. The archives and collections listed below are independently managed by individual UCLA departments and centers.

The **American Indian Studies Center Library** houses a collection on American Indian life, culture, and state of affairs in historical and contemporary perspectives, while the **Asian American Studies Center Reading Room** features Asian Pacific American resources. The **Center for Afro-American Studies Library** contains materials reflecting the African American experience in the social sciences, arts, and humanities.

Materials related to Chicano and Latino cultures are housed in the **Chicano Studies Research Center Library**, and the **Clark Memorial Library** contains rare books, manuscripts, and other noncirculating materials on English culture (1640-1750). The **English Reading Room** features a noncirculating collection of English and American literature.

The **Ethnomusicology Archive** houses sound recordings of folk, ethnic, and non-Western classical music, while the **Institute for Social Science Research Data Archive Library** contains a collection of statistical data bases for the social sciences. The **Seeds University Elementary School Library** features contemporary materials for children from kindergarten through junior high school and adult works on children's literature.

### Special Archive Collections

The **UCLA FILM AND TELEVISION ARCHIVE** is the world's largest university-based collection of motion pictures and broadcast programming. The archive's holdings of original film and television materials serve both the UCLA community and national and international constituencies.

The Motion Picture Collection, with more than 37,000 films, is the country's largest collection after the Library of Congress. Among its outstanding collections are 27 million feet of Hearst Metrotone News film dating back to 1919. Other noteworthy holdings include studio print libraries from Twentieth Century-Fox, Paramount Pictures, Warner Brothers, Columbia Studios, New World Pictures, Universal Studios, and Orion. Special collections document the careers of William Wyler, Hal Ashby, Tony Curtis, Rosalind Russell, Stanley Kramer, Cecil B. DeMille, Harold Lloyd, and other persons of prominence in the American film industry.

The Television Collection is the nation's largest university-based collection of television broadcast materials. Its 35,000 titles include kinescopes, telefilms, and videotapes spanning television history from 1946 to the present, with emphasis on drama, comedy, and variety programming. A special collection of over 100,000 news and public affairs programs is also maintained.

The archive's exhibition program presents evening screenings and discussions in Melnitz Theater which focus on archival materials, new work by independent filmmakers, and a wide array of international films. For program information, call (310) 206-FILM.

The Archive Research and Study Center (ARSC), located in 180 Powell Library (310-206-5388), provides on-site viewing of the Film and Television Archive's collections and research consultation to students, faculty, and researchers. ARSC hours are weekdays 8:30 a.m. to 5 p.m. Extended viewing hours are available at the Instructional Media Laboratory.

### Art Galleries and Museums

A tour of all the UCLA museums and art galleries will take you from one corner of campus to the other. In the course of three decades UCLA's **WIGHT ART GALLERY COMPLEX** has evolved into a multifaceted museum, responsive to the needs of the University and the general public. The complex includes the Wight exhibition galleries, with 11,000 square feet of exhibition space in which to mount approximately eight exhibitions per year, the Grunwald Center for the Graphic Arts, and the Murphy Sculpture Garden.

Located in the Dickson Art Center on north campus, the **Wight Art Gallery** is open Tuesday 11 a.m. to 7 p.m., Wednesday through Friday 11 a.m. to 5 p.m., Saturday and Sunday 1 to 5 p.m. (closed Monday, major holidays, and July and August). Admission is free. Tours are offered Saturday and Sunday by the UCLA Art Council docents; special group tours may be arranged by calling (310) 825-3264. The administrative office is located in 1100 Dickson Art Center. For a schedule of exhibitions, call (310) 825-9345.

On the second floor of the Wight Art Gallery is the **Grunwald Center for the Graphic Arts**, which houses a distinguished collection of over 35,000 prints, drawings, and photographs. Maintained as a study and research facility for the benefit of students and the community, the center's permanent holdings include significant European and American examples from the thirteenth century to the present. It is particularly noted for its collection of German expressionist prints formed by Fred Grunwald and the comprehensive holdings of Matisse and Picasso, as well as the Richard Vogler Cruikshank collection and the Frank Lloyd Wright collection of Japanese prints. The center, located in 2122 Dickson Art Center (310-825-3783), is open by appointment Monday through Friday from 9 a.m. to 5 p.m.

The **Murphy Sculpture Garden**, located between Bunche Hall and the Wight Art Gallery, contains a collection of over 70 major works by Rodin, Matisse, Calder, Lachaise, Lipchitz, Moore, Miro, Hepworth, and many other late nineteenth- and early twentieth-century masters. All works in the growing collection, situated on a picturesque five-acre expanse, are private gifts to the University.

The **FOWLER MUSEUM OF CULTURAL HISTORY** is internationally known for the quality of its collections and exhibits. Its collections encompass the arts and material culture of much of the world, with particular emphasis on West and Central Africa, Oceania, and Latin America. The museum offers assistance with instruction and research and sponsors major exhibitions, lecture programs, and symposia. Administrative offices are located in 1586 Fowler Building (310-825-4361).



### Other Resources

The **OFFICE OF ACADEMIC COMPUTING (OAC)** provides microcomputer and workstation support services through its Microcomputer Support Office (MSO), campus backbone network services through its Campus Network Services (CNS) group, and supercomputer services through its Computing Services group. OAC offers a broad range of services, including an IBM ES/9000 Model 900 supercomputer with six

vector facilities; public computing facilities; instruction in the use of computer hardware and software through free noncredit classes; professional consulting services; user documentation and *Perspective*, a quarterly publication; and assistance to departments in the selection of microcomputer and workstation hardware and software and computing assistance to faculty, staff, and students with disabilities through MSO.

The **Microcomputer Support Office**, located in 2035 AGSM (310-825-7408), provides services enabling departmental computer support coordinators to provide assistance to faculty and students on the use of microcomputers and advanced workstations, as well as special services in computing for faculty, students, and staff with disabilities. MSO services are intended to support the integration of microcomputers and advanced workstations into administrative, instructional, and research programs as well as individual microcomputer acquisition and use. MSO supports local area networks and their connection to the campus backbone network and coordinates site licenses, user groups, and an electronic newsletter. Most services are available through the Microcomputer Information Center (MIC).

OAC's IBM ES/9000 runs the MVS/ESA and AIX/ESA operating systems and is available to all colleges, schools, and departments within UCLA, as well as to all registered students. OAC maintains a large library of applications software, including statistical, text processing, language, and graphics packages. The ES/9000, together with its vector facilities, is particularly appropriate for numerically intensive computing and data management tasks. In the numerically intensive computing area, OAC provides a code clinic with professional consultants to analyze and improve the efficiency of specialized code in numerically intensive computing applications. In the visualization area, OAC consultants work with users in producing the high-quality graphic output necessary for research in many scientific disciplines. OAC is connected to the campus backbone network, thus enabling access to its services wherever there is a connection to the network. These services include access to ORION, the UCLA on-line library information system; use of BEN, an electronic communication system; and access to the Internet and BITNET. Information on how to apply for an account to use the IBM ES/9000 is available in the OAC User Relations Office (4302 Math Sciences, 310-825-7548) weekdays from 8 a.m. to 5 p.m.

The **DIVISION OF LABORATORY ANIMAL MEDICINE**, located in 1V-211 CHS (310-825-7281), is responsible for the procurement, husbandry, and general welfare of animals required for teaching and investigative services. It also administers the veterinary medical and husbandry programs throughout the campus.

The University of California **NATURAL RESERVE SYSTEM** offers 26 reserves statewide to be used for field studies in unspoiled natural sites and for protected scientific experiments. For more information, contact Robert M. Gibson, 1122 Life Sciences (310-825-6459).

The **BIOLOGICAL COLLECTIONS** of the Biology Department include marine fishes from the Eastern Pacific and Gulf of California, and birds and mammals primarily from the Western U.S., Mexico, and Central America. The department also maintains a more limited collection of amphibians, reptiles, and fossil vertebrates, as well as collections of algae, fungi, and bacteria. For more information, contact W. Jaap Hillenius, 2203 Life Sciences (310-825-3482).

Although the UCLA campus as a whole has an attractive, park-like atmosphere, there are two distinctive garden areas worthy of special note. The eight-acre **MATHIAS BOTANICAL GARDEN**, located in the southeast corner of campus, contains some 4,000 species of native and exotic plants. It is used for botanical and ornithological teaching and research. This peaceful wooded area, a center for testing the usefulness of woody subtropical plants, is a favorite spot for quiet strolls. The botanical garden also has a research Herbarium containing 170,000 dried plant specimens. The administrative office is located in 124 Botany (310-825-3620).

The **CARTER JAPANESE GARDEN** in nearby Bel Air, designed and constructed by Japanese artisans and architects using native plants and artifacts, is an authentic Kyoto-style garden. The terraced two-acre garden contains such traditional and symbolic features as a teahouse,

shrine, antique stone water basins, lanterns, waterfalls, and a pond with Japanese carp (koi) swimming among water lilies. The garden, a private gift to UCLA, is used by faculty and students for study and research, by departments for professional events, and by others seeking a serene setting for meditation and solitude. It is open to groups by reservation only. Call the Visitors Center at (310) 206-8147.

## Supplementary Educational Programs

In addition to the regular academic programs which are described in Chapters 5 through 18 of this catalog, the following optional programs are available to UCLA's undergraduate and graduate students.

### Summer Sessions

UCLA offers more than 500 courses from approximately 60 UCLA departments in six-, eight-, and 10-week sessions. Many students take advantage of Summer Sessions to enroll in courses they were unable to take during the year, repeat courses in which they may have done poorly, lighten their academic load for the following term, or complete graduation requirements more quickly.

Admission to Summer Sessions does not constitute admission to the University in either undergraduate or graduate standing. Students who wish to attend UCLA in regular session must follow admission procedures described in Chapter 2 (undergraduate) or Chapter 3 (graduate).

If you are a regularly enrolled undergraduate student, you may attend UCLA Summer Sessions for full unit and grade credit. Summer Sessions work is recorded on your UCLA transcript, and grades earned are computed in your grade-point average. Check with your college or school counselor about applying these courses toward your minimum unit requirements and for any limitations your college or school may impose on Summer Sessions study.

If you are a regularly enrolled graduate student, you may, with departmental approval, take regular session courses offered in Summer Sessions for credit toward a master's or doctoral degree; consult your graduate adviser in advance concerning this possibility. Summer Sessions courses may also satisfy the academic residence requirement for master's or doctoral degrees (see Chapter 3 for details).

Unlike enrollment in regular terms, you may attend another college institution for credit while you are enrolled in Summer Sessions. Applications and more information are available in 1147 Murphy Hall (310-825-8355).

### UCLA Extension

With over 110,000 adult student enrollments each year, UCLA Extension is one of the largest university continuing education programs in the world. It is designed to bring the benefits of the University — its scholars, research, and resources — to the community and the state as a whole.

Many of UCLA Extension's 4,500 classes are innovative and experimental in content, format, and teaching methods. Credit and noncredit courses are offered in nearly every academic discipline, in many interdisciplinary areas, and in emerging fields. In addition, Extension offers special programs each term on topical issues as well as those of ongoing public concern. Many noncredit Extension courses offer the opportunity to earn Continuing Education Units, widely used for relicensure and other professional/career-related purposes.

Although registering for Extension courses does not constitute admission to regular session, degree credit earned through Extension may apply toward the UCLA bachelor's or master's degree; consult your college or school counselor or graduate adviser before enrolling. For more information, see the sections on "Concurrent Enrollment and Transfer of Credit" and "Courses of Instruction" in Chapter 4. Graduate students should also see "Transfer of Credit" in Chapter 3.

The Extension Advisory Service offers assistance in planning long- or short-term study through Extension. The office is located in 114 UCLA Extension Building, 10995 Le Conte Avenue (310-206-6201). To obtain the current *UCLA Extension Catalog*, contact the Registration Office at (310) 825-9971. Hours are weekdays from 8 a.m. to 6 p.m. (5 p.m. Friday).



EAP students in Japan.

## Education Abroad Program (EAP)

Each year more than 1,400 undergraduate and graduate students from UC campuses study at distinguished universities throughout the world. UCLA students remain registered here while overseas and receive UC units and grade points for work completed abroad. Currently, EAP offers study opportunities at nearly 100 different universities in 32 countries: Australia, Austria, Brazil, Canada, Chile, China, Costa Rica, Denmark, Egypt, England, France, Germany, Ghana, Hong Kong, Hungary, India, Indonesia, Ireland, Israel, Italy, Japan, Kenya, Korea, Mexico, New Zealand, Norway, Russia, Scotland, Spain, Sweden, Taiwan, Thailand, and Wales. Participants generally spend a full academic year abroad, enjoying a unique opportunity to enhance language skills and become involved in the culture of the host country. One-term programs are available in Brazil, Chile, China, Hungary, Italy (Bocconi), Korea, Mexico, Russia, and Taiwan. Summer programs are offered in Denmark, Mexico, and Thailand. In Costa Rica there is a year program, a one-term tropical biology field study, and programs for medical students. For all programs a special orientation program and, when necessary, intensive language training are included. During the year UC faculty members at the host university assist with scholastic or personal problems.

EAP is open to all undergraduate students who have (1) completed a minimum of 90 quarter units (junior standing) prior to departure, (2) at least a B average (3.0 GPA) overall at the time of application, and (3) the support of the UCLA EAP Selection Committee. Some programs have a language requirement as well.

Graduate students who have completed at least one year of graduate work and have the approval of their graduate adviser and the dean of the Graduate Division may participate at most study centers.

Costs for participation in EAP vary from \$1,740 to \$16,004, but University financial aid is available to those who qualify. Applications must be filed several months in advance. For more information, contact the EAP Office in 28 Haines Hall (310-825-4889, 825-4995).

## Education at Home Program

Students interested in early American history and culture have the opportunity to spend Winter Quarter 1994 "on location" in three Eastern cities. The Education at Home Program, conducted through the UC Riverside

campus, is open to graduate students (with prior approval of their adviser) and undergraduates from any campus in the UC system.

Those selected for participation spend nine weeks in Williamsburg, with concluding visits to Philadelphia and Washington, DC. Formal instruction consists of three American history courses (four units each) comprising classroom work and field trips to places of historical interest. An additional four units of independent study may be arranged. For further information, brochures, or applications, write to the Education at Home Program, Department of History, University of California, Riverside, CA 92521, or call Susan Braddock at (909) 787-3820.

## Interdisciplinary Colloquia

Organized colloquia involving several disciplines are offered from time to time in conformity with faculty and student interests. They are open to all faculty members, interested undergraduates, and graduate students assigned to the colloquia by their advisers. Credit is not awarded directly but may be given through appropriate departmental courses. For information about the committees in charge of the colloquia, call the assistant to the provost of the College of Letters and Science at (310) 825-4621.

The **Marschak Interdisciplinary Colloquium on Mathematics in the Behavioral Sciences** provides a forum for interaction among faculty and students interested in the applications of mathematics and statistics to the behavioral sciences. Disciplines include anthropology, architecture, artificial intelligence, biology, business, computer science, economics, education, engineering, geography, linguistics, management, operations research, philosophy, political science, psychology, public health, public planning and policy, sociology, and systems analysis.

The colloquium sponsors presentations by leading experts in these fields, including faculty members from UCLA, other UC campuses, and other universities, and meets on alternate Fridays from 1 to 3 p.m. in 2270 AGSM during the academic year. Announcements of presentations, including abstracts of the papers to be presented, are circulated and posted on campus; announcements also appear in *UCLA Today*. The colloquium is directed by Michael D. Intriligator, professor of economics and political science. For further information, contact the Western Management Science Institute at (310) 825-1581 or 825-4144.

The **Rothman Colloquium in Cognitive Science**, organized by the interdisciplinary Cognitive Science Research Program, sponsors presentations by leading experts in the broad field of cognitive science, which explores the nature of human and artificial intelligence. Participating disciplines include artificial intelligence, biology, linguistics, neuroscience, philosophy, and psychology. The list of speakers is circulated to the participating departments on campus. For further information, contact the Cognitive Science Research Program at (310) 825-0951.



# Student Life

## Living Accommodations

Where you live while attending UCLA can play an important role in your total college experience. Many students, especially those in their first year, choose to live on campus; others opt for a University-owned apartment or a private apartment in one of the many surrounding communities.

There are many different housing options available. Decide early which ones you plan to pursue and apply for or follow up on them as soon as possible. If you plan to live off campus, arrive early to make your housing arrangements for the coming academic year. Some students even pay rent year-round to insure accommodations, and try to sublet during the summer months.

The **UCLA Community Housing Office**, 350 De Neve Drive, Los Angeles, CA 90024-1495, (310) 825-4491, provides information and current listings for University-owned apartments, cooperatives, private apartments, roommates, rooms in private homes, room and board in exchange for work, and short-term housing. Rental listings are updated daily. The housing office also has bus schedules, area maps, and neighborhood profiles. A current Registration Card or letter of acceptance and a valid photo identification card are *required* for service.

The International Student Center on Hilgard Avenue helps international students find housing and may also provide temporary facilities until suitable permanent housing arrangements are made.

*UCLA Housing Options and Opportunities: Information and Application*, a booklet which covers housing options in much greater detail, is mailed to all students when they are accepted for admission.

### On-Campus Housing

Living on campus can add an extra dimension of academic support, enjoyment, and convenience to your UCLA experience. Four residence halls (Dykstra, Hedrick, Rieber, and Sproul Halls), two residential suite complexes (Hitch and Saxon Residential Suites), and Sunset Village accommodate nearly 6,000 undergraduates, while Hershey Hall houses 334 graduate students. All on-campus housing is coed and within walking distance to classrooms.

Residence hall rooms are shared by two or three students. Residential suites — shared by four or six students — consist of two bedrooms, a full bathroom, and a common living room. Sunset Village has one- and two-bedroom units, each with a full bath, shared by two or three students per bedroom. The four residence hall cafeterias and the dining commons in Sunset Village accommodate all on-campus residents and serve 19 meals per week. Residents may also select a 14- or 11-meal plan.

Applications for on-campus housing are contained in the *UCLA Housing Options and Opportunities: Information and Application* booklet, available at the **UCLA On-Campus Housing Assignment Office**, 270 De Neve Drive, Los Angeles, CA 90024-1381, (310) 825-4271. Assignments to on-campus housing are made annually through a housing lottery. In order to be eligible for the lottery, your completed application must be postmarked by the following deadlines:

- March 31 (June 1 for graduate students) for Fall Quarter 1993
- October 27 for Winter Quarter 1994
- January 26 for Spring Quarter 1994
- March 31, 1994 (June 1 for graduate students) for Fall Quarter 1994

Following each of these dates, the lottery will be held to determine the order in which students will be offered housing. **All new freshman and transfer students who are admitted for Fall Quarter and apply for the housing lottery by the stated deadline are guaranteed on-campus housing.**

The full cost per student for the 1993-94 academic year (Fall, Winter, and Spring Quarters, excluding vacation periods) is \$4,690 (triples) or \$5,410 (doubles) for residence halls, \$5,800 (six persons) or \$6,425 (four persons) for suites, \$5,875 (three persons/one bedroom or six persons/two bedrooms) or \$6,500 (two persons/one bedroom or four persons/two bedrooms) for Sunset Village, plus a \$21.45 membership fee in the On-Campus Housing Student Association. These rates include 19 meals per week.

The **Office of Residential Life**, in the Residential Life Building near Sproul Hall (310-825-3401), is responsible for the conduct of students in residence halls and suites and provides professional and student staff members to counsel residents on programming and other problems. The office is also a designated Sexual Harassment Information Center, as well as a campus Harassment Information Center, available to all UCLA students (see "Harassment" in the Appendix for more information).

### University Apartments for Family Students

UCLA maintains nearly 1,200 off-campus apartments about five miles from campus for married and single-parent students. Unfurnished one-, two-, and three-bedroom units are available. One-bedroom rentals for 1993-94, excluding utilities, are expected to range from \$501 to \$730 per month. Since waiting lists for family student housing are long, *do not wait until you have been accepted to UCLA to apply*. Verification of marriage and/or copies of children's birth certificates (English translation) must accompany your application. Call University Apartments/South at (310) 398-4692 for up-to-date information.

### University Apartments for Single Students

Over 230 apartments for single students in four off-campus facilities are maintained by the University; all are located within walking distance of campus. Rental rates vary depending on the location and size of the apartment. All occupants must be full-time UCLA students; rental agreements are month-to-month including summers. An application is included in the *UCLA Housing Options and Opportunities: Information and Application* booklet, available at the UCLA On-Campus Housing Assignment Office. Apartments are available throughout the year, especially at the end of each term, on a first come, first served basis. Call University Apartments/North at (310) 825-2293 for current availability information (best selection is in June and July). Roommate vacancies in University apartments are routinely posted in the UCLA Community Housing Office.

### Cooperatives/Boarding Houses

There are several student cooperatives within walking distance of campus which provide an atmosphere similar to residence halls except that you must work three to four hours per week as partial payment for room and board. There are also several boarding houses and private residence halls convenient to UCLA. Phone numbers are available from the UCLA Community Housing Office.

## Fraternities and Sororities

Many of the 53 fraternities and sororities at UCLA own chapter houses on the west and east sides of campus respectively. For sororities, you must be a member to live in the house and generally will be able to move in after your first year of active membership. For fraternities, living in the house depends on the number of housing spaces available. Room, board, and dues are about the same as the monthly residence hall fee. During the summer break, most fraternities with chapter houses lease rooms to students, Greek or not (check listings at the UCLA Community Housing Office). For more information, contact Fraternity and Sorority Relations, 118 Men's Gym (310-825-6322).



## Apartments

If you would like to rent an apartment off campus, you must carefully consider the kind of living arrangements you can afford. Your financial situation may dictate how close you live to UCLA and whether you can live alone or must share an apartment. Apartments within three miles of UCLA (Westwood, West Los Angeles, parts of Brentwood and Santa Monica) average \$600 per month for single units and \$850 for one-bedroom units. Apartments more than four miles away (Palms, Mar Vista, Culver City) usually cost \$100 to \$150 less. Listings change daily and are posted in the UCLA Community Housing Office. A roommate share board is also available.

## Short-Term Housing

If you need temporary quarters until you find something permanent, there are several hotels and motels within five miles of campus with varying rates and accommodations. Most short-term housing is available for no more than one to three months, though some may be for longer periods. Sublets are most readily available from May to August. Hotel and motel listings, which may be requested by mail or phone, are available in the UCLA Community Housing Office.

## Transportation

### Parking Services

A limited number of parking permits are available for the main campus. Unfortunately, not all students who request a permit can be offered space in their area of preference. You may obtain an application and instructions at Parking Services (555 Westwood Plaza, Structure 8, Suite 100, 310-825-9871). To be considered, apply by the deadline dates listed on the Calendar at the beginning of this catalog or in the quarterly *Schedule of Classes*.

Students with permanent or temporary disabilities who have DMV-issued disabled persons' license plates or placards may apply to the Office for Students with Disabilities for parking assignments and on-campus

transportation assistance. Students with short-term disabilities (usually less than three months) who do not have DMV-issued disabled persons' license plates or placards may obtain authorization for disabled parking through Student Health Service.

The application process for parking includes Parking Services' evaluation of your personal transportation needs. Parking assignments are based on a number of factors, including distance you live from campus, employment obligations, and other transportation and educational-related factors. Once evaluated, you are notified of your assignment or denial. You must accept and submit the parking offer by the published deadline. If you are not offered a permit for a particular term, you must reapply each term to be reconsidered. For more information, call Parking Services at (310) 825-9871.

## Commuter Assistance-Ridesharing

The Commuter Assistance-Ridesharing (CAR) Office can help you find alternative means of transportation to and from campus other than driving alone in your car.

Many students form or join existing UCLA carpools and vanpools to save time and money and make the daily commute more pleasant. A carpool matchlisting service is **free** to all students and can be requested by contacting CAR at (310) 794-RIDE. Students who form a three-person carpool may apply for a student carpool permit through Parking Services (310-825-9871). There are over 100 vanpools serving over 65 communities throughout Southern California. Students can sign up for vanpools on a full-time (month-to-month) or part-time (occasional) basis. To find out whether a vanpool currently operates from your area, call the vanpool coordinator at (310) 794-RIDE.

A Guaranteed Ride Home (GRH) program has been developed to aid full-time UCLA vanpoolers and qualified part-time vanpoolers in the event of an emergency or other unscheduled need to get home quickly. The service consists of three options — night rider vans which are vanpools that arrive on campus at 9 and 9:30 a.m. and leave at 6 or 7 p.m., overnight rental car service, and emergency carpool matchlist service. For detailed information, contact the GRH coordinator at (310) 794-RIDE.

Public bus lines connect UCLA to Santa Monica, Culver City, Beverly Hills, and most of the greater Los Angeles area. Bicycles, mopeds, and motorcycles are other popular ways to get to campus; several bike paths in the local area make your ride easier and safer, and there are special parking areas on campus specifically marked and equipped for these vehicles. Scooter and motorcycle parking permits are required and may be obtained through Parking Services.

All of these transportation alternatives are described in the *UCLA Commuter Guide*, a booklet which also contains a carpool matchlist form, information on public bus routes, and helpful hints on getting to UCLA without using your car. It is available at the Commuter Assistance-Ridesharing Office (555 Westwood Plaza, Structure 8, Suite 200). CAR is open weekdays from 7:30 a.m. to 6 p.m. (310-794-RIDE).

## ASUCLA

Every registered UCLA student is a member of the Associated Students of UCLA (ASUCLA), one of the nation's largest such enterprises in terms of size, scope, and range of programs. The undergraduate and graduate student governments are integral parts of ASUCLA, which supports the following activities and services.

### Food Service

ASUCLA operates the food service on the general campus and provides a number of innovative menu options at a variety of locations. Catering for special events is also available. Hours listed are for regular school sessions and vary during the summer and holiday periods.

**COOPERAGE** — On the A Level of Ackerman Union, the Cooperage offers Mexican food, pizza, grill items, gourmet salad bar, pastries, gourmet coffees, and soft ice cream. A stage and sound system for live entertainment and a large-screen TV for major events are available. Hours are weekdays 8:30 a.m. to 10:30 p.m., Saturday 11 a.m. to 10:30 p.m., Sunday 11 a.m. to 10 p.m.

**NORTH CAMPUS STUDENT CENTER** — This facility, just southwest of the Research Library, offers a variety of Mexican entrees, frozen yogurt, fresh-baked cookies, pizza, deli and garden sandwiches, a wide selection of international-style entrees, hamburgers, and a salad bar. North Campus is open for breakfast, lunch, and dinner. Hours are weekdays 7 a.m. to 10 p.m. (8 p.m. Friday), Saturday 9:30 a.m. to 6 p.m., Sunday 11 a.m. to 8 p.m.

**BOMBSHELTER DELI AND BURGER BAR** — This unique food service in the center of the Court of Sciences offers an assortment of traditional deli sandwiches, snacks, frozen yogurt, broiled hamburgers and chicken, and salads at reasonable prices. A full breakfast menu is served in the morning. Hours are weekdays 7:30 a.m. to 5 p.m. (4 p.m. Friday), Saturday 10:30 a.m. to 2:30 p.m.

**TREEHOUSE** — Located on the first floor of Ackerman Union, the Treehouse area is being transformed into a food court with a wide variety of choices. **Tout de Suite** offers candy by the pound and frozen yogurt. **Panda Express** features quick-serve Asian specialties. Hansen's fresh fruit juices, smoothies, and gourmet coffees are served at the **Tropix** beverage bar. A new sandwich area is scheduled to open during Winter Quarter 1994. On the east side of the dining room, the servery offers ranch-fried chicken, chili, Italian-style dishes, deli salads, traditional American favorites, grilled sandwiches, and hamburgers. The Treehouse servery is open weekdays 7 a.m. to 7:30 p.m. (3 p.m. Friday). Hours vary for Tout de Suite, Tropix, Panda Express, and other food court choices; they generally are open later than the servery and on weekends.

**CAMPUS CORNER** — The oldest of the ASUCLA food facilities, the Campus Corner is located just across Bruin Walk from Kerckhoff Hall. **Taco Bell Express** is on the north side, while the south side offers pita bread pocket sandwiches, frozen yogurt, burgers, and French fries. Hours are weekdays 7:30 a.m. to 5 p.m. (4 p.m. Friday).

**KERCKHOFF COFFEE HOUSE**, on the second floor of Kerckhoff Hall, offers Baskin-Robbins ice cream specialties and a variety of teas, coffees, fresh pastries, and potages (hearty soups). Live entertainment is featured Tuesday, Thursday, and Friday nights. Hours are weekdays 7 a.m. to midnight, weekends 10 a.m. to 11 p.m.

**POTLATCH**, a lounge on the first floor of the Anderson Graduate School of Management, offers a variety of sandwiches, snacks, and beverages. Hours are Monday through Thursday 7:45 a.m. to 9 p.m., Friday 8:45 a.m. to 2 p.m.

**LU VALLE COMMONS**, located between the Anderson Graduate School of Management and the School of Law, features deli food, international entrees, hamburgers, and other grilled specialties. Hours are weekdays 7:30 a.m. to 9 p.m. (8 p.m. Friday), Saturday 10 a.m. to 5 p.m., Sunday 11 a.m. to 8 p.m.

Within Lu Valle Commons is **Jimmy's Coffee House**, featuring specialty beverages, cheesecakes, and desserts. Hours are weekdays 7 a.m. to midnight (9 p.m. Friday), Saturday 9 a.m. to 9 p.m., Sunday 10 a.m. to 10 p.m.

## Students' Store

The ASUCLA Students' Store, the largest on-campus retail store in the nation, is actually a mini department store with four campus locations. The **Main Store** (B Level of Ackerman Union, 310-825-7711) offers textbooks, an extensive selection of over 65,000 general book titles, school and art supplies, calculators and other electronic items, UCLA insignia merchandise (Bearwear), men's and women's sportswear, groceries, health/beauty aids, and greeting cards. The University's computer purchase program is administered through the Main Store — Macin-

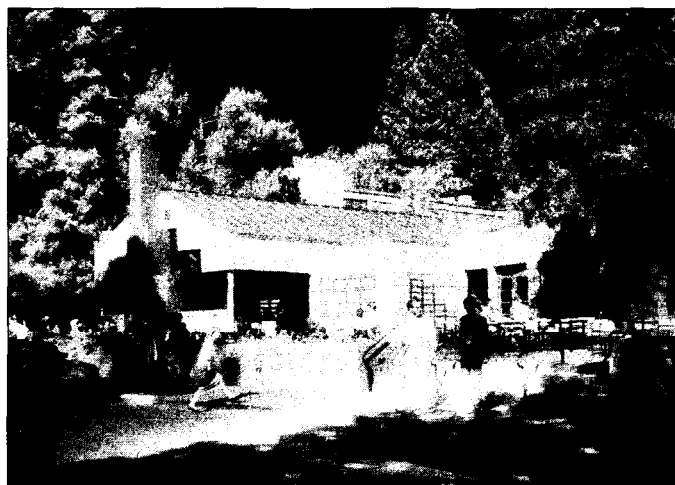
tosh and IBM computers are available to students, faculty, and staff at discounts up to 40 percent. Selected software is discounted as much as 75 percent. Hours during regular school sessions are weekdays 7:45 a.m. to 7 p.m. (6 p.m. Friday), Saturday 10 a.m. to 5 p.m., Sunday noon to 5 p.m.

Because Ackerman Union is undergoing seismic renovation, Main Store departments will be relocated during the 1993-94 academic year. The technical book department has already moved to the A Level of Ackerman; the general book department is expected to move there during Fall Quarter 1993. The temporary home of the textbook department as of early Winter Quarter 1994 will be a new wing on the Wooden Center — Wooden Center East — scheduled for construction during Summer and Fall Quarters 1993.

The **Health Sciences Store** on the first floor of the hospital (13-126 CHS, 310-825-7721) specializes in books and supplies for students in dentistry, medicine, public health, and related areas. The **Lu Valle Commons Students' Store** (just south of AGSM, 310-825-7238) carries convenience items, magazines, and general books for the north campus area, as well as textbooks for selected graduate programs (law, management, architecture, urban planning, social welfare). A dry cleaning service and copy center are also available. The **North Campus Shop** (in the North Campus Student Center, 310-206-0751) is a small convenience store offering school supplies, snacks, and other convenience items. The **Hilltop Shop** (in Delta Terrace, Sunset Village, 310-206-4306) carries items specifically for dorm residents, such as room space savers, laundry detergent, and groceries. An automatic teller machine and copy center are also available.

## Lecture Notes/Academic Publishing Service

The **Lecture Notes Office** (A206 Ackerman Union, 310-206-0882) publishes concise weekly summaries of about 130 of UCLA's large lecture classes. Hours during regular school sessions are weekdays 7:45 a.m. to 6:30 p.m. (6 p.m. Friday), Saturday 10 a.m. to 5 p.m., Sunday noon to 5 p.m. **Academic Publishing Service** (179 Kerckhoff Hall, 310-825-2831) reproduces course materials for professors, obtaining 5,000 copyright authorizations each year, and is scheduled to move from Kerckhoff Hall to the Ackerman Union Second-Floor Lounge during 1993-94.



## Job Opportunities on Campus

ASUCLA reserves over 2,500 part-time jobs for UCLA students in food service, the students' stores, Graphic Services, Travel Service, the student union, and other departments. Listings are posted outside the Personnel Office, 205 Kerckhoff Hall (310-825-7055).

The residence halls offer a number of positions, as do the University libraries; check at the residences and the Personnel Office in the University Research Library (310-825-7947). Other on-campus jobs may be

available through the Placement and Career Planning Center (see "Student Services" later in this chapter).

## Campus Photo Studio

Yearbook portraits, portrait photography, and passport photographs are available from the Campus Photo Studio (150 Kerckhoff Hall, 310-206-0889), as are film, darkroom supplies, and discount photofinishing. Hours are weekdays 8:30 a.m. to 5:30 p.m. The studio is scheduled to move to the Ackerman Union Second-Floor Lounge during 1993-94.

## Check Cashing

Cash is available via on-campus automatic tellers. Home Federal has three locations: outside the North Campus Student Center, outside the Health Sciences Store, and on the A Level of Ackerman Union. Great Western Bank and Bank of America have automatic tellers on the patio between Campbell Hall and the North Campus Student Center. Additional Bank of America automatic tellers are located on the A Level of Ackerman Union, as are those for First Interstate Bank and Wells Fargo Bank. All the automatic tellers give access to the Star, Plus, or Cirrus network; network information is posted on each machine.

Students, faculty, and staff with current UCLA identification may also write checks for \$20 over the amount of purchase at all Students' Store locations; a \$2 minimum purchase is required.

## Graduation Et Cetera

Caps and gowns may be rented/purchased at Graduation Et Cetera (across from Tout de Suite on the first floor of Ackerman Union, 310-825-2587). Graduation announcements, diploma mounting, and other services are also offered. Hours are weekdays 8:30 a.m. to 5 p.m.

## Graphic Services

ASUCLA Graphic Services (150 Kerckhoff Hall, 310-206-0894) is the campus center for printing, copying, typesetting, and other graphic services and is scheduled to move from Kerckhoff to the Ackerman Union Second-Floor Lounge during the seismic renovation of Kerckhoff Hall. Hours are weekdays 8:30 a.m. to 5:30 p.m. A satellite Graphic Services Center is located in Lu Valle Commons (310-825-7568).

The Graphic Services Ackerman Union office also features a public fax machine and the Computer and Laser Rental Service (310-206-8454). Macintosh and IBM-compatible computers are available for hourly rental; term papers, newsletters, and flyers may be output on a Laserwriter printer. A Linotronic 500 is available for high-resolution typesetting of newsletters and brochures.

## Meeting Rooms

A variety of meeting rooms is available for use by the entire campus community. To reserve space in Ackerman Union, Kerckhoff Hall, or Lu Valle Commons, contact the Student Union Operations Office on the A Level of Ackerman Union (310-206-0836).

## Shipping

The ASUCLA Service Center (140 Kerckhoff Hall, 310-825-2423) offers shipping via UPS and Federal Express. Hours are weekdays 9 a.m. to 4:30 p.m. The center will be relocated to Wooden Center East during the seismic renovation of Kerckhoff Hall.

## Travel Service

The ASUCLA Travel Service, located on the A Level of Ackerman Union (310-825-9131), offers a wide range of domestic and international airline flights and rail tickets, land arrangements and charter packages, student tours, and other travel-related services. Students may call UCLA-FLY (310-825-2359) for reservations. Hours are weekdays 8:30 a.m. to 6 p.m., Saturday noon to 4 p.m.

# Student Activities

The opportunities to participate in extracurricular activities at UCLA are virtually unlimited. Though it is impossible to list all the activities here, the following are just a few of the many ways you can get involved in campus life and expand your horizons beyond classroom learning.

## Student Government

In addition to its **Services and Enterprises** division, which is responsible for the services described above, ASUCLA includes the **Undergraduate Students Association**, the **Graduate Students Association**, and the **Communications Board**, which publishes the *Daily Bruin* and other campus student publications. Governed by a student-majority Board of Directors, ASUCLA operates and manages Ackerman Union, Kerckhoff Hall, North Campus Student Center, and Lu Valle Commons.

Many facets of student life at UCLA are sponsored or organized in some way by student government. Getting involved in the decision-making process can be extremely rewarding and can offer avenues of expression you may not find in other aspects of your university experience.

**Undergraduate Student Government** — The Undergraduate Students Association (USA), with offices in Kerckhoff Hall (310-825-7068), is governed by the Undergraduate Students Association Council. USAC administers the association's operating budget through a network of seven student commissions (Academic Affairs, Campus Events, Community Service, Cultural Affairs, Facilities, Financial Supports, and Student Welfare).

Many **student government programs** benefit both campus and community. The Community Service Commission (310-825-2333) serves Los Angeles through more than 20 programs such as Amigos del Barrio, offering academic and emotional support for Latina/Latino students; the UCLA Prison Coalition, providing tutoring for inmates of juvenile correctional institutions; and the UCLA Special Olympics, to name just a few. Over 2,500 students offer their services on a volunteer basis.

Student government also supports approximately 20 student advocacy groups on campus, such as the African Student Union, American Indian Students Association, Asian Pacific Coalition, Gay and Lesbian Association, International Students Association, MEChA, UCLA Jewish Student Union, and the Union of Students with Disabilities.

The Campus Events Commission (310-825-1958) provides the campus with free and low-cost entertainment programming, as well as opportunities for student involvement. The commission is responsible for the Speakers and Concert Programs (see next page), the Ackerman Film Program, and Mardi Gras.

**Graduate Student Government** — The Graduate Students Association is the official organization representing the interests of UCLA graduate students in academic, administrative, campus, and statewide areas. GSA appoints or elects graduate student members to important campus organizations and committees, including the ASUCLA Board of Directors and the Student Fee Advisory Committee, as well as to departmental student organizations and committees of the Academic Senate. In addition, GSA sponsors various graduate student journals, programs, and social events, including Melnitz Movies (UCLA student film program) and publication of the GSA newsletter, *The Grad*. The GSA Office is located in 301 Kerckhoff Hall (310-206-8512; e-mail: gsa@asucla.ucla.edu).

## Clubs and Organizations

Joining a club or organization is an excellent way to make new friends and find your niche on campus. UCLA has about 700 different clubs and registered organizations — more than you will find on almost any other university campus in the country. Political, athletic, recreational, cultural, academic, and religious clubs of almost every description are represented — and if you can't find one to suit your particular interest, you can start your own.

Clubs focusing on sports and recreation are listed in the Department of Cultural and Recreational Affairs, located in the Wooden Center (310-825-3701). For a full listing of registered student organizations, contact the **Center for Student Programming (CSP)**, 161 Kerckhoff Hall (310-825-7041). This office can help you start a club or join an existing one, and serves as the official registry for all campus organizations. The center assists students with program development and fund-raising, monitors financial activities of student organizations, interprets and enforces University rules and regulations, and administers official and general purpose bulletin boards on campus. CSP is scheduled to move to Wooden Center East during 1993-94.

Groups registered through the Center for Student Programming are eligible to use the services of the **Conference and Event Management Office (CEM)** in Sunset Village (310-825-5305). CEM offers technical and logistical consulting, including cost estimates for services in support of public events. The CEM Scheduling Office reserves classrooms, outdoor areas, and many other campus public-use venues for nonacademic events (310-206-3274). CEM also specializes in large and complex meeting/conference/event activities using a variety of campus spaces and needing support from multiple on- and off-campus service agencies.

### Complaints Against Student Organizations

Complaints of misconduct against officially recognized student organizations may be made at the **Center for Student Programming**, 161 Kerckhoff Hall, or with the administrative officer, Student and Campus Life, 1104 Murphy Hall.



## Fraternities and Sororities

The 53 Greek letter social organizations and their four governing councils — Asian Greek Council, Interfraternity Council (IFC), National Pan-Hellenic Council, and Panhellenic Council — are sponsored by a component of the Center for Student Programming — **Fraternity and Sorority Relations (FSR)**, 118 Men's Gym (310-825-6322).

Greek letter social organizations registered and officially recognized by FSR are eligible to participate in programs such as the Greek Leadership Conference, Membership Recruitment, Greek Week, New Member Alcohol and Substance Education, Dating Expectations Programs, intramural tournaments, and all University-sponsored programs. Individual student members of IFC and Panhellenic Council are eligible for scholarships offered by the Intersorority Mothers' Club, Los Angeles Alumnae Panhellenic, and their own councils. The FSR staff assists organizations in campus and community programming, fund raising, membership development, training, and philanthropic activity.

FSR is also a designated campus Harassment Information Center available to all UCLA students (see "Harassment" in the Appendix for more information).

Fraternities and sororities provide the security of friendship and academic support while encouraging personal development and expansion. Members have group and individual responsibilities related to their particular interests and talents, and all take part in the group's programs and support networks. "Greeks" follow their founding principles of service, scholarship, and friendship. There is a place for anyone who will contribute to a group experience, and the cost to live in a chapter house is no more than living in a campus residence hall, although many members "live out" (not all chapters have houses). More than 4,000 UCLA students participate in "Greek life."

### Fraternities

Alpha Phi Alpha  
Alpha Sigma Phi  
Alpha Tau Omega  
Beta Theta Pi  
Chi Phi  
Delta Chi  
Delta Kappa Epsilon  
Delta Sigma Phi  
Delta Tau Delta  
Kappa Alpha Psi  
Kappa Sigma  
Lambda Chi Alpha  
Lambda Phi Epsilon  
Omega Psi Phi  
Omega Sigma Tau  
Phi Beta Sigma  
Phi Delta Theta

Phi Kappa Psi  
Phi Kappa Sigma  
Pi Kappa Alpha  
Sigma Alpha Epsilon  
Sigma Alpha Mu  
Sigma Chi  
Sigma Nu  
Sigma Phi Epsilon  
Sigma Pi  
Tau Kappa Epsilon  
Theta Chi  
Theta Delta Chi  
Theta Xi  
Triangle  
Zeta Beta Tau  
Zeta Psi

### Sororities

Alpha Chi Omega  
Alpha Delta Pi  
Alpha Epsilon Phi  
Alpha Kappa Alpha  
Alpha Phi  
Chi Alpha Delta  
Chi Omega  
Delta Delta Delta  
Delta Gamma  
Delta Sigma Theta

Gamma Phi Beta  
Kappa Alpha Theta  
Kappa Delta  
Kappa Kappa Gamma  
Lambda Delta Lambda  
Pi Beta Phi  
Sigma Gamma Rho  
Sigma Kappa  
Theta Kappa Phi  
Zeta Phi Beta

## Mardi Gras

UCLA's annual Mardi Gras is the world's largest student-operated collegiate activity. Each Spring Quarter over 5,000 Bruins from all types of campus organizations help to prepare and present this carnival. Students design and operate more than 70 booths featuring games, food, and live entertainment. There are celebrity judges, carnival rides, clowns, balloons, fireworks, and much more. Mardi Gras is open to the campus community on Friday evening; the public is invited during the day on Saturday and Sunday.

The event generates about \$50,000 annually for UCLA's official charity, UniCamp, a summer camp for underprivileged Los Angeles children. For more information, contact the Mardi Gras Committee in 129 Kerckhoff Hall (310-825-8001) or the Campus Events Commission in 300A Kerckhoff Hall (310-825-1958). The office is scheduled to move to Wooden Center East during 1993-94.

## UCLA Campus Events Speakers and Concert Programs

The Speakers Program, now over 25 years old, brings the world's foremost entertainers, politicians, and literary figures to campus. It also presents two annual awards programs — the **Jack Benny Award** for comedic excellence and the **Spencer Tracy Award** for outstanding screen performance. Past speakers have included **Johnny Carson**, **David Letterman**, **Whoopie Goldberg**, **John Cleese**, **Robin Williams**, **Jessica**



Lange, James Stewart, Spike Lee, William Hurt, Patricia Schroeder, Jesse Jackson, Matt Groening, Studs Terkel, Shimon Peres, Walter Cronkite, Dustin Hoffman, and Candice Bergen.

The Concert Program brings new and name performing artists like the Talking Heads, Guns N' Roses, 10,000 Maniacs, Public Enemy, and Hammer to UCLA for free and affordably priced concerts at noon in Westwood Plaza and at night in the Cooperage and Ackerman Grand Ballroom.

## Publications and Broadcast Media

UCLA's publications and broadcast media, operated by the ASUCLA Communications Board, provide excellent training ground for aspiring writers, journalists, photographers, and radio announcers while serving the communication needs of the campus community. The following are the major student-operated sources of information on campus:

The **Daily Bruin**, with a circulation of 22,000, is one of the largest daily newspapers in Los Angeles. As the principal outlet for campus news, the *Bruin* is published each weekday of the regular academic year (once a week during the summer) and is distributed free from kiosks around campus and in Westwood and Brentwood. Students work as reporters, editors, designers, photographers, and advertising sales representatives; new staff members are always welcome. *Bruin* offices are located in the Alumni Lounge (227 Kerckhoff Hall, 310-825-9898).

Seven newsmagazines reflecting the diversity of the campus community are published twice each term. **Al-Talib** is a publication devoted to Muslim issues; **Ha'Am** deals with Jewish issues; **La Gente** treats Chicano, Latino, and Native American issues; **Nommo** explores African issues; **Pacific Ties** is devoted to Asian issues; **TenPercent** covers gay, lesbian, and bisexual issues; and **Together** reports on women's issues. Each includes news and features on political and cultural affairs both on and off campus. Prospective staffers are welcome. The offices of these newsmagazines are located in 210 Kerckhoff Hall.

The UCLA yearbook, **Bruin Life**, is one of the largest student publication efforts on campus. Available each spring, it contains photographs and information on undergraduate students, graduating seniors, athletic teams, fraternities and sororities, and campus activities. A separate publication, the **Freshman Record**, is produced for new UCLA students. If you would like to participate, contact the yearbook staff in 212K Kerckhoff Hall (310-825-2640).

Like many other large universities, UCLA has its own radio station. **KLA Radio** provides music, news, public service programming, and sports coverage during the academic year. The carrier current signal is sent to the residence halls and parts of Ackerman Union and Kerckhoff Hall on 530 AM and to many parts of the Los Angeles area on 99.9 Century

Cable FM. The studios are located at the rear of the Grand Ballroom in 2400A Ackerman Union (310-825-9107; request line: 310-825-9999). All positions, including on-air, news staff, and advertising representatives, are open to students.

## The Performing Arts

UCLA offers a rich variety of concerts, art exhibits, dance recitals, and theater productions as an integral part of University life. A full calendar of exceptional programs by the Music, Ethnomusicology and Systematic Musicology, and Dance Departments of the School of the Arts and the Theater and Film and Television Departments of the School of Theater, Film, and Television provides opportunities for student involvement and personal growth.

The **Music Department** offers more than 15 performance organizations. Instrumentalists are invited to play with one of seven different bands and orchestras. Campus choral organizations include a Concert Choir, Chamber Singers, Women's Chorus, Men's Glee Club, and the Collegiate Chorus which, with 120 members, is the largest of the groups.

The **Ethnomusicology and Systematic Musicology Department** provides students with the opportunity to perform in various non-Western and ethnic groups.

The **Dance Department** presents afternoon and evening modern dance concerts and demonstrations both on and off campus, and folk and ethnic performing groups meet regularly. Dance students have the opportunity to design and choreograph as well as perform.

Each year the **Theater Department** presents a series of major productions to the general public, and the **Film and Television Department** produces about 300 student-directed films in addition to hundreds of television programs. Professionals appearing on campus frequently visit classes to share their skills, and many have established awards and scholarships in the performing arts at UCLA.

## Be a Spectator

Since its founding in 1936, the **UCLA Center for the Performing Arts** has served as the premier West Coast showcase for world-class performers and innovative new work in dance, music, theater, and performance art. The center stages more than 250 public concerts and events each year, often sponsoring debut performances of new works by major artists. Through the center, UCLA's Royce Hall hosts a varied and active performance program, ranging from regular concerts by the Los Angeles Chamber Orchestra to special appearances by Luciano Pavarotti, Marcel Marceau, Isaac Stern, performance artist Karen Finley, Kathleen Battle, Bella Lewitzky Dance, and Branford Marsalis. Discount tickets for students, faculty, and staff are available to all events.





## Sports and Athletics

Athletics play a major role in the University's mission to provide a well-rounded education both in and out of the classroom. UCLA continues to live up to its reputation as a national leader in intercollegiate sports. In 1992-93 the UCLA men's athletic program placed fifth in the *USA Today* national all-around excellence competition and has won the award 11 times, including five of the last eight years. The women's program placed second in the 1992-93 poll conducted by *USA Today* and has won that award four of the last six years. UCLA is the only university in the country to win five National Collegiate Athletic Association (NCAA) men's and women's championships in a single year (1981-82).

**MEN'S INTERCOLLEGIATE SPORTS** — UCLA is a member of the Pacific-10 Conference, which includes Arizona State University; University of Arizona; University of California, Berkeley; Stanford University; University of Southern California; University of Oregon; Oregon State University; Washington State University; and the University of Washington. UCLA teams have won an overall total of 56 NCAA men's championships — second highest in the nation — including 15 in tennis, 14 in volleyball, 10 in basketball under the legendary John Wooden, and eight in track and field. In addition, the soccer team won the 1990 NCAA title. You can participate on the varsity level in football, basketball, track, baseball, tennis, volleyball, gymnastics, swimming, water polo, golf, soccer, and cross-country. For more information, contact the Men's Athletic Office at (310) 825-8699.

**WOMEN'S INTERCOLLEGIATE SPORTS** — With ten different varsity sports, the UCLA women's program is one of the most extensive in the country, and UCLA has played an important role in establishing women's sports as part of the NCAA. Women's teams have won an overall total of 13 NCAA titles — second highest in the nation — including the 1981-82, 1983-84, 1984-85, 1987-88, 1988-89, 1989-90, and 1991-92 NCAA championships in softball, the 1981-82 and 1982-83 track and field

crowns, the 1984, 1990, and 1991 volleyball titles, and the 1991 golf title. Other nationally ranked teams are those in basketball, swimming, tennis, cross-country, soccer, and gymnastics. Athletic grants-in-aid are available on a selective basis in most sports. For more information, contact the Women's Athletic Office at (310) 825-8699.

**INTERCOLLEGIATE ATHLETIC FACILITIES** — UCLA's major indoor arena is the famed **Pauley Pavilion**, which seats 12,543 for UCLA basketball, volleyball, and gymnastics events. It was the site of the 1984 Summer Olympics gymnastics competition. Immediately adjacent, **Drake Stadium** is the home of UCLA track and field competitions and site of many outdoor events, including the U.S. Olympic Festival '91. The **Los Angeles Tennis Center**, a 5,800-seat outdoor tennis stadium and clubhouse, was the site of the 1984 Olympic tennis competition. The **Morgan Intercollegiate Athletics Center** houses the UCLA Athletic Hall of Fame. Off-campus facilities include **Robinson Stadium** for varsity baseball and the renowned **Rose Bowl** in Pasadena, home of the UCLA football team.

### Campus Recreation

UCLA offers a wide variety of recreational opportunities to meet the needs of the campus community. The **Department of Cultural and Recreational Affairs (CRA)**, 2131 Wooden Center (310-825-3701), serves as the administrative center for the coordination of programming, facilities, and equipment and supervision of campus recreational activities and services.

**INTRAMURAL/CLUB SPORTS** — The **Intramural Sports Program** offers over 40 activities, ranging from basketball and badminton to volleyball and water polo, in men's, women's, and coed competition with team and individual play; many are divided by skill levels so participants of any ability level can get involved. The **Club Sports Program** offers you the chance to organize, coach, or participate in sports that fall beyond the scope of intramurals but are not offered at the varsity level.

Annually over 18 club teams participate in a competitive schedule of league and tournament play with other college, university, and local area teams. Recognized teams exist in ice hockey, men's and women's rugby and lacrosse, cycling, rowing, women's soccer, snow skiing, and surfing.

**RECREATION CLUBS** — Students with special interests in activities that are primarily instructional or social in nature have the opportunity to pursue their interests through clubs such as amateur radio, dance, fishing, snow skiing, and a variety of martial arts.

**RECREATION CLASS PROGRAM** — A broad range of noncredit recreation classes is available in aquatics, dance, fine arts, outdoor studies, physical fitness, tennis, and sports skills. Most classes are designed for beginning and intermediate skill levels. You can also participate in cultural events through art exhibitions, the poetry reading program, museum tours, and theater in Los Angeles outings.

**BRUIN KIDS** — Summer and winter day camps, recreation classes, enrichment programs, and year-round weekend activities are offered for children of the UCLA community aged four to 16. Employment opportunities for UCLA students and a chance to work with children in a learning environment are provided through the Bruin Kids Program.

**RECREATION FACILITIES/INFORMAL RECREATION** — A popular attraction of CRA is the opportunity for independent recreation and exercise. UCLA students with appropriate identification have several major facilities in which to practice and play. The **Wooden Recreation and Sports Center** is a comprehensive student activities building with multiple gymnasias, 10 racquetball/handball courts, two squash courts, a weight training facility, exercise/dance and martial arts rooms, and a games lounge. The **Sunset Canyon Recreation Center** offers year-round activities in an outdoor park setting and features a 50-meter swimming pool, 25-yard family pool, picnic/barbecue areas, multipurpose play fields, an outdoor amphitheater, 10 lighted tennis courts, and various meeting rooms and lounges. The **UCLA Aquatic Center** in Marina del Rey offers sailing, windsurfing, and rowing classes and activities, as well as the opportunity to sail or row on your own. The competitive sailing and rowing club teams are administered through the center. Students also have the use of Pauley Pavilion, Drake Stadium, Sycamore Tennis Courts, Los Angeles Tennis Center, Intramural Fields, Men's Gym, and Dance Building for recreational sports and activities.



# Student Services

UCLA students enjoy an extremely broad range of benefits and support services which enrich their college careers and help them attain their academic and career goals.

## Academic Counseling

Many sources of academic counseling are available. Faculty advisers and counselors in each college and school help students with major selection, program planning, academic difficulties, degree requirements, and petitions for exceptions to these requirements.

Advisers in each major department counsel undergraduates concerning majors offered and their requirements, and possible career and graduate school options (see "Academic Resources and Assistance" in Chapter 2 of this catalog). In addition, special graduate advisers are available in each department to assist prospective and currently enrolled graduate students.

## Placement and Career Planning Center

The Placement and Career Planning Center (PCPC) offers career planning and employment assistance free to all UC students. Services are located in the PCPC Building (310-825-2981) and in three satellite locations: EXPO Center in A213 Ackerman Union (specializing in local, national, and international internships, 310-825-0831), Career Management Services Office in 1349 AGSM (services for M.B.A. students, 310-825-3325), and Engineering and Science Placement and Career Planning Office in 5289 Boelter Hall (specializing in engineering and the physical sciences, 310-825-4606).

**Career Planning and Exploration** — Career advisers and counselors provide assistance in selecting your major, setting realistic career goals, investigating career options, evaluating graduate and professional school programs, and developing skills to conduct a successful job search. Information on local, national, and international internship opportunities and cooperative education programs can assist you in exploring different career possibilities, making important professional contacts, and obtaining valuable on-the-job experience. The Career Resources Library offers a collection of over 1,000 career-related books and directories, videos, periodicals, and other materials. In addition, PCPC offers workshops, seminars, and group meetings on a variety of career-related topics; many are repeated several times each term.

**Employment Assistance** — If you need extra money to finance your college degree, you will find a large volume of part-time, temporary, and seasonal employment leads at PCPC. Information on room and board opportunities in exchange for work also is available. Students and recent graduates looking for full-time, entry-level career positions may refer to job boards which list hundreds of current professional, managerial, and technical openings in numerous career fields. Seniors and graduate students may participate in on-campus interviews for positions in corporations, government, not-for-profit organizations, elementary and secondary schools, community colleges, and four-year academic institutions.

## Student Health Service

The Student Health Service (SHS) is an outpatient clinic designed especially for UCLA students. Because it is supported by your registration fees, your current Registration Card and a photo I.D. are required for service. Most services are prepaid by your registration fees, and you may be seen by appointment or on a walk-in basis. Call (310) 825-4073 for the

most up-to-date fee information. Core or prepaid services include visits, most procedures, X rays, and some laboratory procedures. Noncore or fee services, such as pharmaceuticals, injections, orthopedic devices, and some laboratory procedures, are less costly than elsewhere. If you withdraw during a school term, all SHS services will continue to be available on a fee basis for the remainder of that term, effective from your date of withdrawal.

The cost of services received outside of SHS (e.g., the Emergency Room) is *your* financial responsibility. You are strongly encouraged to purchase supplemental medical insurance either through the UCLA-sponsored Medical Insurance Plan (see below) or other plans that provide adequate coverage. For more information on SHS, call (310) 825-4073.

**Location and Hours** — General and emergency SHS care is available in A2-130 Center for the Health Sciences. Office hours weekdays are 8 a.m. to 5 p.m. except Tuesday, when service begins at 9 a.m. For emergency care when SHS is closed, you may obtain treatment at the UCLA Medical Center Emergency Room or UCLA Family Practice on a fee-for-service basis.

**Primary Care Clinic** provides outpatient diagnoses and treatment for most health care needs of both men and women. Care is provided by board certified physicians and nurse practitioners. Though complete physicals are available for a fee, a prepaid "Well Exam" is available if you have general health questions or concerns. You are encouraged to select a clinician who will provide ongoing health care. Call (310) 825-2463 to schedule an appointment.

**Specialty Clinics** provide specialized care when you are referred by the Primary Care Clinic. Services include dermatology, orthopedics, surgery, gynecology, internal medicine, allergy, ENT (ear, nose, and throat), ophthalmology, urology, and neurology. Health clearances, immunizations, and travel shots are available for a moderate fee. Call (310) 825-0861.

**Women's Health Service** offers comprehensive health care and counseling. Services include routine gynecological examinations, evaluation of gynecologic problems, abnormal pap smear evaluation and treatment, contraception, and pregnancy testing. Counseling for relationships and sexual concerns is also available. Call (310) 825-0854 for appointments and (310) 825-7000 to speak to clinicians.

**Men's Health Clinic** treats male genital and urinary problems, both sexual and nonsexual in nature. The clinic also provides sexual counseling for UCLA's male students. Call (310) 825-0861.

**Dental Care** arrangements are available. Call (310) 825-4073 for further information.

**Health Education** offers many types of services and programs that will interest, inform, and help you to lead a healthier life-style. Outreach programs, such as the Peer Health Counselor and Student Health Advocate Programs, provide peer care and educational counseling for health concerns. The programs allow students to be involved in the planning and delivery of many aspects of health care. Call (310) 825-4730.

**Supplemental Medical Insurance** — UCLA offers a student Medical Insurance Plan (MIP) which is available as a supplement to the services offered in SHS. MIP provides benefits for certain major medical expenses not covered by SHS, such as hospitalization, surgery, and emergency room costs.

All international students (graduate and undergraduate) on nonimmigrant visas and all graduate students *must maintain adequate medical insurance coverage* during all periods of enrollment at UCLA. MIP fulfills the medical insurance requirement. For graduate students the MIP fee is included each term in the fee assessment total on the UCLA Fee Statement portion of the Registration Form. For undergraduates the MIP fee appears as a voluntary option to be added to the fee assessment total on the Registration Form each term. This is the only method by which MIP can be purchased.

Graduate and international students who are insured under *adequate* private medical insurance may waive out of MIP. See "Mandatory Medical Insurance Requirement" in the "Registration and Enrollment" sections of Chapters 2 and 3 for a description of what constitutes adequate private medical insurance and instructions for waiving out of MIP. For further information on medical insurance, call the SHS Insurance Office at (310) 825-1856.

## Student Psychological Services

Student Psychological Services (SPS) offers short-term personal counsel and psychotherapy at two locations. The Mid-Campus Office is located in 4223 Math Sciences (310-825-0768, 825-4207); the South Campus Office is in A3-062 CHS (310-825-7985).

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

The service is confidential and free to regularly enrolled students. Students are seen individually or may choose from a number of groups offered each term. Appointments are made on weekdays between 8 a.m. and 5 p.m. Emergency counseling is also available.

SPS is also a designated Sexual Harassment Information Center, as well as a campus Harassment Information Center, available to all UCLA students (see "Harassment" in the Appendix for more information).

## Helpline

UCLA Peer Helpline (310-825-HELP) is a crisis intervention and referral hot line staffed by UCLA students and staff members. You can call and talk to a trained peer counselor about school stress, relationship problems, loneliness, depression, drug problems, suicide, or anything else that is on your mind. Hours are weekdays 5 p.m. to midnight, Saturday and Sunday 8 p.m. to midnight. For more information, contact Clive D. Kennedy, Student Psychological Services, 4223 Math Sciences (310-825-4207).

## Office of the Dean of Students

The Office of the Dean of Students, located in 1206 Murphy Hall (310-825-3871), exists to help you, either directly or by referral, with whatever needs you might have. Direct services include general counseling; sending emergency messages to students; and assisting in understanding University policies and procedures, including grievance procedures regarding student records, discrimination, and student debts.

In addition, the office publishes "Official Notices" in the *Daily Bruin* at various times during the year. Such notices are important, and *all students are held responsible* for the information in them.

The Office of the Dean of Students also plays a role in administering campus discipline and applying the standards of citizenship which you are expected to follow at UCLA. Those standards involve complying with the policies and regulations governing this campus and being aware that violation of those policies or regulations can result in disciplinary action. See "Student Conduct: Violation of University Policies" in the Appendix for more information.

## Campus Ombuds Office

The ombudsperson is responsible for listening and responding to grievances or concerns from any member of the campus community (i.e., students, staff, faculty, administrators). Acting impartially, the ombudsperson may investigate unresolved grievances or facilitate the resolution of problems for which there are no established guidelines and may also, where possible and when requested by the grievant, assist in resolving an issue through mediation (including sexual harassment cases). The ombudsperson is empowered to recommend changes to the University Policies Commission and/or to the chancellor regarding University policies and procedures. The office is located in 1172 PCPC Building (310-825-7627); hours are weekdays 8 a.m. to 5 p.m.

The office is also a designated Sexual Harassment Information Center for students, faculty, and staff, as well as a campus Harassment Information Center available to all UCLA students (see "Harassment" in the Appendix for more information).

Sponsored by the Campus Ombuds Office, the **Campus Mediation Service (CMS)** is a group of volunteers from the campus community who assist in the mediation and resolution of disputes between landlords and tenants, roommates, campus groups, and/or individuals.

## Student Legal Services

If you are a currently registered and enrolled student with a legal problem, you can get assistance free of charge from attorneys or law students under direct supervision of attorneys. They will help you solve legal problems, including those related to landlord/tenant relations, domestic relations, accident and injury problems, criminal matters, and contract and debt problems. Assistance is available by appointment only from 9 a.m. to 5 p.m. weekdays in 70 Dodd Hall (310-825-9894).

## Central Ticket Office

Tickets for all UCLA events are available at the Central Ticket Office (CTO) in the West Alumni Center (310-825-2101).

CTO also offers student *discount* tickets to campus athletic and cultural events and local motion picture theaters (current Registration and UCLA Student I.D. Cards must be presented at the time of purchase). You may also purchase tickets to off-campus events through Ticketmaster, as well as student discount tickets for RTD buses and tokens for the Santa Monica and Culver City bus systems.

## Services for International Students

The **Office of International Students and Scholars (OISS)** and the **International Student Center** provide services and programs for UCLA's international community, particularly for 2,000 nonimmigrant students. A comprehensive orientation program for these students assists them in achieving their academic objectives. Programs throughout the year allow them to share their viewpoints with American students and the community.

The OISS staff, located in 105 Men's Gym (310-825-1681), includes professional and peer counselors specially prepared to assist you with questions about immigration, employment, government regulations, financial aid, academic and administrative procedures, cultural adjustment, and personal matters. OISS is also a designated Sexual Harassment Information Center for international students, as well as a campus Harassment Information Center available to all UCLA students (see "Harassment" in the Appendix for more information).

OISS also provides visa assistance for faculty, researchers, and post-doctoral scholars.

The International Student Center, 1023 Hilgard Avenue (310-825-3384), focuses on student/community relations and assists with language, housing, and other concerns in addition to sponsoring cultural, educational, and social programs for U.S. and international students and members of the local community. Both units are interested in the combination of interethnic/international programs.

## Services for Students with Disabilities

The **Office for Students with Disabilities (OSD)**, A255 Murphy Hall (Voice 310-825-1501 or TDD 310-206-6083), provides a wide range of academic support services to students with permanent or temporary disabilities in compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. Free support services include readers, note takers or purchased ASUCLA Lecture Notes, sign language interpreters, Learning Disabilities Program, special parking, registration assistance, fee deferments authorized by the California Department of Rehabilitation, on-campus transportation, campus orientation and accessibility, proctor and test-taking arrangements, tutorial referral, housing assistance, support groups, workshops, special materials, adaptive equipment, and referral to the Disabilities and Computing Program. Accommodations are varied and specifically designed to meet the disability-related needs of each student. All contact and assistance are handled confidentially.

The **Disabilities and Computing Program (DCP)** offers consulting and training on adapted computer equipment to assist students with disabilities in their academic work. Special equipment includes reading machines, voice-controlled computers, outlining software, large print monitors, and more. For further information, call Voice (310) 206-7133 or TDD (310) 206-5155.

## Veterans' and Social Security Services

Academic Record Services, 1134 Murphy Hall, provides information for veterans and eligible dependents about V.A. educational benefits, tutorial assistance, the work-study program, and emergency loans; issues fee waivers to dependents of California veterans who are deceased or disabled because of service-connected injuries and who meet the income restrictions in Education Code Section 10652; and certifies student status for recipients of Social Security benefits.



## Women's Resource Center

The Women's Resource Center (WRC), located in 2 Dodd Hall (310-825-3945), offers services to all UCLA students, with special focus on women's needs.

The center presents workshops and support groups on many topics, including child care, self-defense, assertiveness training, rape prevention and education, career development, single parenting, health, returning to school, and personal relationships. It also offers referrals for medical, legal, career planning, personal counseling, and other services both on and off campus. In addition, rape services consultants (RSCs) — individuals who provide information, support, and resources for UCLA students who have been raped or sexually assaulted — can discuss options and alternatives, help identify and assist in contacting the most appropriate support services, and answer any questions that may arise. The WRC is also a designated Sexual Harassment Information Center, as well as a campus Harassment Information Center available to all UCLA students (see "Harassment" in the Appendix for more information).

A library includes specialized publications on women's issues. Volunteer opportunities are offered in areas such as creative writing, legislative research, graphic arts, and publicity. The WRC, committed to improving the status of women on campus, works with other campus agencies to help women reach their full potential.

## Child Care Services

The **Child Care Center** provides full- and part-time care for children aged two months to five years. Fees range from \$250 to \$630 per month depending on the age of the child and the schedule selected. The center is located in the northwest corner of campus on Sunset Boulevard between Veteran Avenue and Bellagio Drive, with the entrance on Bellagio Drive. A satellite day-care center for children aged two to five years is located in the Colina Glen faculty housing area. Fees range from \$240 to \$525 depending on the schedule; priority is given to Colina Glen residents. Call (310) 825-5086 for more information.

The **Outreach Program** helps parents make off-campus child care arrangements. The outreach coordinator meets parents each Monday from noon to 1 p.m. in 2 Dodd Hall. For more information, call (310) 825-8474.

The **University Parents Nursery School** is a multicultural cooperative school for two- to five-year-old children of UCLA students, faculty, and staff; priority is given to students living in Family Student Housing. Experienced teachers, assisted by co-oping parents, provide a gradual transition from the home to the school environment. Hours are weekdays 7:30 a.m. to 5:30 p.m. Part-time spaces are available (the morning program ends at 12:30 p.m.). The nursery school is located in the UCLA Family Student Housing Community Center, 3327 South Sepulveda Boulevard (310-397-2735).

## Safety and Security

**Emergency (Police, Fire, or Medical)** — Dial **911** from any campus phone (do not dial an additional 9 to establish an outside line). For nonemergency information, contact the UCLA Police Department at 601 Westwood Plaza (310-825-1491).

**Campus Escort Service** — The Department of Community Safety provides a free escort service every day of the year from dusk to 1 a.m. Uniformed community service officers (CSOs) — specially trained UCLA students — are available to walk students, staff, faculty, and visitors between campus buildings and local living areas or Westwood Village. To obtain an escort, call (310) 825-1493 about 20 minutes before you need one.

**Evening Van Service** — The free service provides a safe and convenient mode of transportation around campus at night. Seven vans driven by CSOs operate Monday through Thursday from 6 p.m. to midnight and provide transportation between Ackerman Union, apartments on the

west side of campus, Lot 32, the campus libraries, and the residence halls. For further information or a free brochure, call (310) 825-9800.

**UCLA Rape Prevention and Education Services** are cosponsored by the Women's Resource Center and the Department of Community Safety. Services include workshops, self-defense classes, intake counseling, and referrals to offer practical safety suggestions, increase physical and psychological preparedness, and heighten awareness of the complex issues of rape and sexual assault. For more information, call (310) 206-8240 or the UCLA Police Department's Crime Prevention Unit at (310) 825-7661.

**CPR and Basic Emergency Care Courses** — The Center for Prehospital Care offers medical education programs in basic emergency care and American Heart Association cardiopulmonary resuscitation (CPR) which can be organized most days and times. For more information or to schedule a course, call (310) 206-0176.

The **Office of Environment, Health, and Safety (EH&S)** provides for the health and safety of all UCLA faculty, staff, students, and visitors and ensures that UCLA operations do not have an adverse impact on the environment. In addition, EH&S promotes the University's compliance with applicable health, safety, and environmental regulations. For further information, call (310) 206-6413.

### Important Phone Numbers

UCLA Police Department (24 hours) . . . . .	(310) 825-1491
Police, Fire, or Medical Emergency . . . . .	911
UCLA Emergency Medical Center (24 hours) . . . . .	(310) 825-2111
Campus Escort Service (dusk to 1 a.m.) . . . . .	(310) 825-1493
Helpline (weekdays 5 p.m. to midnight, weekends 8 p.m. to midnight) . . . . .	(310) 825-HELP

## UCLA Alumni Association

For nearly 60 years, the UCLA Alumni Association has offered graduates the opportunity to stay involved with their university. Nearly 55,000 graduates are members, making the association one of the largest alumni groups in the nation. Membership is open to Bruin parents and friends as well as graduates.

The Alumni Association offers a number of services and sponsors various programs for members and for current and future UCLA students. From world travel to UCLA Extension classes, members are entitled to a number of special privileges. Thousands of graduates take advantage of the association's various career services each year. Programs such as ProNet, a confidential résumé data base, give members the perfect alternative to scanning classified ads. Through the Alumni Travel Program, members can explore the world or rediscover America with fellow Bruin alumni and friends. Member benefits also include discounts on UCLA Extension classes, group insurance opportunities, and discounts on athletic and cultural events on campus.

In addition to member services, the association sponsors many student service programs. It encourages student achievement and involvement, and each year awards \$400,000 in student scholarships. Student Alumni Association (SAA) members plan and produce UCLA's fall Homecoming festivities and Spring Sing, as well as the annual Dinners for Twelve Strangers, which bring together students, faculty, staff, and alumni. Through the SAA Career Network, students have the opportunity to meet alumni working in their specific fields of interest. SAA membership is free and open to all students.

The association also sponsors the Governmental Relations Program, Advisory and Scholarship Program, and nearly 130 regional, professional, and support organizations. It is located in the West Alumni Center, 325 Westwood Plaza (310-825-ALUM; 800-825-ALUM outside the 213, 310, and 818 area codes).

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# Undergraduate Study

# 2





# Undergraduate Admission

## Information:

Undergraduate Admissions and Relations with Schools (UARS)  
1147 Murphy Hall  
(310) 825-3101

The Office of Undergraduate Admissions and Relations with Schools (UARS) invites you to visit UCLA to discuss your prospects as a student and to experience the campus firsthand. The UARS Office offers student-guided individual and group tours of the campus at 10:15 a.m. and 2:15 p.m. daily during the academic year; reservations are required. Call (310) 825-8764 for tour reservations; (310) 825-3101 for general UCLA admission information.

## Preparing for University Work

A carefully planned program of high school courses best prepares you for University work. It can give you a definite edge in your undergraduate studies and a head start in your selected field. Most important, if you master certain basic skills in high school, you increase the probability of your success at the University.

As a prospective UCLA freshman, you should give priority to completing the high school courses required for admission — the academic pattern of courses outlined later in this chapter. In addition, you should give careful thought to the general field of study, if not the specific major, you want to pursue. If you can make this decision early, you can take additional high school courses related to your field.

You should understand that the academic requirements for admission are **minimum** entrance standards. Students are selected from a large number of highly competitive applicants. Most of these applicants will have exceeded the minimum requirements; thus selection is based on your demonstrated overall preparation. Those applicants with the strongest preparation are offered admission.

You must begin preparation for college at least by the ninth grade in order to allow you to progress through more than just the minimum required courses. If possible, you should begin academic coursework in mathematics and foreign language in the seventh and/or eighth grades, as this allows you to complete five or six years of college preparatory work. With the strength of solid preparation, students applying to UCLA will be in a competitive position for admission.

## Applying for Admission

The first step in applying for admission is to obtain the *UC Application for Undergraduate Admission and Scholarships* containing all necessary forms and instructions from your California high school or community college counselor or from any University of California Undergraduate Admissions Office. One application is used to apply to all UC campuses. You apply to one UC campus for the basic \$40 application fee; for each additional campus you select, you must pay an additional \$40 fee.

Complete the application, taking care to list your desired major and the correct major code for the campus(es) to which you are applying. Mail the completed application and the nonrefundable application fee in the self-addressed envelope included in the application packet.

If you are in high school when you apply (freshman applicant), your application information is used by UARS to make preliminary admission decisions. **Do not** send your sixth and/or seventh semester high school transcripts. Once admitted, you must submit a final transcript, including a statement of graduation or proficiency, which will be used to verify your application information. You must submit official results of the Scholastic Aptitude Test (SAT) or American College Test (ACT) and three achievement tests; request that test results be sent directly to UCLA when you take each test. You should take these tests by the December test date, as they are part of the review process for admission.

If you have attended or are attending another college when you apply (transfer applicant), your application information is used by UARS to make preliminary admission decisions. Once admitted, you must submit official transcripts from all colleges and universities attended (high school transcripts may also be required), which will be used to verify your application information. Transcripts and other documents cannot be returned or forwarded to other institutions.

## When to Apply

### The filing periods for applications are as follows:

#### Winter Quarter 1994:

Closed to new applicants

#### Spring Quarter 1994:

**File October 1-31, 1993** (If open to new applicants, junior-level applicants only)

#### Fall Quarter 1994:

**File November 1-30, 1993** (Freshmen and transfers)

(Applications for admission to Fall Quarter 1993 were accepted only during November 1992.)

All majors are open for Fall Quarter. For Spring Quarter all majors in the College of Letters and Science, except communication studies and world arts and cultures, are open, while majors in the Schools of Engineering and Applied Science, Nursing, Arts, and Theater, Film, and Television are closed.

## Notification of Admission

You will be mailed a notice from the UC Undergraduate Application Processing Service, which you should keep, acknowledging receipt of your application. Later, you will receive a letter explaining your admission status. The length of time before admission notification varies depending on how complete your application is and how quickly your records are received. In general, Fall Quarter applicants are notified beginning March 1.

If you are accepted for admission, you will be asked to sign and return a Statement of Intent to Register and a Statement of Legal Residence. A nonrefundable \$100 deposit, also required at this time, will be applied to your University registration fee if you register in the term to which you are admitted.

## Entrance Requirements

All campuses of the University of California have the same minimum freshman admission requirements. The requirements are based on two principles: (1) the best indicator of success at the University is a record of high grades in previous schoolwork and (2) the completion of certain academic courses in high school prepares you to begin University work and choose a general field of study.

Fulfilling the minimum admission requirements, however, does not necessarily assure admission to UCLA. The selection of applicants is based on demonstrated high scholarship in preparatory work, which often goes well beyond the minimum eligibility requirements. UCLA offers admission to those students with the best overall academic preparation.

In addition to the primary criteria for admission selection, other elements are considered to ensure a diverse student body which serves the interests of California. If you present evidence of educational and economic disadvantage or a disability, that will be taken into account. If you belong to an ethnic group which has low UC eligibility rates and historically low participation in higher education, that will also be taken into account. California residency is another factor. While these elements are given consideration, academic performance remains the key factor for admission to UCLA.

### Admission as a Freshman

You are considered a freshman applicant if you have not enrolled in a regular session of any college-level institution since graduation from high school (except for summer session immediately following high school graduation). To qualify for admission as a freshman, you must meet three major requirements: the **Subject Requirement**, the **Scholastic Requirement**, and the **Examination Requirement**. These are the **minimum** requirements for admission to the University; meeting them does not automatically assure admission to UCLA.



### Subject Requirement

Outlined below are the high school academic courses required for admission to the University of California. Each course must be completed with at least a grade of C. The requirement consists of 15 year-long courses, seven of which must be taken during your last two years in high school. These are the **minimum** courses required for admission; you are encouraged to exceed these requirements whenever possible.

(1) **History/Social Science** — Two years of history/social science, including one year of U.S. history (or one-half year of U.S. history and one-half year of civics or American government) and one year of world history, cultures, and geography.

(2) **English** — Four years of university preparatory courses in English composition and/or literature which include frequent and regular writing, with no more than one year accepted from the ninth grade.

(3) **Mathematics** — Three years of university preparatory courses in elementary algebra, geometry, and advanced algebra (four years are recommended, including trigonometry and calculus).

(4) **Laboratory Science** — Two years of laboratory science (three years are recommended) which provide fundamental knowledge in at least two of these areas — biology, chemistry, and physics, with no more than one year accepted from the ninth grade.

(5) **Foreign Language** — Two years of the same language, other than English (three to four years are recommended). Courses should emphasize speaking and understanding and should include grammar, vocabulary, reading, and composition.

(6) **College Preparatory Electives** — Two units, in addition to those required above, to be selected from at least two of the following subject areas: history, English, advanced mathematics, laboratory science, foreign language, social sciences, and visual and performing arts. In general, elective courses should involve considerable reading and should develop your analytical and reasoning ability and skill with written and oral exposition.

### Scholastic Requirement

Eligibility for admission to the University of California is based on a combination of your grade-point average (GPA) in the academic subject requirements and your American College Test (ACT) or Scholastic Aptitude Test (SAT) scores. For detailed scholarship information, see the UC publication *Introducing the University* or contact Undergraduate Admissions and Relations with Schools (UARS).

### Examination Requirement

All freshman applicants must submit scores from the following tests:

- (1) One Aptitude Test:
  - (a) The American College Test (ACT), composite score OR
  - (b) The Scholastic Aptitude Test (SAT), total score.
- (2) Three College Board Achievement Tests (ACH) which must include:
  - (a) English composition AND
  - (b) Mathematics, level 1 or 2, AND
  - (c) Either English literature, foreign language, science, or social science.

You should take these tests by the December test date, as they are part of the review process. Request that test results be sent directly to UCLA when you take each test.

### Admission Selection

Many elements are considered in the selection process, but the primary ones are (1) high school grade-point average, (2) academic preparation — quality, level, and content of coursework, (3) number of and performance in honors and advanced placement (AP) courses, (4) scores received on the standardized college tests (Scholastic Aptitude Test or American College Test and achievement tests), and (5) depth and quality of senior-year coursework.

You should take as many honors and advanced placement courses as possible and should try to exceed the minimum academic subject requirements in all subjects, particularly mathematics, laboratory sciences, and foreign languages. High test scores are necessary in conjunction with strong performance in classes and a consistent pattern of academic courses. Overall performance must be well above average.

For detailed information on admission requirements for freshman students, see the UC publication *Introducing the University* or contact UARS.

### Admission as a Transfer Student

You are considered a transfer applicant if you have been a registered student (1) at another college or university or (2) in college-level extension courses. (This does not include attending a summer session immediately following high school graduation.) You **may not disregard** your

college record and apply for admission as a freshman. Priority is given to junior-level applicants. If you wish to transfer to UCLA, you should follow these general guidelines:

(1) See your college counselor, who can help you identify the courses you should take to prepare for your intended major, and make certain the courses you are currently taking are transferable.

(2) Take as many English and mathematics courses as possible. UCLA's academic program is rigorous and requires a strong background in both critical and quantitative skills. English and mathematics are the most important subjects you can take.

(3) Begin to satisfy the Intersegmental General Education Transfer Curriculum or general education requirements and fulfill prerequisites for your intended major. Because a sound liberal arts education encompasses more than knowledge of one field, the College of Letters and Science and most schools at UCLA require that students take coursework in areas outside their major. Before transferring to UCLA, you should take courses to satisfy these general education requirements as well as fulfill some of the required "prerequisite" courses for your major.

For more detailed information on admission requirements for transfer students, see the *UC Application for Undergraduate Admission and Scholarships* and the *UC Answers for Transfers* booklet or contact UARS.

### Intercampus Transfers

Undergraduate students registered in a regular session at any campus of the University (or those previously registered who have not since registered at any other school) may apply for transfer to another campus of the University. Obtain the *UC Application for Undergraduate Admission and Scholarships* and submit the required application fees with the application form. The filing periods are the same as those for new applicants (see "When to Apply" at the beginning of this chapter). If you have attended another UC campus and wish to be considered for admission to UCLA, you must have been in good standing when you left that campus. Intercampus transfers are not automatic; you must compete with all other applicants.

### Senior-Level Applicants

Students attaining senior standing are not generally admitted by the University.

### Second Bachelor's Degree Applicants

By policy, second bachelor's degrees are not generally granted by the University, except in the School of Nursing.

### Transfer Credit and Credit by Examination

The University gives unit credit to transfer students for certain courses completed at other accredited colleges and universities. To be accepted for credit, the courses must be comparable to those offered at the University, as determined by the Office of Undergraduate Admissions and Relations with Schools (UARS). All courses which meet the criteria are used in determining your eligibility for admission. (To convert semester units into quarter units, multiply the semester units by 1.5 — e.g., 12 semester units  $\times$  1.5 = 18 quarter units.)

College credit for examinations given by national testing services is generally not allowed, except for the Advanced Placement examinations given by the College Board. Contact UARS for more information.

### Applicants from Other Countries

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

Your application for admission, copies of official certificates, and detailed records of all secondary schools attended should be submitted **as early**

**as possible after the filing period opens** (see "When to Apply" at the beginning of this chapter). This will allow time for the necessary correspondence and, if you are admitted, to obtain your passport visa.

Students whose native language is not English must have sufficient command of English to benefit from instruction at UCLA. To demonstrate that command, you are required to take the UCLA English as a Second Language Placement Examination (ESLPE). Depending on your ESLPE results, you may have to complete one or more English as a second language courses. In addition, you are advised to take the Test of English as a Foreign Language (TOEFL) as a preliminary means of testing your ability. Make arrangements for this test by writing to the Educational Testing Service, 1947 Center Street, Berkeley, CA 94704. Have your test results sent directly to the UCLA Office of Undergraduate Admissions and Relations with Schools.

### Mandatory Medical Insurance Requirement

UCLA requires, as a condition of registration, that all international students on nonimmigrant visas have *adequate* medical insurance coverage during all periods of enrollment. See "Mandatory Medical Insurance Requirement for International Students" in the "Undergraduate Registration and Enrollment" section later in this chapter for a description of what constitutes adequate medical insurance. Most travel insurance plans are NOT acceptable; medical insurance plans from foreign countries (including Canada) also are NOT acceptable.

UCLA offers a student Medical Insurance Plan (MIP) which fulfills the requirement. For undergraduates the MIP fee appears as a voluntary option to be added to the fee assessment total on the UCLA Fee Statement portion of the Registration Form each term. This is the only method by which MIP can be purchased.

You are required to provide written proof of adequate medical insurance coverage in response to an annual written notice from the Student Health Service (SHS) Insurance Office. For further information on MIP or adequate medical insurance requirements, call the SHS Insurance Office at (310) 825-1856.

### Readmission

Undergraduate students are required to apply for readmission only if they are absent from the University for more than one term. Thus, if you complete a term and then withdraw, cancel, or fail to register for the next term, registration materials will be available for you for the term immediately following.

If you are absent for two or more consecutive terms, you must complete an Undergraduate Application for Readmission form and file it with the Registrar. During the 1993-94 academic year, all such students returning in the same standing (undergraduate) must file readmission applications as follows:

#### Filing Deadlines

August 20 for Fall Quarter 1993  
December 3 for Winter Quarter 1994  
February 25 for Spring Quarter 1994

Application forms are available at 1113 Murphy Hall. Your completed application must be accompanied by a \$40 application fee (nonrefundable) and transcripts of records from any other institutions (including UCLA Extension) you attended during your absence. Readmission is generally approved if you were in good academic standing (2.0 grade-point average) when you left the University, if coursework completed elsewhere in the interim is satisfactory, and if readmission applications are filed on time. Your college or school may have other academic regulations governing readmission (consult the appropriate counseling office). Contact the readmission clerk at (310) 825-1091 for further information.

# Undergraduate Registration and Enrollment

## Information:

Registration/Enrollment Office  
1113 Murphy Hall  
(310) 825-1091

**Detailed information on registration (fee payment) and enrollment procedures is contained in the quarterly *Schedule of Classes*, available for purchase at the Students' Store several weeks before the beginning of each term. To obtain a copy by mail, write to ASUCLA Students' Store, 308 Westwood Plaza, Los Angeles, CA 90024-1645, Attn: Mail Out. Include a check or money order for \$4.50 payable to ASUCLA.**

Registration consists of paying fees and enrolling in classes. The Registration Form, issued by the Registrar, is used for paying fees and provides information on enrollment in classes by telephone. You must complete both processes by the established deadlines to be officially registered and enrolled for the term.

Advance payment is required of all eligible students. Payments may be mailed or deposited in the Main Cashier's Drop Slot (1125 Murphy Hall) during the published payment period. Payments submitted after the published fee deadline must be made in person at 1125 Murphy Hall and will be assessed an additional \$50 late payment fee. Students on financial aid may be eligible for a waiver of the \$50 fee if funds are delayed by the University.

### Deadline Dates

(Tentative only; consult *Schedule of Classes* for firm dates.)

#### Fee Payment Deadlines:

September 3 for Fall Quarter 1993  
December 3 for Winter Quarter 1994  
March 4 for Spring Quarter 1994

#### Classes Dropped for Failure to Pay Registration Fees:

October 8 for Fall Quarter 1993  
January 14 for Winter Quarter 1994  
April 8 for Spring Quarter 1994

## Mandatory Medical Insurance Requirement for International Students

UCLA requires, as a condition of registration, that all international students on nonimmigrant visas have *adequate* medical insurance coverage during all periods of enrollment.

UCLA offers a student Medical Insurance Plan (MIP) which fulfills the requirement. For undergraduates the MIP fee appears as a voluntary option to be added to the fee assessment total on the UCLA Fee Statement portion of the Registration Form each term. This is the only method by which MIP can be purchased.

You are required to provide written proof of adequate medical insurance coverage in response to an annual written notice from the Student Health Service (SHS) Insurance Office.

If you do not purchase the UCLA Medical Insurance Plan, **you must have an adequate private medical insurance plan that provides all of the following minimum benefits:**

(1) A *minimum* of \$50,000 in "Lifetime Maximum" benefits.

(2) At least 75 percent of the cost for eligible medical expenses, with no more than a 25 percent out-of-pocket cost to you (patient copayment).

(3) A claims representative located in the U.S. In addition, you must be provided with an identification card (or reasonable alternative) written in English, which includes payment provisions listed in U.S. dollars and the U.S. telephone number of the U.S. claims representative.

If your private medical insurance plan does not meet all of the above requirements, you must purchase MIP. For further information on MIP or adequate medical insurance requirements, call the SHS Insurance Office at (310) 825-1856.

## Enrollment in Classes

The quarterly *Schedule of Classes* contains up-to-date listings of class times, meeting rooms, instructors, and all information necessary for enrolling in classes. Using the *Schedule* and with the aid of academic counseling from your school or college advisers, you can assemble a program of courses (see "Choosing Your Major" and "Planning a Program" later in this chapter).

You should plan two or three alternate programs in case your first choice of courses is not available. You may not choose two courses in the same final examination group and should not select classes that conflict in meeting times. If conflicts are unavoidable, consult with the instructor of each course at the first class meeting.

## University Records System Access (URSA)

URSA (310-208-0425) enables all UCLA students to acquire information via a touch-tone telephone from their University academic records stored on the Registrar's Student Records System computer data base.

URSA allows you to process your class enrollment, to obtain course confirmation (including day/time, location, instructor name), UCLA grades for any completed term, GPA, completed units, and outstanding holds (i.e., restrictions from receiving services), and to confirm registration fee payment and Registration Card mailing.

URSA is operational Monday through Saturday from 7 a.m. to midnight, including holidays. You may access the system for grades, GPA, units, and holds information for up to 10 years after your graduation or your last term of attendance. If you have outstanding holds, you will be informed at the beginning of your call.

## Telephone Enrollment

By using URSA, you can enroll in classes, add, drop, or exchange classes/sections, put yourself on the wait list for a class, change the grading basis for a class (i.e., Passed/Not Passed), obtain a reading of your Study List, check your wait-list position, and obtain instructor names for all courses. You enroll during the appointment periods printed on your Registration Form. Consult the *Schedule of Classes* for full enrollment details.

## In-Person Enrollment

For classes that require written approval or specialized processing, you may enroll at computer terminals at 1113 Murphy Hall Monday through Friday from 9 a.m. to 5 p.m.

## Study Lists

On Friday of the second week of instruction the Study List of enrolled courses becomes "official," and all wait lists are eliminated. You should

obtain a reading of your Study List through URSA after all enrollment transactions. **You are responsible for all courses and the grading basis as listed on URSA, and you cannot receive credit for courses not listed.** Errors or omissions should be corrected before your academic dean's deadline for changes by petition. Unapproved withdrawal from or neglect of a course entered on the Study List will result in a failing grade.

Beginning with the third week of instruction, changes to your Official Study List require an Enrollment Petition which is available for purchase in the school supplies section at any ASUCLA Students' Store. Approval signatures are required before processing. If you add a special studies (199) course, you must also bring an approved copy of the Petition for

Enrollment in Special Studies 199 Course. Consult the *Schedule of Classes* for deadlines and complete instructions. Note: When retroactive approval is given, in exceptional cases, to drop a course or to change the grading basis, the course and action will appear on the official transcript.

### **Change of College/School or Major**

Changing your college/school or major requires the approval of the college/school or department you want to attend. Applications for change of college/school are made by petition, which is available without charge from your college or school office. Change of major petitions are available from the department you want to attend. You may not change majors after the opening of the last term of your senior year.



# Undergraduate Fees and Financial Support

## Fees

Although the exact cost of attending UCLA will vary according to personal habits, tastes, and financial resources, there are some fees that all UCLA students must pay. Each entering and readmitted student is required to submit a Statement of Legal Residence to the Registrar's Office. Legal residents of California are not required to pay tuition at the University. Students classified as nonresidents must pay tuition of \$2,566 per term (for a full definition of residence and nonresidence, see the Appendix of this catalog).

At the time of registration each term, all undergraduates must pay the following fixed fees. **Fees for Fall Quarter 1993 are current as of publication date but are subject to change without notice by The Regents.**

### Term Expenses, Fall 1993

University registration fee .....	\$ 231.00
Educational fee .....	1,042.00
Ackerman Student Union fee .....	2.50
Undergraduate Students Association fee .....	18.00
Wooden Recreation Center fee .....	11.00
<b>Total for California residents .....</b>	<b>\$1,304.50</b>
Nonresident tuition fee .....	\$2,566.00
<b>Total for nonresidents .....</b>	<b>\$3,870.50</b>

The registration fee covers certain student expenses for counseling service, all laboratory and course fees, athletic and gymnasium facilities and equipment, lockers, registration, graduation, and care and treatment on campus by the Student Health Service. This fee is charged whether or not you make use of these services.

## Other Fees

Miscellaneous fees charged to UCLA undergraduates include a \$50 charge for late payment of registration fees (after the fee deadline) or late filing of the Study List (after Friday of the second week of classes). A \$60 fine will be assessed if any check for registration fee payment is returned by a bank (i.e., stopped payment, insufficient funds, etc.). Minimal charges of \$5 or less are assessed for most petitions and other special requests. A complete list of fees may be found in the *Schedule of Classes*.

## Fee Refunds

Students who formally withdraw from the University during the first five weeks of instruction may receive partial refunds of fees. For the refund schedule and more information, see "Withdrawal" in Chapter 4 of this catalog or consult the *Schedule of Classes* for policy details and specific refund dates for each term.

## Reduced Fee Programs

UCLA recognizes the need for undergraduate part-time study in special circumstances. If you have ongoing family or employment responsibilities or health problems which preclude full-time study, you may qualify for part-time enrollment.

If you have approval from your college or school to enroll in 10 units or less, you may qualify for a fee reduction. Nonresident students pay only half the nonresident tuition fee; residents pay half the educational fee. You must file the Request for Fee Reduction form with your college or school by Friday of the second week of instruction. Fee assessment is based on total units enrolled as of Friday of the third week of instruction. If you receive the part-time fee reduction from your academic dean, you may not also use the UC employee reduction; you must use one or the other.

## Living Expenses

Printed below are the estimated yearly budgets for undergraduate California residents. Nonresidents must add the \$7,699 annual tuition fee to their total expenses for an accurate estimate. Expenses cover the three regular session terms of the 1993-94 academic year and do not include Summer Sessions. The budgets are designed to serve as a guide and are subject to change.

## Estimated Annual Budgets for Undergraduate California Residents

	Commuter, Living in Parents' Home	Living in UCLA Residence Hall, Co-Op, Sorority, or Fraternity	Living in Off-Campus Apartment or House
University fees	\$3,548.50	\$ 3,548.50	\$ 3,548.50
Books and educational supplies	824.00	824.00	824.00
Food and rent	2,844.00	5,859.00	6,396.00
Transportation	2,508.00	165.00	1,780.00
Personal	—	1,164.00	896.00
<b>Total budget</b>	<b>\$9,724.50</b>	<b>\$11,560.50</b>	<b>\$13,444.50</b>

For more information on housing, see Chapter 1 or contact the UCLA Community Housing Office, 350 De Neve Drive (310-825-4491).

## Financial Support

Information:  
Financial Aid Office  
A129J Murphy Hall  
(310) 206-0400

It is not required that you come from a low-income family in order to qualify for financial aid. You must, however, demonstrate "financial need," which is defined as the difference between the cost of attending UCLA and the amount that you and your family should be able to contribute. The University expects that students and their families will bear as much of the necessary cost of a student's education as their circumstances will permit.

The Financial Aid Office publishes a *Financial Aid Handbook* which provides more complete information than this catalog can give. You can get a copy free of charge from the Financial Aid Office, A129J Murphy Hall, UCLA, Los Angeles, CA 90024-1435.

### Applying for Financial Aid

The deadline for filing all undergraduate financial aid applications for academic year 1994-95 is **March 2, 1994** (applications for 1993-94 would have had to be filed by March 1993). Because of the limits being placed on financial aid funding, meeting deadlines is more crucial than ever. Applications received after the deadline will be considered only if funds are still available. The *Daily Bruin* and other campus media publish information on deadline dates.

Prospective students must first apply for admission to UCLA by filing the *UC Application for Undergraduate Admission and Scholarships* during the filing period (see "Undergraduate Admission" at the beginning of this chapter). You can also use the admissions application to apply for undergraduate scholarships.

### Free Application for Federal Student Aid (FAFSA)

One of the key assumptions of financial aid is that parents, to the extent that they can contribute, have primary responsibility for financing the cost of a student's education. To permit an evaluation of need, all students who apply for need-based aid must provide financial information on the Free Application for Federal Student Aid (FAFSA). If you are financially independent according to financial aid guidelines, your own financial circumstances are analyzed rather than those of your parents.

The FAFSA is used to apply for Federal Pell Grants, funds administered by UCLA, and Cal Grants administered by the California Student Aid Commission. It is available from California high schools and colleges and from the UCLA Financial Aid Office, and should be filed by March 2. Be sure to indicate that a report is to be sent to UCLA.

Continuing students may obtain UCLA Scholarship and Financial Aid Application Packets beginning in January of each year at the Financial Aid Office. Continuing undergraduate students from foreign countries may pick up a Financial Aid Application for International Students at the same office. No financial aid can be awarded to international students in their first year of attendance at UCLA.

### Types of Financial Aid

There are four basic types of aid: scholarships, grants, loans, and work-study employment. Since most students are eligible for several of these, the Financial Aid Office usually offers a combination "package" consisting of some funds that are a gift (scholarship or grant) and some that will have to be paid back or earned through employment. If you indicate a preference for work or loan, the Financial Aid Office will attempt to honor it.

Unless otherwise stated, you must demonstrate financial need to qualify for aid, and you must be making normal academic progress as defined by your college or school, your department, and the Financial Aid Office (for a full definition of financial aid minimum progress standards, see the Appendix of this catalog).

### Scholarships

Scholarships are gifts that do not have to be repaid. The Undergraduate Scholarship Program at UCLA rewards academic excellence and promise and provides assistance in meeting the expenses of an undergraduate education. Scholarships are expected to create opportunities for further academic growth and development.

Financial need is a prerequisite only for University and name (endowed) scholarships other than those listed below. Each year approximately \$300,000 is awarded from the many different scholarship funds. Awards range from \$100 to \$2,000 and are not renewable. You must reapply each year for continued consideration.

#### Regents Scholarships

One of the highest honors that may be conferred on an undergraduate student is the awarding of a Regents Scholarship. Unlike other University scholarships, these are awarded for four years to students entering from high school, and for two years to juniors. A UCLA faculty committee selects Regents Scholars on the basis of their exceptional academic achievement and promise. Financial need is not a criterion for this award; scholars receive a yearly honorarium of \$500 if they have no financial need. Scholars who establish financial need by filing the FAFSA receive a yearly stipend to cover the amount of their need. In addition to the monetary awards, Regents Scholars receive special privileges.

#### National Merit Scholarships

UCLA sponsors a number of four-year scholarships for entering freshmen who are finalists in the National Merit Scholarship competition. Finalists who are admitted to UCLA must select UCLA as their institution of choice and must meet UCLA's scholarship criteria in order to receive a UCLA Merit Scholarship. Awards range from \$500 to \$2,000.

#### UCLA Alumni Association Scholarships

Alumni Scholarships are available to California high school graduates who will be UCLA freshmen in the Fall Quarter and to community college transfer students. No financial need is involved, but eligibility requirements exist, and you should have demonstrated leadership ability, be involved in extracurricular activities, and show academic excellence and promise. Alumni Scholarships are merit-based and competitively awarded; amounts range from \$500 to \$10,000. The Dr. Ralph Bunche Scholarship and Leadership Awards, also presented by the UCLA Alumni Association and named in honor of the Nobel Peace Prize laureate and UCLA alumnus, are given to students from historically underrepresented backgrounds. In addition to the monetary awards, Alumni Scholars receive special privileges. Recipients who receive work-study and/or loans as part of a financial aid package will receive additional alumni grant monies.

#### ROTC Scholarships

ROTC Scholarships are awarded on a competitive basis to U.S. citizens regardless of parents' income. Scholarships provide tuition, a book allowance, fees, and a tax-free monetary allowance of \$100 per month during the academic year. Applications for four-year scholarships may be obtained by calling the appropriate department at UCLA — Army, (310) 825-7381; Air Force, (310) 825-1742; Navy, (310) 825-9075 — or by writing to Armed Forces Opportunities, P.O. Box 2865, Huntington Station, NY 11746-2102. When writing, specify which service (Army, Air Force, Navy/Marine) scholarship is desired. Completed applications should be received prior to July 15 (Army) or August 15 (Air Force and

Navy) for early consideration, but no later than December 1 (all services) of the year preceding college matriculation. Three- and two-year scholarship applications may be obtained from the appropriate UCLA department and must be submitted prior to February 1.

### Prizes

The generosity of alumni and friends of the University provides for competitive prizes and awards in several fields. Selections are made by committees in appropriate academic departments. See your departmental adviser for details.

### Grants

Grants are gifts that do not have to be repaid and are based solely on need. Whenever awarding policies and funds permit, your financial aid package will include a grant.

#### Federal Pell Grants

Federal Pell Grants are federal aid awards intended to be the "floor" of financial aid packages. As such, they may be combined with other forms of aid in order to meet the full costs of education. Amounts for 1993-94 range from \$400 to \$2,300, depending on federal funding, and are determined by your own and your family's financial resources. U.S. citizens and eligible noncitizens may apply by filing the FAFSA. The University requires all eligible undergraduates to apply for a Federal Pell Grant.

#### Cal Grants A and B

California residents who have not completed more than nine quarters or six semesters of college work prior to September 1993 are eligible to apply for a California Student Aid Commission Cal Grant award. The FAFSA and GPA Verification Form are the official applications for these programs. "Cal Grant A" awards are applied toward registration fees. They are based on need and academic achievement and are renewable each year. "Cal Grant B" awards are intended to assist low-income families and are renewable annually. First-year freshmen receive a quarterly stipend. In subsequent years recipients receive a stipend plus funds toward educational and registration fees.

#### State University Grants

These grants provide eligible students with financial assistance from state funds. Awards range from \$300 to \$2,400. All undergraduate students are considered.

#### Federal Supplemental Educational Opportunity Grants

These awards are federally funded and are granted only to undergraduates with financial need. Awards range from \$600 to \$2,400. Recipients must be U.S. citizens or eligible noncitizens.

### Loans

Loans allow you to postpone paying some of the costs of your education until you have completed school. A financial aid offer almost always includes a long-term, low-interest loan. The loans come from revolving funds; most repayments are immediately reloaned to current students.

It is essential that borrowers realize their commitment and responsibility to repay according to repayment schedules. Before accepting a loan, you should assess your total educational debt and your ability to repay following graduation. The University will make every effort to assist you during the repayment of your obligation, but University services, including registration and the release of official transcripts, will be withheld if your loan becomes delinquent. Seriously delinquent accounts are referred to a professional collection agency for action.

All loan recipients must come to the Student Loan Services Office (A227 Murphy Hall) for a loan exit interview before leaving UCLA for any reason. This interview will help you understand your loan agreement and your rights and responsibilities. If you fail to participate in an exit interview, the University will place a hold on your academic records and registration materials. Call (310) 825-9864 for an interview appointment before graduating, transferring, or withdrawing from UCLA.

#### Federal Perkins Loans

These low-interest loans are available to all students who are U.S. citizens or eligible noncitizens and who are carrying at least half the full-time academic workload. Repayment begins six or nine months after you terminate at least half-time study. Minimum repayment is \$90 per quarter, including interest, up to a maximum of 10 years.

#### Federal Nursing Loans

To be eligible for a nursing loan, you must be a U.S. citizen or eligible noncitizen and a student in the School of Nursing. Up to \$1,500 is available per academic year. For more information, contact the financial aid counselor either in the Financial Aid Office or in the School of Nursing.

#### Emergency Educational Loans

You need not be receiving financial aid to apply for emergency loans. You may borrow up to \$100 for immediate emergency needs; this amount is repayable within five weeks. To qualify, you must be a registered UCLA student with a satisfactory loan repayment record. Applications are available from the Student Loan Services Office, A227 Murphy Hall.

#### Federal Stafford Student Loans

Federal Stafford Student Loans are long-term need-based loans made by banks and credit unions. They are available to U.S. citizens and eligible noncitizens who are enrolled in at least a half-time program at UCLA. Freshmen may borrow up to \$2,625, sophomores up to \$3,500, and juniors and seniors up to \$5,500 per academic year, to a maximum of \$23,000.

**Unsubsidized Federal Stafford Loans for Middle-Income Borrowers** are not based on need. You must first apply for a Federal Stafford Student Loan to be considered for this program.

#### Federal Parents Loans for Undergraduate Students (PLUS)

Through this program your parents may be eligible to borrow up to the cost of your education for the academic year minus any estimated financial aid.

### University Work-Study Programs

Work-study is a need-based program designed to expand part-time job opportunities for students. The program allows you to work a maximum of 20 hours per week while attending school. An academic year's work-study award may range from \$1,000 to \$2,100, but your gross earnings may not exceed the amount awarded to you. There are two basic work-study programs available.

Under **Federal Work-Study**, the federal government pays a portion of your hourly wage; your employer contributes the balance. Whenever possible, work is related to your educational objectives. Employment may be on or off campus. Hourly pay rates comply with minimum wage laws and vary with the nature of your work, experience, and capabilities. To be eligible you must be a U.S. citizen or eligible noncitizen.

The **President's Work-Study** program is administered in the same manner as Federal Work-Study except that The Regents of the University and your employer provide funding, and you are limited to on-campus jobs.



# Undergraduate Majors and Degrees

DEPARTMENTS/MAJORS	DEGREES	OTHER
<b>College of Letters and Science</b>		
African Studies	—	Special Program (taken jointly with an organized major)
Afro-American Studies	B.A.	
Anthropology	B.A., B.S.	
Computing, Specialization in	—	Special Program (taken jointly with either anthropology major)
Art History	B.A.	
Asian American Studies	—	Special Program (taken jointly with an organized major)
Astronomy		
Astrophysics	B.S.	
Atmospheric Sciences	B.S.	
Biology	B.S.	
Cell and Molecular Biology	B.S.	
Business and Administration	—	Program (taken jointly with an organized major)
Chemistry and Biochemistry		
Biochemistry	B.S.	
Chemistry	B.S.	
General Chemistry	B.S.	
Chemistry/Materials Science	B.S.	
Chicana and Chicano Studies	B.A.	
Chicana and Chicano Studies	—	Special Program (taken jointly with an organized major)
Classics		
Classical Civilization	B.A.	
Greek	B.A.	
Greek and Latin	B.A.	
Latin	B.A.	
Communication Studies	B.A.	
Cybernetics	B.S.	
Computing, Specialization in	—	Special Program (taken jointly with the cybernetics major)
Development Studies	B.A.	
Diversified Liberal Arts	—	Certificate Program (taken jointly with an organized major)
Earth and Space Sciences		
Earth Sciences	B.A.	
Geology	B.S.	
Geology — Engineering Geology	B.S.	
Geology — Paleobiology	B.S.	
Geophysics — Applied Geophysics	B.S.	
Geophysics — Geophysics and Space Physics	B.S.	
East Asian Languages and Cultures		
Chinese	B.A.	
Japanese	B.A.	
East Asian Studies	B.A.	
Economics	B.A.	
Business Economics	B.A.	
Computing, Specialization in	—	Special Program (taken jointly with any economics major)
Economics/International Area Studies	B.A.	
Economics/System Science	B.S.	
Education	—	Special Program (taken jointly with an organized major)
English	B.A.	
English/Greek	B.A.	
English/Latin	B.A.	
French	B.A.	
French and Linguistics	B.A.	
Geography	B.A.	
Computing, Specialization in	—	Special Program (taken jointly with either geography major)
Geography/Environmental Studies	B.A.	
Germanic Languages		
German	B.A.	
Scandinavian Languages	B.A.	
History	B.A.	
History/Art History	B.A.	
Individual Field of Concentration	B.A.	
International Relations	—	Special Program (taken jointly with the political science major)
Italian	B.A.	
Italian and Special Fields	B.A.	
Labor and Workplace Studies	—	Special Program (taken jointly with an organized major)
Latin American Studies	B.A.	
Linguistics	B.A.	
African Languages	B.A.	
Computing, Specialization in	—	Special Program (taken jointly with any linguistics major except linguistics and computer science)
Linguistics and Anthropology	B.A.	
Linguistics and Computer Science	B.A.	
Linguistics and East Asian Languages and Cultures	B.A.	

DEPARTMENTS/MAJORS	DEGREES	OTHER
Linguistics and English	B.A.	
Linguistics and French	B.A.	
Linguistics and Italian	B.A.	
Linguistics and Philosophy	B.A.	
Linguistics and Psychology	B.A.	
Linguistics and Scandinavian Languages	B.A.	
Linguistics and Spanish	B.A.	
Mathematics	B.S.	
Applied Mathematics	B.S.	
Computing, Specialization in	—	Special Program (taken jointly with any mathematics major except mathematics of computation)
General Mathematics	B.S.	
Mathematics/Applied Science	B.S.	
Mathematics of Computation	B.S.	
Microbiology and Molecular Genetics	B.S.	
Musicology	B.A.	
Near Eastern Languages and Cultures		
Ancient Near Eastern Civilizations	B.A.	
Arabic	B.A.	
Hebrew	B.A.	
Iranian Studies	B.A.	
Jewish Studies	B.A.	
Near Eastern Studies	B.A.	
Neuroscience	B.S.	
Organizational Studies	—	Special Program (taken jointly with an organized major)
Philosophy	B.A.	
Physics	B.S.	
General Physics	B.A.	
Physiological Science	B.S.	
Political Science	B.A.	
Psychology	B.A.	
Cognitive Science	B.S.	
Computing, Specialization in	—	Special Program (taken jointly with any psychology major)
Psychobiology	B.S.	
Religion, Study of	B.A.	
Slavic Languages and Literatures	B.A.	
Russian Language and Literature	B.A.	
Russian Studies	B.A.	
Sociology	B.A.	
Computing, Specialization in	—	Special Program (taken jointly with the sociology major)
Spanish and Portuguese		
Portuguese	B.A.	
Spanish	B.A.	
Spanish and Linguistics	B.A.	
Spanish and Portuguese	B.A.	
Urban Studies	—	Special Program (taken jointly with an organized major)
Women's Studies	B.A.	
Women's Studies	—	Special Program (taken jointly with an organized major)
World Arts and Cultures	B.A.	
<b>School of the Arts</b>		
Art	B.A.	
Dance	B.A.	
Design	B.A.	
Ethnomusicology and Systematic Musicology		
Ethnomusicology	B.A.	
Music	B.A.	
World Arts and Cultures	B.A.	
<b>School of Engineering and Applied Science</b>		
Aerospace Engineering	B.S.	
Chemical Engineering	B.S.	
Civil Engineering	B.S.	
Computer Science	B.S.	
Computer Science and Engineering	B.S.	
Electrical Engineering	B.S.	
Engineering	B.S.	
Materials Engineering	B.S.	
Mechanical Engineering	B.S.	
<b>School of Nursing</b>		
Nursing	B.S.	
<b>School of Theater, Film, and Television</b>		
Motion Picture/Television	B.A.	
Theater	B.A.	

# Getting Your Bachelor's Degree

## The College and Schools

The UCLA campus consists of one college and 13 schools, most of which are subdivided into departments. The courses of instruction are administered within the departments.

The **College of Letters and Science** provides a broad, nonprofessionally oriented curriculum leading to both undergraduate and graduate degrees.

The **schools** provide training for specific professions and are authorized to grant professional degrees (e.g., Master of Business Administration, Doctor of Education, Master of Public Health). UCLA has 13 professional schools, four of which offer undergraduate degree programs: School of the Arts, School of Engineering and Applied Science, School of Nursing, and School of Theater, Film, and Television.

Each college and school has its own degree requirements and is headed by a dean or provost who has final academic authority. Thus, when you attend UCLA, you are enrolled not only at the University of California, Los Angeles campus, but in a specific college or school within the University. Your academic life is governed by the college or school which houses your major.

As the chart on the previous pages shows, UCLA offers Bachelor of Arts (B.A.) and Bachelor of Science (B.S.) degrees in a broad range of disciplines. Currently there are no undergraduate minors at UCLA but, if you are in the College of Letters and Science, there are a number of special programs which you may complete as an adjunct to your major. The bachelor's degree (you may earn only one) is the culmination of your undergraduate work; master's and doctoral degrees are earned in graduate study.

## Knowing Your Responsibilities

UCLA provides its students with a wide variety of academic assistance and personal support resources, but it is up to you to realize when you need help and to seek it out. It is also your responsibility to keep informed and to comply with the rules, regulations, and policies affecting your academic standing and your life as a UCLA student. Consult this catalog, the college and school announcements, and the *Schedule of Classes* for the information you need; watch for official announcements in the *Daily Bruin* and on campus bulletin boards. Meeting academic deadlines, monitoring your Study List for accuracy, completing prerequisites, and fulfilling degree requirements are all part of your academic duties as a student. Living up to your responsibilities will add immeasurably to the value and enjoyment of your education (also see "Student Conduct" in the Appendix of this catalog).

## Choosing Your Major

One of the most important decisions you will have to make in college is your choice of major — the field of study which represents your principal academic interest and which possibly will contribute toward your career goals. Some students select their major at the time they fill out the University's application for admission. A far greater number, however, are undecided about their major.

If you are in the College of Letters and Science, you do not need to declare your major in your freshman year. The college allows you to attend with an undeclared major until the end of your sophomore year. In fact, if you are not certain of your specific academic goals, it is often wise to wait and explore the diversity of subject areas offered at UCLA. Enroll

in introductory courses (usually numbered below 100) in a variety of disciplines to learn the scope and vocabulary of the major. It is not unusual for students to become enthusiastic about disciplines previously unfamiliar to them. With careful planning, such courses may also apply toward fulfilling college requirements for whatever major you choose. To narrow your choices further, carefully consider general college requirements, the description of courses offered in the major, and the departmental requirements for completing the program of study. Look at the books required for each course. Sit in on a few classes and talk with professors during their office hours. Discuss your interests and plans with a departmental counselor or faculty adviser, a college counselor, or advisers in the Placement and Career Planning Center.

**A few words of caution:** certain majors, especially in the arts, engineering, and the sciences, require early declaration. Some have enrollment quotas and will allow application by new majors only during a specified term. Check with the departmental adviser for the majors that interest you.

In addition, each UCLA undergraduate is limited to between 208 and 216 quarter units, depending on the college or school, to complete the academic program and fulfill all degree requirements. So, if you wait to declare a major, don't wait too long. In any case, you must declare a major by the beginning of your junior year (90 quarter units).

When you are ready to declare your major, or if you wish to change from one major to another, pick up a Petition for Change of Major at the college or school office. There is no fee for this petition.

## Planning a Program

Every new student should obtain academic counseling before enrolling in classes at UCLA (counseling is required in the School of Engineering and Applied Science). Working with a tentative major in mind, you need to plan courses to satisfy all of the degree requirements while staying within the maximum number of units required for graduation. The Orientation program for new students will take you through a step-by-step process designed to insure you enroll in an effective program (see "Orientation" later in this chapter). If you cannot attend Orientation, see your college or school adviser or, if you have selected a major, make an appointment with your major department adviser before enrolling in classes.

## Undergraduate Degree Requirements

In all campus units except the School of Engineering and Applied Science, you are required to earn a minimum of 180 units from all college-level coursework for the bachelor's degree at UCLA. A maximum of 208 units is allowed in the School of the Arts, School of Nursing, and School of Theater, Film, and Television; in the College of Letters and Science a maximum of 216 units (228 for double majors and special programs) is allowed. In the School of Engineering and Applied Science, the minimum units allowed are between 180 and 200 (depending on the program); 213 maximum units are allowed.

As you work toward a bachelor's degree, be aware that in addition to unit requirements there are three types of requirements which you must satisfy. The first type consists of Universitywide requirements which all undergraduates must satisfy; the rest vary depending on your major and the college or school which offers it.

- (1) University requirements — Subject A or English as a Second Language (ESL), and American History and Institutions;
- (2) College or school requirements (e.g., credit and scholarship, English composition, general education requirements);
- (3) Department requirements (courses in preparation for the major and in satisfaction of the major).

University requirements are described below. Turn to "Requirements for the Bachelor's Degree" in the appropriate school or college chapter for a description of the college or school requirements, and then to the individual departments within each college and school for the department requirements.

## University Requirements

The University of California has established two requirements which all undergraduates must satisfy in order to graduate: Subject A or English as a Second Language (ESL), and American History and Institutions. It is your responsibility to see that these requirements are fulfilled.

### Subject A

Because proficiency in English composition is so important to successful performance in many courses, Subject A is the only requirement for graduation that you must satisfy before entering UCLA or during your first year in residence. You may meet this requirement by:

- (1) Scoring 3, 4, or 5 on one of the College Entrance Examination Board (CEEB) Advanced Placement Tests in English OR
- (2) Scoring 600 or better on the CEEB Achievement Test in English Composition OR
- (3) Presenting transfer credit for an acceptable college-level course in English composition (passed with a grade of C or better) at another institution OR
- (4) Passing the Subject A Examination. All freshmen from California high schools should have taken the Universitywide Subject A Examination in May 1993; others will take an examination at UCLA early in their first term.

If you do not meet the requirement in one of the ways described above, Academic Senate regulations require you to enroll in either English A or 2 (determined by performance on the Subject A Examination) as early as possible during your first year in residence. Each course must be taken for a letter grade and passed with a grade of C or better. If you receive a final grade of C – or less, you must repeat the course during your next term in residence. Satisfaction of the Subject A requirement is a prerequisite to English 3 and all subsequent English courses.

**English as a Second Language (ESL) Students:** If your native language is not English, you are required to take the UCLA English as a Second Language Placement Examination (ESLPE) in addition to the Subject A Examination. Results of both examinations will be reviewed to determine which track (Subject A or ESL) better meets your needs. If you are placed in the Subject A track, you may satisfy the Subject A requirement by following the guidelines listed above. If you are placed in the ESL track, you may satisfy the requirement by completing the required courses in the English as a Second Language 33 series — one or more of courses 33A, 33B, 33C — and 35, depending on your ESLPE results. Each course must be passed with a grade of C or better (C – or a Passed grade is not acceptable). You must begin taking the required courses during your first term in residence at UCLA and then proceed in the English as a Second Language 33 series followed by course 35. All units apply toward graduation but cannot be applied toward general education requirements.

Transfer students whose native language is not English may be required by the Office of Undergraduate Admissions and Relations with Schools to take the ESLPE even if they have received transfer credit for an acceptable college-level course in English composition at another insti-

tution. Those without transfer credit must take both the ESLPE and the Subject A Examination.

### American History and Institutions

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

- (1) Completing a year's course in American history or American government, or a one-year combination of both, in high school with an average grade of B or better OR
- (2) Completing any one of the following UCLA courses with a grade of C or better, or a grade of Passed:
  - Afro-American Studies M104A, M104B, M158A, M158B, M158C
  - Asian American Studies M196A
  - Chicana and Chicano Studies M159A, M159B
  - Economics 183
  - English 80, 85, M104A, M104B, 115A, 170, 171, 172, 173, 174, 176, 177
  - Geography 136
  - History 6A, 6B, 6C, 7A, 7B, 145A, 145B, 146A, 146B, 147A, 147B, 147C, 148A, 148B, 148C, 149A, 149B, 150A, 150B, 150C, 151A, 151B, 152A, 152B, M153, 154A, 154B, 154C, 154D, 155A, 155B, 156A through 156H, 157A, 157B, M158A through 158E, M159A, M159B, 160, 161, 162, 163, 164
  - Political Science 1, 40, 70, 80, 114A, 114B, 143, 144, 145, 172A, 172B, 183A

Equivalent courses completed in UCLA Extension or at another college institution, and accepted by the Board of Admissions, may be used to fulfill the requirement OR

- (3) Presenting a satisfactory result of the requirement, by examination, as administered at another college or university within the state OR
- (4) Scoring 500 or better on the College Entrance Examination Board (CEEB) Achievement Test in American History OR
- (5) Scoring 3, 4, or 5 on the CEEB Advanced Placement Test in American History.

Candidates for an instructional credential, but not for a degree, must take one of the following courses: History 7A, 7B, 151A, 151B, Political Science 172A, or 172B.

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

For more information on this requirement, contact the undergraduate History Department counselor in 6248 Bunche Hall (310-825-3720).

### Course Credit and Minimum Scholarship

The grades A through C and Passed denote satisfactory progress toward the bachelor's degree. The grades C – through D – yield unit credit but may not satisfy certain scholarship requirements. Even when they do, they must be offset by grades of C + or better in other courses.

In order to qualify for a bachelor's degree in any college or school at UCLA, you must earn at least a C (2.0) average in all courses taken at any University of California campus. If you fail to maintain this level, you may be placed on academic probation or may become subject to dismissal.

### Academic Probation

You will be placed on probation if your overall grade-point average falls between 1.5 and 1.99 or if you do not earn at least a 2.0 GPA in any one term. While you are on probation, you may not take any course on a Passed/Not Passed basis, and you may have to limit your Study List to 12 units.

Your probation will end at the close of a regular term if you have attained a C (2.0) average for the term and a cumulative C average in all University work. If you do not end probation within two terms, you will become subject to dismissal.

### Academic Dismissal

You will be subject to dismissal from the University under any of the following conditions:

- (1) If your grade-point average in any one term is less than 1.5 OR
- (2) If you do not earn at least a C (2.0) average in any term when you are on probation OR
- (3) If you do not end probation within two terms.

If you are subject to dismissal, your transcript will carry that notation. You should make an appointment with your college or school counselor. Depending on your situation, you will be given conditions for continuation, or you will be dismissed from the University.

Your college or school counselor can explain the conditions for readmission if you wish to return to the University after dismissal (see "Readmission" earlier in this chapter).

### Progress Toward the Bachelor's Degree

The undergraduate curriculum at UCLA is designed as a four-year curriculum. In order to graduate in four years, you need to complete at least 45 units during each academic year, not just the 36 required for "minimum progress." In the absence of special circumstances justifying slower progress, you should plan to complete 45 units per year, in an arrangement of courses appropriate to your needs. Consult your college or school counselor if you have questions or seek advice.

Each college and school enforces minimum enrollment or minimum progress regulations. You may be subject to disqualification for failing to meet minimum progress requirements. Check with your college or school counselor. Please read the degree requirements section under each college and school for specific Study List limits. See Chapter 4 for information on concurrent enrollment, credit by examination and credit from other institutions, and special studies (199) course limitations.



UCLA in 1947.

# Academic Resources and Assistance

## Alternative Academics

UCLA has a broad range of options that can lend an added dimension to your undergraduate academic program. You will find other services and programs available to both graduate students and undergraduates in Chapter 1 of this catalog.

### Center for American Politics and Public Policy (CAPP)P

The Center for American Politics and Public Policy selects 25 to 30 undergraduates each fall and spring to participate in its Quarter in Washington, DC Program, which offers an exciting opportunity to combine UCLA courses with research and field experience in areas directly related to the policy-making process of the federal government. Students live in the Washington area for 12 weeks, dividing their time between courses taught by UC faculty and a part-time field placement position. They are registered as UCLA students and earn academic credit for the courses taken. Most of the courses emphasize politics and public policy. The core course carries political science credit. Efforts are also made to provide at least one course in a subject other than political science, such as art or history. All courses take advantage of Washington's unique resources for study and research.

CAPP administrators help students find a field placement, which is central to a research seminar each student takes, in a Washington organization. Washington field placement locations have included the American Enterprise Institute, CNN, Carnegie Endowment for International Peace, General Accounting Office, Heritage Foundation, Japan Economic Institute, Justice Department, Office of National Drug Control Policy, Senator Edward Kennedy's Office, Treasury Department, and others. For further information and applications, contact the CAPP Office in 310 Graduate School of Library and Information Science Building (310-206-3109).

### Council on Educational Development

The Council on Educational Development (CED) offers special courses and programs that encourage educational diversity and enrichment for undergraduates. CED works closely with the college, schools, and research centers on campus to support new academic programs and courses. Many of these courses cover socially important issues which, because they are new, are not addressed in existing academic departments. Many involve nontraditional educational concepts, interdisciplinary topics, and subjects on the leading edge of faculty interest.

Each year several courses focus on medicine, law, and human values. Students analyze ethical, legal, and scientific values in medical and mental health care issues, such as genetic screening, human experimentation, patients' rights, and medical technology.

For information about CED courses, consult the *Schedule of Classes*. Your college, school, or department can advise you about degree credit for CED courses. The office is located in 80 Powell Library (310-825-5467).

## EXPO Center

The Extramural Programs and Opportunities (EXPO) Center offers access to a wide variety of off-campus learning experiences. For more information on any of the programs or services listed below, contact the EXPO Center, A213 Ackerman Union (310-825-0831). The center is scheduled to move to Wooden Center East during 1993-94.

**UCLA National Internship Program** — More than 4,000 UCLA students have learned about the inner workings of government and business while serving in the internship program, the largest of its kind at any university in the nation. Bruins serve full-time internships for one or more terms on the staffs of elected officials, public interest groups, government agencies, and corporate offices in Sacramento and Washington, DC. Stipends for students in the program can be arranged.

**Los Angeles Internship Program** — Local internships are available throughout the year in fields such as advertising, business, film, media, politics, and television.

**International Opportunities** — The EXPO Center counsels students on study, travel, volunteer, international internship, and work opportunities outside the U.S., offering information on some 2,400 overseas study programs open to UCLA students. EXPO also maintains a library of current materials related to study, travel, and other opportunities abroad. International Student and Teacher Identity Cards and Youth Hostel memberships are issued at the center.



CAPP students in Washington, DC.

## Field Studies Development

Field Studies Development, a division of the Office of Instructional Development, helps students, faculty, and academic departments to develop meaningful learning experiences outside the classroom. These may be in the form of internships, field studies or research, or community service. The office is located in 70 Powell Library (310-825-7867).

**Departmental Field Studies** — Academic field study programs have been developed in Afro-American studies, anthropology, Asian American studies, business and administration, communication studies, education, English, film and television, folklore, geography, history, physiological science, psychology, sociology, urban planning, and women's studies. Departmental coordinators work with you to develop field projects and find placements.

**Independent Field Studies** — You may design internships and field study opportunities to meet your specific academic, personal, and career goals. A field studies coordinator assists you with your plans and helps identify faculty sponsors for your field study. Most departments offer independent field study opportunities.

**Community Service — Learning Programs** — These programs enable students to perform community service while studying topics related to economics, history, sociology, education, urban planning, or other subjects.

**Sequential or Immersion Options** — Field Studies Development co-sponsors course sequences (taken during one term or over a period of two or three terms) where students study a single issue from different perspectives. For example, the Sociology Department sponsors a three-course "term" which focuses on the control of crime issues.

**Developmental Disabilities Immersion Program (DDIP)** — Cosponsored by Field Studies Development, the Department of Psychology, and the Department of Psychiatry and Biobehavioral Sciences, DDIP offers an intensive study and work experience in developmental disabilities. The program is a full two-term sequence offered in Winter and Spring Quarters. For more information, call (310) 825-1627.

## Freshman and Sophomore Programs

### Honors Collegium

The Honors Collegium is an innovative educational alternative designed primarily for UCLA's promising freshmen and sophomores. Some upper division courses are also offered. For a complete description of this program, see Chapter 5 on the College of Letters and Science.

### Lower Division/First-Year Seminars

These departmentally sponsored seminars are designed to provide freshmen and sophomores the opportunity to participate in a small classroom setting to enhance writing, verbal, and analytical skills. Many courses carry general education credit.

### Professional Schools Seminar Program (PSSP)

This program offers seminars that explore topics bridging various academic disciplines and professional practice. Students seeking to define their own academic and career goals gain valuable exposure to (1) research frontiers in the professions, (2) policy and ethical issues, and (3) historical and sociological perspectives on professional practice.

Seminars are offered in Fall, Winter, and Spring Quarters (consult the *Schedule of Classes*). Enrollment is limited to allow students close contact with professional school faculty members; lower division students are preferred. You must satisfy the Subject A requirement before enrolling in these seminars. General education credit is granted for most seminars. For further information, contact the PSSP Office in 80 Powell Library (310-825-5467).

## Individual Classes

Most departments offer the individual studies (199) course for seniors — or juniors with at least a B average — who want to pursue a particular research interest. Consult your department or the departmental listings in this catalog for further information.

## Individual Majors

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

The requirements for an individual major vary with each college and school at UCLA, although maintaining a high scholastic average is usually mandatory. Please refer to the appropriate college or school chapter.

## Reserve Officer Training Corps (ROTC)

The University of California, in accordance with the National Defense Act of 1920 and with the concurrence of The Regents, offers courses and programs in military training. This voluntary training allows you to qualify for an officer's commission in the Army, Navy, Air Force, or Marine Corps while completing your college education. ROTC courses are offered by three departments within the College of Letters and Science: Aerospace Studies (Air Force), Military Science (Army), and Naval Science (Navy and Marine Corps). Equipment, uniforms, and textbooks are provided. The programs carry a monthly stipend in the junior and senior years, and additional financial aid is available to qualified students. Individual programs are described in detail in Chapter 5 on the College of Letters and Science.

## Student Research Program (SRP)

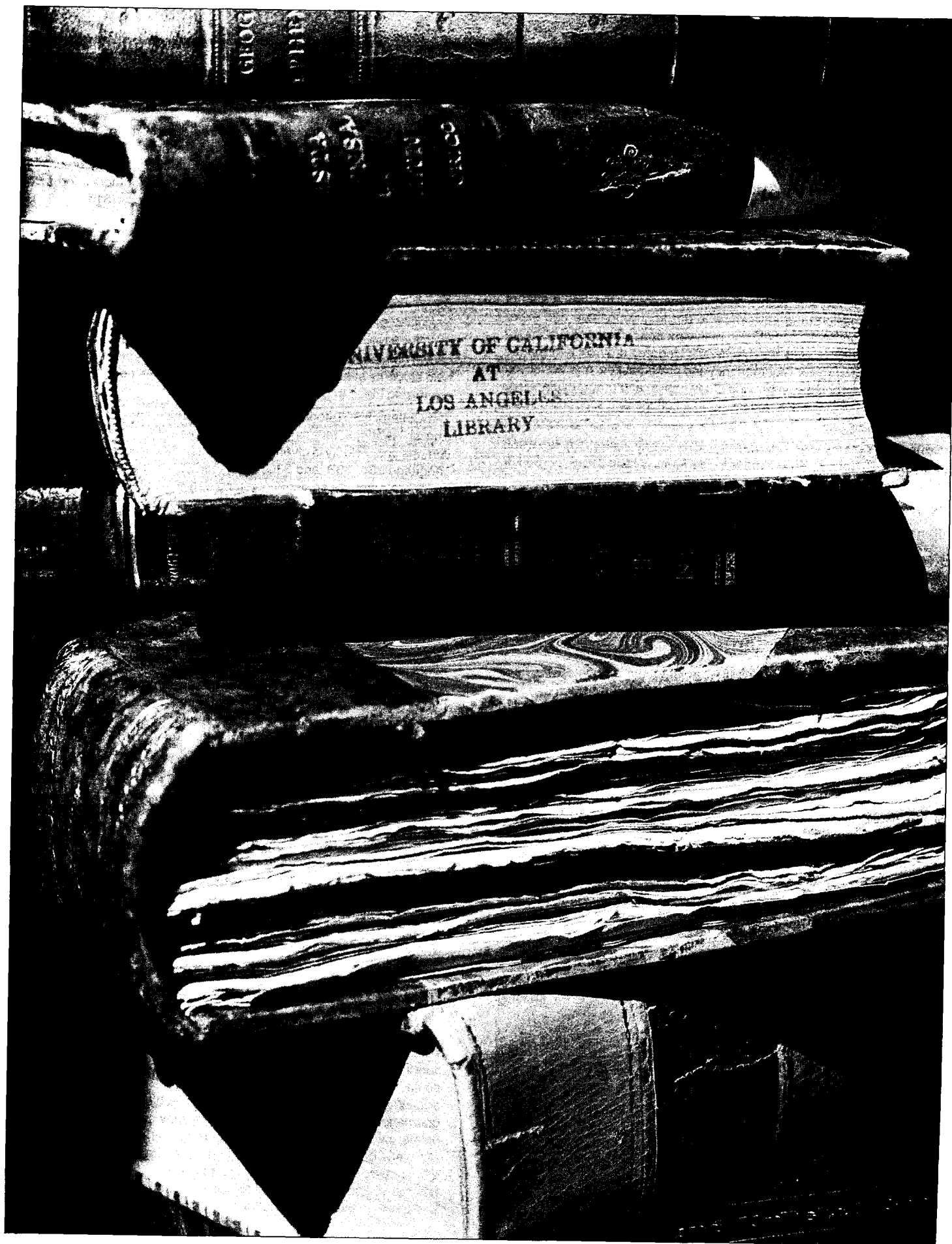
The Student Research Program (A316 Murphy Hall, 310-825-6443) invites undergraduates to become directly and fully involved in the University research community through opportunities to participate in faculty research projects. You gain valuable research experience, acquire in-depth knowledge of a specific field or discipline, and establish a "partnership" with a faculty member. The program is available to all undergraduates either on a voluntary basis or for credit. If you participate on a voluntary basis, you receive transcript notation after completing 60 hours of research (approximately six hours per week). *There is no required minimum grade-point average.* If you wish to participate for credit, consult the *SRP Information and Faculty Directory Handbook* for further information on the enrollment process.

## Teaching Careers

Although UCLA has no undergraduate major in education, you may prepare for a career in teaching and/or education on campus. Information is available from the following offices:

- (1) Specialization in Education Program Office, 1605 Maxxam Building (122 Moore Hall in early 1994), for information regarding this specialization. The program is described in detail in Chapter 5 on the College of Letters and Science.
- (2) College of Letters and Science Preprofessional/Pregraduate Advising Office, A316 Murphy Hall, for information regarding the Diversified Liberal Arts Program for instructional credential candidates. The program is described in detail in Chapter 5 on the College of Letters and Science.
- (3) Placement and Career Planning Center, for information on employment opportunities in teaching and education.
- (4) UCLA Graduate School of Education Office of Student Services, 1605 Maxxam Building (122 Moore Hall in early 1994), for information on master's and doctoral degree programs in education and current information on requirements for various instructional credentials.

UNIVERSITY OF CALIFORNIA  
AT  
LOS ANGELES  
LIBRARY





## Advising and Academic Assistance

UCLA's academic standards are high, and many students find they need some form of academic assistance. Help is available in several forms: staff and student counselors, faculty advisers, services, and special programs. You need only to seek it out. This section introduces you to the many kinds of assistance available to undergraduates. Refer to the section on "Student Services" in Chapter 1 for other helpful programs.

### College and School Advisers

Each college/school and academic department at UCLA has a staff of academic counselors and advisers who are knowledgeable and experienced. They are eager to help you plan your academic program, monitor your progress toward the bachelor's degree, provide information about college and major requirements and prerequisites, and assist you with academic problems, improving study habits, and program planning. Counseling offices for each undergraduate college and school are listed below.

**College of Letters and Science** — A316 Murphy Hall, (310) 825-1965 or 825-3382 (**Honors Programs** — A311 Murphy Hall, 310-825-1553 or 825-3786)

**School of the Arts** — 125 East Melnitz Building, (310) 206-3564

**School of Engineering and Applied Science** — 6426 Boelter Hall, (310) 825-2826

**School of Nursing** — 2-200 Factor Building, (310) 825-7181

**School of Theater, Film, and Television** — 103 East Melnitz Building, (310) 825-5761

### Counseling Assistants

Counseling assistants (CAs) are UCLA graduate students who have been specially trained to help new students with the transition into University life. Employed by the Division of Honors and Undergraduate Programs in the College of Letters and Science, they represent a number of academic disciplines in the college. CAs help new students with program planning and course selection and provide assistance in skill building and personal support. You may make an appointment with a CA at the information window at A316 Murphy Hall. CAs are available at the College Counseling Service in Murphy Hall and at Griffin Commons. For additional information, call (310) 206-6681.

### ASK Peer Counselors

The ASK program provides an extension to the counseling services available to College of Letters and Science undergraduates. ASK counselors are students trained to provide you with academic information, advisement, and referral in a convenient walk-up setting.

You can find ASK counselors weekdays at these campus locations: Campbell Hall (southwest corner), Royce/Powell Quad, and Schoenberg Hall (vending area) from 10 a.m. to 2 p.m.; Griffin Commons Monday, Tuesday, and Thursday from 4 to 8 p.m. and Wednesday from 6 to 8 p.m.; and adjacent to 1105 Murphy Hall from 9 a.m. to 4 p.m.

### Orientation

Orientation at UCLA provides a comprehensive introduction to campus life. During the summer and before the beginning of Winter and Spring Quarters, special programs offer new undergraduates extensive academic counseling and educational planning. During Orientation you work in small groups with peer counselors and professional academic advisers. You gain insight into necessary academic skills, learn how to plan and construct your academic program, and become familiar with the educational opportunities, student services, and facilities available at

UCLA. Individual counseling sessions help you adjust to University life and fulfill the advising requirements of the college and some schools. Sessions for parents are also offered.

During the summer, Orientation offers three-day, two-night dormitory live-in programs for first-year students and one-day programs for transfer students. Prior to Winter and Spring Quarters, a one-day on-campus program is offered. There is a fee for participation. For more information, contact the Orientation Office in 201 Griffin Commons (310-206-6685).

### College Tutorial Services

#### College Composition and ESL Tutorials

The College Composition Tutoring Lab, in cooperation with the UCLA Writing Programs, offers individual assistance to students enrolled in English A, 2, and 3 and to students writing papers for other UCLA courses. The lab is staffed by trained undergraduate peer tutors who have shown outstanding ability in advanced composition courses and who can help students at any stage of the writing process — from generating and organizing ideas to polishing final drafts.

The College ESL Tutoring Lab assists nonnative-speaking students with English grammar, idioms, pronunciation, listening comprehension, and composition. Priority is given to students enrolled in English as a Second Language 33A, 33B, and 33C, and other ESL courses. Most of the ESL tutors are graduate students pursuing degrees in teaching English as a second language.

Both the Composition and ESL Labs are located in 228 Griffin Commons and offer free individual tutoring by appointment. For tutoring appointments or further information, call (310) 206-1491.

#### College Math/Sciences Tutorials

The College Math/Sciences Tutorials, located in 230 Griffin Commons, provide an organized by-appointment tutorial program for most introductory courses in biology, chemistry, mathematics, and physics. Trained tutors meet in small group sessions on a weekly basis, teaching methods to improve problem-solving skills and test-taking strategies. Requests for tutors must be made during the first three weeks of the term; early registration is strongly advised. Drop-in tutoring is also offered. Schedules vary each term. For more information, call (310) 206-6965 or 825-7305.

#### College Tutorials for Student Athletes

The College Tutorials for Student Athletes provide tutoring in the evening and on weekends for intercollegiate athletes whose practice and competition schedules prevent them from participating in other tutorial services. Eligible student athletes can receive regular individual or small group assistance in a wide range of courses, provided they request tutoring within the first four weeks of the term. Trained tutors clarify course content, teach study strategies and, in consultation with course instructors, develop problem-solving exercises and practice examinations to build learning and performance skills.

The coordinator is located in 209 Griffin Commons. For tutoring appointments and further information, call (310) 825-8699.

### Academic Advancement Program (AAP)

Located in Campbell Hall, the Academic Advancement Program is dedicated to expanding educational opportunities for over 5,500 underrepresented minority and low-income students. AAP's mission is to promote, encourage, and increase the academic achievement, retention, and graduation of AAP students so that they may assume positions of academic, professional, political, and community leadership. Recognizing the many obstacles students may encounter as they pursue their academic careers, AAP draws on the full range of University resources, programs, and services to enhance students' scholastic achievement and promote their successful pursuit of the bachelor's degree.

AAP provides services to students from historically underrepresented populations (African American, Chicano/Latino, American Indian, Pacific Islander, and Pilipino), as well as to low-income students of all ethnicities. All students, except American Indians, must be California residents. For more information regarding eligibility, application, and/or specific questions on services, contact the AAP Office in 1209 Campbell Hall (310-825-1481).

### Freshman and Transfer Summer Program

The Freshman and Transfer Summer Program is a six-week academic program designed to introduce students to the rigorous demands of UCLA coursework, as well as prepare them for the competitive pressures of Fall Quarter and the academic year. Through classroom lectures and discussion sections, course assignments, examinations, tutorial and counseling sessions, academic advising, and learning skills workshops, entering students are introduced to the academic demands of UCLA. The program assists in enhancing academic strengths, as well as the self-management skills necessary to meet the challenges of University life.

### Counseling Services

AAP counselors provide sensitive and caring counseling designed to facilitate and support the self esteem and educational achievement of AAP students. The unit has full-time professional counselors officially responsible for University academic advising, a housing counselor who provides counseling regarding housing concerns and acts as the liaison between the UCLA Community Housing Office and AAP students, and part-time undergraduate peer counselors who provide a student's perspective on courses, study materials, and educational goals.

AAP counseling services also include a special component called the Program Leading to Undergraduate Success (PLUS), which provides retention services specifically for AAP students whose parents have never earned a bachelor's degree and/or whose combined family income meets program guidelines. Professional and peer counselors work together to design a counseling program that focuses on the special needs of PLUS students and their families.

### Tutorial Services Unit

The Tutorial Services Unit builds on the premise that critical thinking and intellectual independence are best developed through active dialogue. Tutorial services are provided for all AAP students who wish to improve their academic, analytical reading and composition, quantitative, critical thinking, and study skills while mastering course materials. The unit provides academic support services through its English/humanities, social sciences, and math/sciences tutorial centers. Tutoring, either individual or small group, is a free service to all AAP students.

### Graduate Mentor Program (GMP)

The primary goal of the Graduate Mentor Program is to increase the number of AAP students who enroll in graduate school through the encouragement, support, guidance, and advocacy of graduate student mentors. Services offered include individual counseling regarding graduate school, workshops and seminars (on such topics as the graduate application process, financing graduate studies, and GRE preparation), and faculty round tables designed to expose prospective graduate students to the many possibilities of graduate study through informal interactions with faculty.

### Learning Resource Centers (LRC)

The **Instructional Media Laboratory** provides individual student access to course-related interactive and videotape programs. Students, assigned by faculty to study specific supplementary materials, may learn at their own pace and at times that suit their individual schedules. The laboratory is located in 270 Powell Library (310-206-1211).

The **Instructional Media Library** is UCLA's central resource for the collection and maintenance of educational and instructional media. Materials from the collection are loaned to regularly scheduled UCLA classes and may be rented by organizations and individuals from the campus community. The library is authorized to monitor compliance with University guidelines and federal copyright law governing the use of video recordings. Reference books from educational and feature film distributors are available. The staff assists in researching media on any subject and obtaining materials from outside sources. The library has moved to 180 Powell Library (310-825-0755) for the duration of the seismic renovation project.

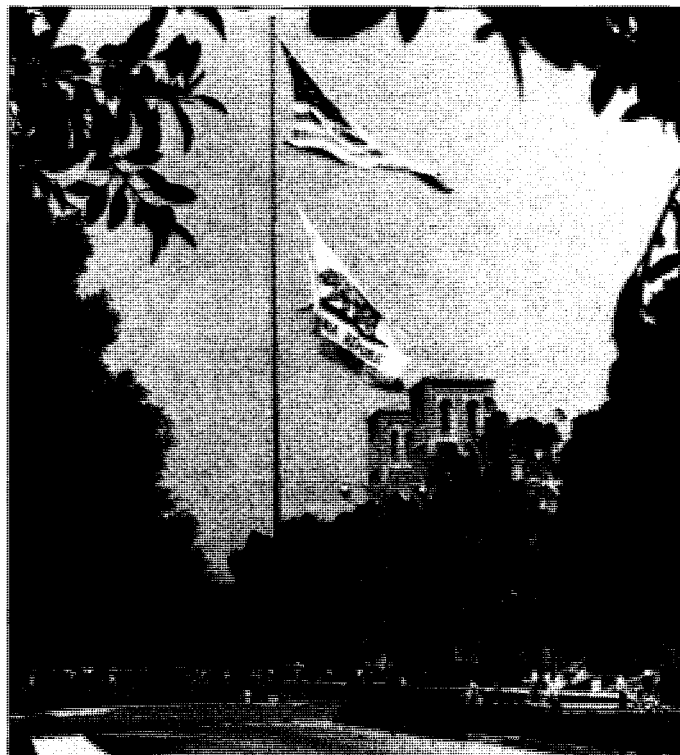
The **Language Laboratory** is a full-service audio facility for teaching and learning languages. Students enrolled in foreign language classes are assigned by faculty to practice pronunciation, comprehension, and listening skills in the laboratory, 190 Powell Library (310-206-8855). Audiotope programs which accompany specific texts used in classes and listening, recording, and monitoring equipment are available.

### Petitions

A petition is a piece of paper representing your need or desire to be excepted from any standard rule or regulation in the University. It is the only way to obtain formal approval from the department, the college or school, the Registrar, or whoever has authority over your particular request. Some petitions carry a small fee; others are free.

An approved petition for a waiver or substitution in degree requirements represents an agreement between you, your college or school and, in some cases, the department chair, granting you an exception from the existing regulations.

Petitions are also used at UCLA to change your college/school or major, take more or fewer units than regulations permit, make late changes to your Study List, remove an Incomplete grade, or obtain credit by examination. In addition, you may petition for concurrent enrollment, double major, or waiver of scholarship requirements. Petitions for most of these exceptions are available from your college/school or department.



# Academic Excellence

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

## Dean's Honors List

The College of Letters and Science, School of the Arts, School of Engineering and Applied Science, and School of Theater, Film, and Television award Dean's Honors to deserving students each term. The School of Nursing awards Dean's Honors on an annual basis. These honors are based on the grade-point average attained within a specified number of units. Consult your college or school for further information.

## Honors at Graduation

Your college or school awards honors according to your overall GPA at graduation. **To be eligible you must have completed at least 90 (98 for the School of Nursing) University of California units for a letter grade.**

The levels of honors are *summa cum laude*, *magna cum laude*, and *cum laude*. Specific requirements vary for each level and are included in the appropriate college and school chapters.

## Departmental Honors

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

## Departmental Scholar Program

Departments in all campus units except the School of Nursing may nominate exceptionally promising juniors and seniors as UCLA Departmental Scholars to pursue bachelor's and master's degree programs simultaneously. Nominations are submitted to the college or school dean or provost for recommendation to the dean of the Graduate Division. If you are interested in becoming a Departmental Scholar, consult your department well in advance of application dates for graduate admission (see the Calendar at the beginning of this catalog).

## Honor Societies

### Alpha Lambda Delta and Phi Eta Sigma

Membership in these national freshman honor societies is based solely on academic achievement during your freshman year. To be eligible you must have a 3.5 GPA with 12 graded University of California units in the first term of your freshman year, or a cumulative 3.5 GPA at the end of the second and/or third terms. Invitations are issued in Winter Quarter, and initiation is held during Spring Quarter. For more information, contact the Office of the Dean of Students, 1206 Murphy Hall (310-825-3871).

### Golden Key

Golden Key is a national interdisciplinary academic honors organization dedicated to excellence. Students qualify on the basis of objective academic criteria; no more than the top 15 percent of enrolled juniors and seniors may be eligible. The society recognizes and encourages scholastic achievement and excellence in all undergraduate fields of study, unites with collegiate faculties and administrators in developing and maintaining high standards of education, provides economic assistance to outstanding members by means of an annual scholarship for initiates and graduating seniors, and promotes scholastic achievement and altruistic conduct through voluntary service. Invitations are issued in Winter Quarter, and a reception is held in Spring Quarter. For more information, contact the Office of the Dean of Students, 1206 Murphy Hall (310-825-3871).

### Mortar Board

Mortar Board is a national honor society for college seniors which recognizes outstanding and continual scholarship, leadership, and service to the campus community. To be considered for membership, candidates must have completed 90 units and must have attained at least a B average or be in the highest 35 percent scholastically of the junior class, whichever is higher. Applications are available from the Office of the Dean of Students, 1206 Murphy Hall (310-825-3871), early in Winter Quarter and are due by mid-February. Approximately 40 members are selected each spring by the outgoing chapter.

### Phi Beta Kappa

Phi Beta Kappa is a national honorary society in the humanities, liberal arts, and sciences, founded at the College of William and Mary in 1776. Membership is conferred for high scholastic standing and is determined by vote of the chapter council according to scholarship records. (Students do **not** apply for Phi Beta Kappa membership.)

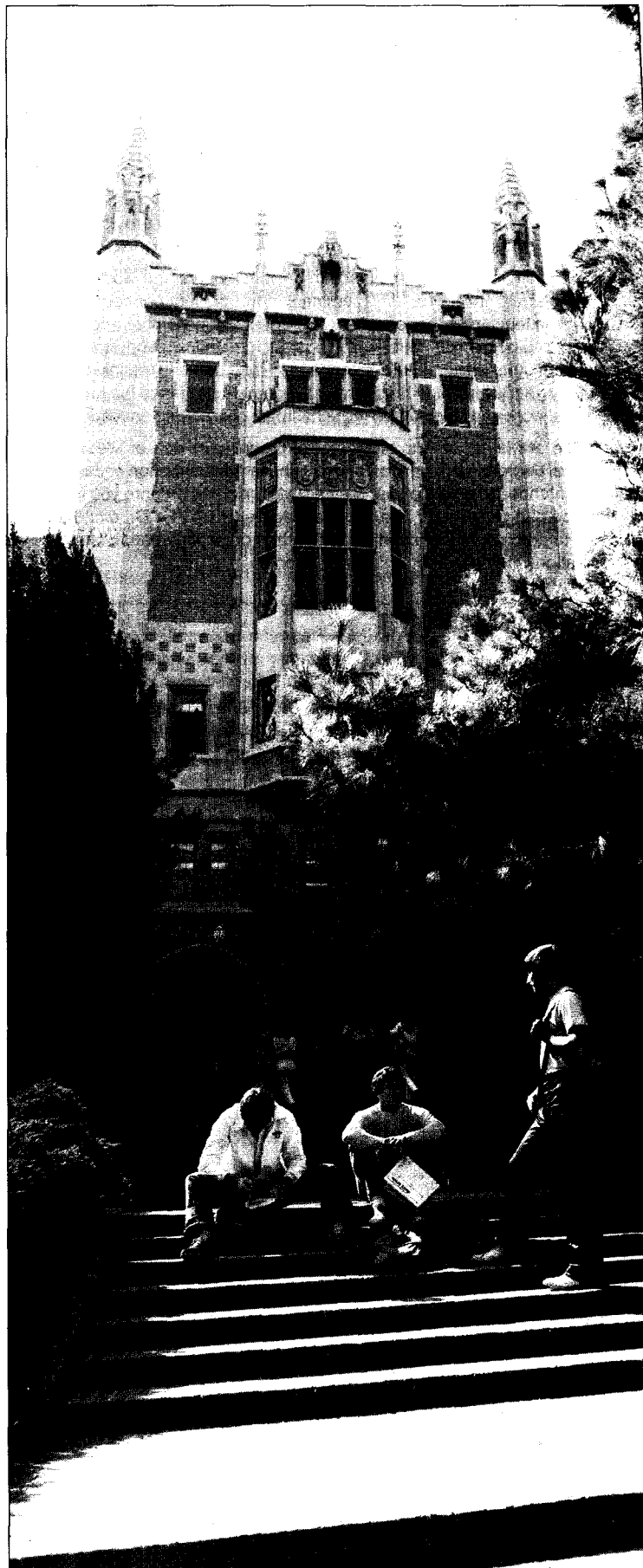
At UCLA only graduating seniors and selected juniors are elected to membership. The annual election is held in May, with the initiation in June. At present, the minimum GPA considered is 3.65 (for 140 or more UC units); the minimum number of UC units considered is 75 (students at the 75-unit level must have at least a 3.85 GPA). A reasonable distribution of courses in the humanities and sciences is also required. A Passed grade is computed approximately as a B, depending on number of courses taken and graded units. If you are elected, you will be notified by mail. For more information, contact Phi Beta Kappa in the Honors Programs Office, A311 Murphy Hall (310-825-0192).

### Outstanding Senior Award

The Outstanding Senior Award offers recognition to graduating seniors who have demonstrated scholastic excellence, creativity in the department, and outstanding service to the University and community. Nominations are accepted from November through the end of January, and awards are presented at the annual Alumni Awards Ceremony in June. For more information, contact the UCLA Alumni Association in the West Alumni Center, 325 Westwood Plaza (310-206-0523).

# Graduate Study

# 3



## Nature of Graduate Education

The principal characteristic of graduate study is the pursuit of new knowledge through research. At UCLA graduate students benefit from — and contribute to — the resources of one of the outstanding research universities in the country. A distinguished faculty committed to research and teaching, an extensive library system ranked among the best in the nation, and excellent research centers, institutes, and laboratories in virtually every major discipline (see details in Chapter 1) all provide an extraordinary scope of opportunities for graduate endeavor.

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

The degree of Master of Arts or Master of Science, or one of several professional degrees such as Master of Business Administration or Juris Doctor, is intended to develop your mastery of a field and prepare you for the practice of a profession. The doctoral degree (Ph.D., Ed.D., etc.) is designed to prepare you for creative activity and original research, often in association with college or university teaching.

## Administration

### The Graduate Division

The UCLA Graduate Division is responsible for administering policy established by the Academic Senate's Graduate Council for master's, doctoral, and professional degree programs other than those in law, medi-

cine, and dentistry. It oversees graduate recruitment and admissions, fellowships, teaching assistantships, graduate student researcher appointments, and other graduate student support, affirmative action, and the maintenance of high quality standards in all UCLA graduate programs. The dean of the Graduate Division also serves as vice chancellor — graduate programs.

### The Graduate Council

The Graduate Council is a standing committee of the UCLA Academic Senate. In keeping with the University's philosophy of shared governance, the council is responsible for the establishment of policy and standards for graduate education at UCLA; the approval, review, and monitoring of graduate degree programs; and recommendations regarding fellowships and assistantships.

### The Graduate Adviser

After admission to a department, program, or school, each graduate student is assigned a graduate adviser who assists the student in program planning and completing degree requirements. The graduate adviser is available for counseling whenever needed; departments usually require at least one student consultation each term. When the master's or doctoral committee is established, the faculty chair of that committee often assumes the adviser's role.

### Graduate Students Association (GSA)

UCLA's Graduate Students Association (GSA) shares an equal voice with the Undergraduate Students Association in the governance of the Associated Students. For more details on the GSA, see "Student Activities" in Chapter 1.



# Graduate Admission

Information:  
Graduate Admissions Office  
1247 Murphy Hall  
(310) 825-1711

## Admission Requirements

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

**International applicants** who have completed their postsecondary education outside the U.S. are expected to hold a degree, with above average scholarship, from a non-U.S. university or university-level institution. If your examinations have been graded Excellent, Very Good, Good, and Pass, you must have at least a Very Good general rating to qualify for admission. Students who hold a three-year ordinary or pass degree, or who hold a professional diploma in accounting, business, librarianship, social work, physical education, health education, etc., or a four-year degree, diploma, or higher certificate from a technical, vocational, or postsecondary specialized school, *should not apply for graduate admission*. Persons with memberships in professional associations such as Institutes of Chartered Accountants, the Institute of Chartered Secretaries and Administrators, etc., also do not qualify for graduate admission.

Meeting the minimum requirements does not ensure graduate admission, which is limited by the number of places available in UCLA's schools, college, and departments. Applications are evaluated in terms of scholastic qualifications and formal preparation for the graduate field of study. Departments may have special requirements for admission, which are included under individual departmental listings in this catalog.

## Applying for Admission

Graduate students at UCLA must submit the 1993-94 *Application for Graduate Admission* to UCLA Graduate Application Processing, P.O. Box 23895, Oakland, CA 94623-0895. You may obtain this form, in person or by mail, from your prospective school or department.

Applications are generally accepted for Fall, Winter, and Spring Quarters, although some departments limit admission to Fall Quarter due to course sequencing. Such restrictions are stated in this catalog's departmental listings and in the application packet. Enrollment in Summer Sessions courses does not constitute admission to graduate standing.

Applications and supporting papers should be on file by the following dates (if the dates below fall on a weekend or holiday, the next working day applies):

December 15, 1992, for Fall Quarter 1993  
October 1, 1993, for Winter Quarter 1994  
December 29, 1993, for Spring Quarter 1994  
December 15, 1993, for Fall Quarter 1994

Applications postmarked after these dates will be considered only when enrollment and funding limitations permit.

**Supporting papers** and materials to be submitted, including official transcripts of record and a \$40 nonrefundable application fee, are specified in the application packet. Submitted materials are not returnable.

**Graduate Record Examination** — If you are applying for admission to a department or school which requires Graduate Record Examination (GRE) scores, you should arrange to take the examination no later than February so your scores arrive on time. **GRE scores should be sent directly to your prospective department and not to the Graduate Division.**

### 1993-94 GRE Test Dates

October 9, 1993	February 5, 1994
December 11, 1993	April 9, 1994
June 4, 1994 (general only)	

GRE applications and information are available from offices of the Educational Testing Service, either at CN 6000, Princeton, NJ 08541-6000, or at 1947 Center Street, Berkeley, CA 94704. For information on GRE Fee Waivers, write to the associate program director at the New Jersey address.

**Letters of Recommendation** — Most graduate professional schools, departments, and interdepartmental programs at UCLA require applicants to submit three letters of recommendation. Letters typically augment, validate, or explain information provided in the application and should be written by people qualified to analyze your abilities and academic promise. In some cases, these letters may mean the difference between acceptance and rejection. Letters should be sent directly to the prospective department. Forms to be used are included in the application packet.

## Mandatory Medical Insurance Requirement

UCLA requires, as a condition of registration, that all graduate students and all international students on nonimmigrant visas have *adequate* medical insurance coverage during all periods of enrollment. See "Mandatory Medical Insurance Requirement" in the "Graduate Registration and Enrollment" section later in this chapter for a description of what constitutes adequate medical insurance. Most travel insurance plans are NOT acceptable; medical insurance plans from foreign countries (including Canada) also are NOT acceptable.

UCLA offers a student Medical Insurance Plan (MIP) which fulfills the requirement. For graduate students the MIP fee is included each term in the fee assessment total on the UCLA Fee Statement portion of the Registration Form. This is the only method by which MIP can be purchased.

If you decide to waive out of MIP because you have adequate private medical insurance, you must complete the Medical Insurance Waiver Request included with your registration materials each term and submit the form when you pay your registration fees. For further information on MIP or adequate medical insurance requirements, call the Student Health Service Insurance Office at (310) 825-1856.

## International Applicants

Applicants who have credentials from universities and colleges in foreign countries should submit applications at least two months before the

(continued on page 56)

# Graduate Majors and Degrees

SCHOOLS, DEPARTMENTS/ MAJORS	DEGREES	OTHER
African Area Studies	M.A.	
Afro-American Studies	M.A.	
American Indian Studies	M.A.	
Anatomy and Cell Biology	M.S., C.Phil., Ph.D.	
Anesthesiology		
Nurse Anesthesia	M.S.	
Anthropology	M.A., Ph.D.	
Applied Linguistics	C.Phil., Ph.D.	
Archaeology	M.A., C.Phil., Ph.D.	
Architecture and Urban Planning		
Architecture	M.Arch. I, M.Arch. II, M.A., Ph.D.	
Urban Planning	M.A., Ph.D.	
Art	M.A., M.F.A.	
Art History	M.A., Ph.D.	
Asian American Studies	M.A.	
Astronomy	M.S., M.A.T.*, Ph.D.	
Atmospheric Sciences	M.S., C.Phil., Ph.D.	
Biological Chemistry	M.S.***, Ph.D.	
Biology	M.A., C.Phil., Ph.D.	
Biomathematics	M.S., Ph.D.	
Chemistry and Biochemistry		
Biochemistry	M.S., C.Phil., Ph.D.	
Chemistry	M.S., C.Phil., Ph.D.	
Classics	M.A., C.Phil., Ph.D.	
Greek	M.A.	
Latin	M.A.	
Comparative Literature	M.A., C.Phil., Ph.D.	
Dance	M.A., M.F.A.	
Dance/Movement Therapy	M.A.	
Dentistry	D.D.S.	Postgraduate Certificate Programs
Oral Biology	M.S., Ph.D.	
Design	M.A., M.F.A.	
Earth and Space Sciences		
Geochemistry	M.S., C.Phil., Ph.D.	
Geology	M.S., C.Phil., Ph.D.	
Geophysics and Space Physics	M.S., Ph.D.	
East Asian Languages and Cultures	M.A., C.Phil., Ph.D.	
Economics	M.A., C.Phil., Ph.D.	
Education	M.Ed., M.A., Ed.D., Ph.D.	Credential Programs in Multiple and Single Subject Instruction, Bilingual Emphasis, Pupil Personnel Services, Administrative Services, School Psychologist
Special Education	Joint Ph.D. with Cal State University, L.A.	
Engineering and Applied Science	—	Certificate of Specialization (Engineering and Applied Science)
Aerospace Engineering	M.S., Ph.D.	
Chemical Engineering	M.S., Ph.D.	
Civil Engineering	M.S., Ph.D.	
Computer Science	M.S., Ph.D.	
Electrical Engineering	M.S., Ph.D.	
Engineering	M.S., M.Engr., Engr., Ph.D.	
Manufacturing Engineering	M.S.	
Materials Science and Engineering	M.S., Ph.D.	
Mechanical Engineering	M.S., Ph.D.	
Nuclear Engineering	M.S., Ph.D.	
English	M.A., C.Phil., Ph.D.	
Environmental Science and Engineering	D.Env.	
Ethnomusicology and Systematic Musicology		
Ethnomusicology	M.A., C.Phil., Ph.D.	
Film and Television	M.A., M.F.A., C.Phil., Ph.D.	

\*Not admitting new students at this time.

\*\*The department only admits applicants whose objective is the Ph.D.

SCHOOLS, DEPARTMENTS/ MAJORS	DEGREES	OTHER
Folklore and Mythology	M.A., Ph.D.	
French	M.A., C.Phil., Ph.D.	
Geography	M.A., C.Phil., Ph.D.	
Germanic Languages	C.Phil., Ph.D.	
German	M.A.	
Scandinavian	M.A.	
History	M.A., C.Phil., Ph.D.	
Indo-European Studies	C.Phil., Ph.D.	
Islamic Studies	M.A., C.Phil., Ph.D.	
Italian	M.A., C.Phil., Ph.D.	
Latin American Studies	M.A.	
Law	J.D., LL.M.	
Library and Information Science	M.L.S., Ph.D.	Certificate of Specialization Program
Linguistics	M.A., C.Phil., Ph.D.	
Management	M.B.A., Executive M.B.A., M.S., C.Phil., Ph.D.	
Mathematics	M.A., M.A.T., C.Phil., Ph.D.	
Medicine	M.D.	Certificates of Postgraduate Medical Study
Microbiology and Immunology	M.S.*, Ph.D.	
Microbiology and Molecular Genetics	M.A., Ph.D.	
Molecular Biology	Ph.D.	
Music	M.A., M.F.A. (Performance Practices), C.Phil., Ph.D.	
Musicology	M.A., C.Phil., Ph.D.	
Near Eastern Languages and Cultures	M.A., C.Phil., Ph.D.	
Neuroscience	Ph.D.	
Nursing	M.N., D.N.Sc.	
Pathology and Laboratory Medicine		
Experimental Pathology	M.S., Ph.D.	
Pharmacology	M.S.*, Ph.D.	
Philosophy	M.A.*, C.Phil., Ph.D.	
Physics	M.S.*, M.A.T., Ph.D.	
Physiological Science	M.S., Ph.D.	
Physiology	M.S.*, Ph.D.	
Political Science	M.A., C.Phil., Ph.D.	
Public Administration	M.P.A.**	
Psychiatry and Biobehavioral Sciences	—	Certificate Program in Clinical Psychology Internship
Psychology	M.A.*, C.Phil., Ph.D.	
Public Health	M.P.H., M.S., Dr.P.H., Ph.D.	
Biostatistics	M.S., Ph.D.	
Environmental Health Sciences	M.S., Ph.D.	
Epidemiology	M.S., Ph.D.	
Health Services	M.S., Ph.D.	
Preventive Medicine and Public Health	M.S.**	
Radiological Sciences		
Biomedical Physics	M.S., Ph.D.	
Romance Linguistics and Literature	M.A., C.Phil., Ph.D.	
Slavic Languages and Literatures	M.A., C.Phil., Ph.D.	
Social Welfare	M.S.W., Ph.D.	
Sociology	M.A., C.Phil., Ph.D.	
Spanish and Portuguese		
Hispanic Languages and Literatures	C.Phil., Ph.D.	
Portuguese	M.A.	
Spanish	M.A.	
Teaching English as a Second Language and Applied Linguistics		
Teaching English as a Second Language	M.A.	Certificate Program
Theater	M.A., M.F.A., C.Phil., Ph.D.	

\*The department only admits applicants whose objective is the Ph.D.

\*\*Not admitting new students at this time.



dates listed on page 53. International applicants should have an academic degree or professional title earned at a university and will be evaluated on the basis of grades (marks) and class or rank achieved. You should submit official transcripts of record, in duplicate, for all college and university work. Specific instructions are given in the application packet.

### Proficiency in English

**Test of English as a Foreign Language (TOEFL)** — International students who hold a bachelor's or higher degree from a university in a country where the official language is English and in which English is the spoken tongue and the medium of instruction, or who have completed at least two years of full-time study at such an institution, are exempt from both the TOEFL and the UCLA English as a Second Language Placement Examination (ESLPE). *All other applicants* must take the TOEFL, administered by the Educational Testing Service in some 95 foreign centers. Applications are available from the Educational Testing Service, CN 6000, Princeton, NJ 08541-6000.

**UCLA English as a Second Language Placement Examination (ESLPE)** — If your native language is not English, you are required to take the UCLA ESLPE (in addition to the TOEFL) before the term in which you are to register. Depending on your ESLPE results, you may have to complete one or more courses in the English as a Second Language 33 series, beginning in your first term in residence at UCLA. These courses must be passed with a grade of C or better if taken for a letter grade, or B or better if taken on an S/U basis. You should expect to spend a longer period of time at the University than would normally be necessary to complete a degree program if you are required to take any English as a second language courses. If you do not achieve a minimum score on the ESLPE, your admission is deferred until you have acquired the necessary proficiency in English. Neither the Test of English as a Foreign Language (TOEFL) nor any other English proficiency test can be submitted or accepted in lieu of the ESLPE.

**Test of Spoken English (TSE)** — If you are an international student and wish an appointment as a teaching assistant, you should take the Test of Spoken English offered at the TOEFL Center in your home country.

### No Degree Objective

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

### Duplication of Degrees

The University of California, in general, discourages the duplication of advanced degrees. At the same time, it recognizes that a professional degree does not duplicate an academic one, and that pressing needs may exist for degrees in different areas (see "Concurrent and Articulated Degree Programs" later in this chapter). If you are applying for a second academic degree at the same level or lower than the one you already hold, you are required to show compelling cause to the department. All degree requirements and University regulations apply just as they do for a first degree. Courses already applied to the earlier degree may not be applied to the second.

### Summer Sessions Courses

Enrollment in Summer Sessions courses does not constitute admission to graduate standing, nor does it substitute for the required continuous registration in Fall, Winter, and Spring Quarters. If you wish to apply

Summer Sessions courses to your subsequent graduate program, you should consult in advance with your departmental adviser. This is also true if you have been readmitted to graduate standing and you wish to resume graduate study in Summer Sessions. Information and applications are available from the Office of Summer Sessions, 1147 Murphy Hall. Also refer to the sections on "Academic Residence" and "Transfer of Credit" later in this chapter.

If you take Summer Sessions courses following the award of your bachelor's degree, the grades do not appear on your undergraduate transcript (they are included on a separate transcript). After you are accepted by the Graduate Division, your Summer Sessions grades are included on your graduate transcript and computed in your grade-point average.

### Readmission

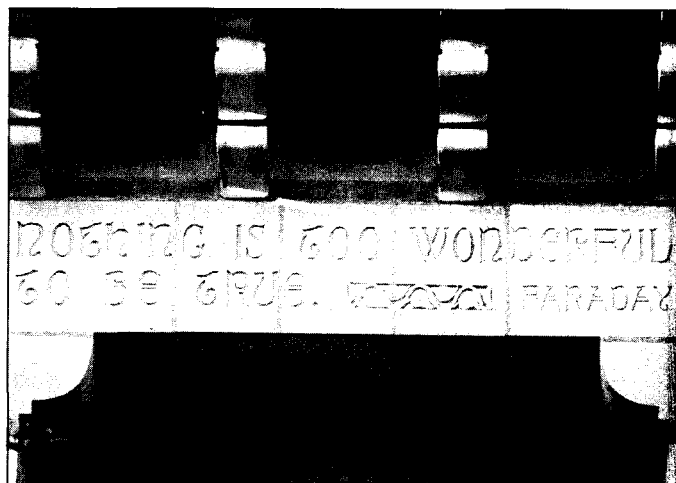
Students who are granted a formal leave of absence (see "Leaving UCLA" in Chapter 4) do not have to apply for readmission if they resume their graduate work in accordance with the terms of their leaves. All other continuing graduate students who fail to register for any regular session, or who fail to complete a term through cancellation or withdrawal, must compete for readmission with new applicants.

If you have registered at any time as a graduate student at UCLA and are returning after an absence (except a formal leave of absence), you must file an *Application for Graduate Admission*. Forms are available from the departments and should be submitted to UCLA Graduate Application Processing, P.O. Box 23895, Oakland, CA 94623-0895. The following materials must accompany the application:

- (1) A check or money order for \$40 (nonrefundable) made payable to The Regents of the University of California.
- (2) The Graduate Petition for Change of Major, if appropriate. (If you are reapplying in a new major, request this form along with the *Application for Graduate Admission*.) Your UCLA graduate transcript must also be submitted.
- (3) Transcripts of all academic work completed since your registration at UCLA as a graduate student.

### Admission to the Schools of Dentistry, Law, and Medicine

Applicants for M.S. and Ph.D. programs in departments of the School of Medicine or Dentistry should apply for admission to the Graduate Division as described above. For admission to D.D.S., J.D., and M.D. degree programs in the Schools of Dentistry, Law, and Medicine, write to the respective schools for their announcement booklets and for information and application procedures.



# Requirements for Graduate Degrees

UCLA offers instruction leading to a broad range of master's and doctoral degrees, both academic and professional. Graduate students earn master's or doctoral degrees through distinguished achievement in study and research. Achievement in study is evaluated by means of the qualifying and comprehensive examinations. Achievement in research is judged by the merits of the thesis or dissertation.

The doctorate, and specifically the Doctor of Philosophy degree, is awarded in recognition of a candidate's in-depth knowledge of a broad field of learning, and for demonstrated ability to make original and distinguished contributions to the field. More generally, the degree is an affidavit of critical aptitude in scholarship, imaginative enterprise in research, and proficiency and style in communication.

## University Minimum Standards

The requirements described here for master's and doctoral degrees are minimum standards set by the University. Individual schools or departments may set higher standards and may require additional courses

and/or examinations for their master's degree. Each department also sets additional requirements for doctoral degrees according to the demands of the field of study. You are advised to consult the appropriate school announcement or your departmental graduate adviser for details.

## Transfer of Credit

There are two general regulations governing transfer of credit. No courses completed before the award of the bachelor's degree may be applied toward a graduate degree unless you are a UCLA Departmental Scholar. Also, courses taken for any other degree may not be applied toward a master's degree at UCLA unless you are enrolled in a Graduate Council-approved concurrent degree program (see "Concurrent and Articulated Degree Programs" later in this chapter).

**From Within the University** — You may petition to have units and grade points for graduate work completed at other campuses of the University applied toward satisfaction of master's degree requirements at UCLA. Such courses may fulfill up to one half of both the total course and

### University Minimum Standards For Advanced Degrees\*

REQUIREMENT	MASTER'S DEGREE	DOCTORAL DEGREE
ACADEMIC RESIDENCE	One year (three terms) in graduate standing at University of California, two terms at UCLA.	Two years (six terms) in graduate standing at University of California, including three consecutive terms at UCLA.** In most cases a longer period of residence is necessary.
PROGRAM OF STUDY	Nine graduate and upper division courses (36 units) in graduate standing, including at least five graduate courses.	No specific course requirements. Program is planned with adviser and guidance committee.
SCHOLARSHIP	B average required in all courses taken in graduate standing at UC and in all courses applied toward the master's degree.	B average required in all courses taken in graduate standing at UC.
FOREIGN LANGUAGE	Requirements are determined by individual departments and programs.	Requirements are determined by individual departments and programs.
ADVANCEMENT TO CANDIDACY	All requirements for advancement, including foreign language examinations, must be satisfied. Forms must be filed by second week of the term in which degree is to be awarded.	The departmental written and University Oral Qualifying Examinations must be passed; departmental, course, and language requirements must be completed. Advancement is officially granted when you obtain your committee chair's signature, pay the \$50 fee, and return the application to the Graduate Division.
FINAL REQUIREMENT FOR THE DEGREE	Master's thesis or comprehensive examination (written, oral, or both).	Doctoral dissertation. A final oral examination in defense of the dissertation may also be required.

\*Individual departments and programs may set higher standards. Refer to departmental listings under the appropriate college or school chapter or consult your departmental graduate adviser for details.

\*\*If the master's degree was earned at UCLA, one year of residence will have been satisfied.

graduate course requirements, and one third of the academic residence requirement, but may not have been used to fulfill the requirements for another degree.

**From Outside the University** — With approval of the dean of the Graduate Division and your major department, courses completed with a grade of B or better in graduate standing at institutions outside the University of California may apply toward UCLA master's programs. However, courses taken for any degree awarded at another institution may not be applied toward a graduate degree at UCLA. A maximum of two courses (eight quarter units or five semester units) may be applied, but they cannot be used to reduce either the minimum graduate course requirement or the academic residence requirement. (To convert semester units into quarter units, multiply the semester units by 1.5 — e.g., 12 semester units  $\times$  1.5 = 18 quarter units. To convert quarter units into semester units, multiply the quarter units by .666 — e.g., 12 quarter units  $\times$  .666 = 7.99 or 8 semester units.)

**From Summer Sessions** — Regular session courses offered in UCLA Summer Sessions by regular faculty qualify for credit toward a higher degree with departmental approval. Courses offered by visiting faculty may apply, with a recommendation from the department chair. It is best to consult your departmental graduate adviser about applying Summer Sessions courses to your graduate program.

**From UCLA Extension** — Extension courses taken after July 1, 1969, can be applied only if they are **concurrent** courses prefixed by XLC (offered for students in degree programs and open to Extension students by petition) in the 100, 200, or 400 series, completed with a grade of B or better. By petition to the dean of the Graduate Division and with departmental approval, a maximum of two such courses may be applied toward the nine-course minimum and the five-graduate-course requirements for the master's degree. The master's program, then, would include at least three courses in the 200 or 500 series for academic degrees, or three courses in the 200, 400, or 500 series for professional degrees.

If your master's program requires more than nine courses, concurrent Extension courses may be applied toward one half of the course requirements over the minimum of nine.

Grades earned in Extension courses or in courses taken outside the University of California are not included in computing your grade-point average nor may they be used to remove scholarship deficiencies. Correspondence courses are not applicable to graduate degrees.

## Academic Residence

**Master's Degree** — The minimum residence requirement consists of three academic terms in graduate standing at the University of California, including at least two terms at UCLA.

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

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

You may earn one term of residence for summer study in either of these ways: (1) enroll in two six-week Summer Sessions taking at least two units of upper division and/or graduate work in each session OR (2) enroll in one eight-week session for at least four units of credit. Residence earned through Summer Sessions enrollment is limited to one third of the degree requirements.

To maintain satisfactory progress toward the degree, UCLA requires at least a B average in all courses taken in graduate standing at the University and in all courses applied toward a graduate degree, including those taken at another UC campus.

## Foreign Language Requirements

Foreign language requirements are determined by individual departments and programs. If your program has a language requirement, you should fulfill it either before you begin graduate study or as soon as possible thereafter. All foreign language requirements must be satisfied before advancement to candidacy.

Many departments require graduate degree candidates to demonstrate proficiency in one or more foreign languages, so that you can acquire broad knowledge in your field of study and keep abreast of foreign developments in the field. You are urged to complete language requirements as early as possible in your graduate career. If your department requires two or more foreign languages, you must complete at least one before the University Oral Qualifying Examination (unless your department requires that both be completed before the examination).

Depending on your department's regulations, you may fulfill foreign language requirements either by passing the Graduate School Foreign Language Test (GSFLT) in French, German, Russian, or Spanish or (in languages not offered by GSFLT) by passing examinations given by UCLA language departments. You may register for the examination at the UCLA Extension Cashier's Office, 10995 Le Conte Avenue. UCLA enrollment is not required. Consult UCLA Extension for registration procedures.

Some departments allow students to fulfill language requirements either by passing departmental examinations or by completing coursework in a foreign language. Certain departments may require additional languages, special competence, or other special procedures. In some departments, English satisfies the foreign language requirement if it is not your native language.

For further details on foreign language requirements, consult your departmental graduate adviser.

## Program of Study and Scholarship

### Master's Degree

At least nine graduate and upper division courses (or any number of fractional courses totaling 36 units) must be completed in graduate standing; at least five (20 units) of the nine must be graduate-level courses.

UCLA offers master's degrees under two plans: Plan I, the Master's Thesis, and Plan II, the Master's Comprehensive Examination. Some departments offer both plans, and you must consult with your department to determine the plan for meeting your degree requirements. University minimum requirements are the same under either plan.

### Master's Thesis (Plan I)

After advancement to candidacy (described on next page), students under Plan I must submit a thesis reporting on results of their original investigation of a problem. While the problem may be one of only limited scope, the thesis must show a significant style, organization, and depth of understanding of the subject.

A thesis committee, consisting of at least three faculty members who hold regular professorial appointments at the University, is nominated by the department and appointed by the dean of the Graduate Division for each student (consult the Graduate Division for more details on committee members' eligibility requirements). The thesis committee, which



must be appointed before you may be advanced to candidacy, approves the subject and plan of the thesis, provides the guidance necessary to complete it, then reads and approves the completed manuscript. Approval must be unanimous among committee members.

Once the thesis committee and other concerned faculty have approved the subject for the thesis, work may begin. You are responsible for preparing the thesis in the proper form and for observing filing deadlines.

#### **Master's Comprehensive Examination (Plan II)**

Following advancement to candidacy (described in next column), students under Plan II must pass a comprehensive examination administered by a committee consisting of at least three faculty members appointed by the department. In some departments the comprehensive examination may serve as a screening examination for admission to doctoral programs. Information concerning this examination and its format is available in your department.

#### **Doctoral Degree**

Doctoral programs are individualized and permit a high degree of specialization. The University does not specify course requirements for doctoral programs. Individual programs set their own requirements, which may include specific courses, and these must be completed before you take the University Oral Qualifying Examination. You will determine your course of study in consultation with a graduate adviser until the doctoral committee is appointed.

#### **Doctoral Examinations before Advancement to Candidacy**

Prior to advancement to candidacy, doctoral candidates fulfill the coursework, teaching, and/or examinations required by the major department or group. You are supervised during this period by a departmental adviser and/or departmental guidance committee. This committee administers a departmental written and, in some cases, oral examination (not to be confused with the University Oral Qualifying Examination) after you complete the recommended or required work. Once all departmental and foreign language requirements are met, the department chair consults with you and then nominates a doctoral committee.

#### **University Oral Qualifying Examination**

The doctoral committee, consisting of at least four faculty members nominated by your department, is appointed by the dean of the Graduate Division (consult the Graduate Division for details on committee membership). To determine your qualifications for advancement to candidacy, the committee administers the University Oral Qualifying Examination and, at its option, a written examination.

#### **Advancement to Candidacy**

##### **Master's Degree**

When you have completed approximately half the program for the master's degree (usually at least two terms), you should formally apply for advancement to candidacy. Application forms are available from your

department and must be filed there no later than the second week of the term in which you expect to receive your degree (by the end of the second week of the first Summer Session for a September degree).

You may not be advanced to candidacy until all departmental requirements for advancement, including foreign language examinations, have been satisfied. You then have one year from the date of advancement to complete all requirements for the degree, including your thesis or comprehensive examination. Candidacy expires at the end of one year and reinstatement during the term in which you plan to receive the degree is by petition only.

### Doctoral Degree

You are eligible for advancement to doctoral candidacy after passing the University Oral Qualifying Examination with no more than one negative vote, completing four terms of academic residence and any additional departmental requirements, and maintaining a 3.0 grade-point average in graduate standing. You must complete the application for candidacy form sent to you by the Registrar's Office, have it signed by your doctoral committee chair, pay a \$50 advancement to candidacy fee, and submit the form to the Graduate Division, Student and Academic Affairs Section. You are officially advanced to candidacy on the date the completed form is submitted.

### Candidate in Philosophy Degree

In several departments, as approved by the Graduate Council, the intermediate degree of Candidate in Philosophy (C.Phil.) is awarded to qualified students on advancement to candidacy for the Ph.D. degree.

The C.Phil. is not a terminal degree but gives formal recognition to a definite state of progress toward the doctorate. Academic requirements are the same as for advancement to candidacy for the Ph.D. (see above). Four terms in academic residence at UCLA are required. (Also refer to "Academic Residence" earlier in this chapter.)

The C.Phil. may not be conferred after or simultaneously with the Ph.D. For departments offering the C.Phil., see the degree chart at the beginning of this chapter. For further details, consult the Graduate Division.

### Doctoral Dissertation

Once the doctoral committee approves the subject for your dissertation, the in-candidacy stage of the doctoral program begins and is devoted primarily to independent study and research and to the preparation of the dissertation, which demonstrates your ability for independent investigation. The doctoral committee guides your progress toward its completion. You are responsible for following instructions on the preparation of the dissertation and for observing filing deadlines.

### Final Preparation and Filing of Thesis or Dissertation

For guidance in the final preparation of the thesis or in the preparation and submission of the dissertation and accompanying abstract, you may:

- (1) Consult the theses and dissertations adviser, Office of the University Archivist, 390 Powell Library.
- (2) Read *Regulations for Thesis and Dissertation Preparation*, available in the Graduate Division, Student and Academic Affairs Section, or in the Archivist's Office.
- (3) Attend an orientation meeting on manuscript preparation and filing procedures conducted soon after the start of each term (see the Calendar at the beginning of this catalog).

**Master's Thesis** — When all members of the committee have approved the thesis and you are ready to file it, you must initiate the final steps in the process by submitting the original signature (approval) page, title page, and any other required forms to the Graduate Division, Student and Academic Affairs Section, where completion of degree requirements

will be verified. After final approval by the dean of the Graduate Division, you must file the thesis with the theses and dissertations adviser by the published deadline (approximately two weeks before the degree is to be awarded).

**Doctoral Dissertation** — When all members of the committee have approved the dissertation and you are ready to file it, you must submit the original signature (approval) page and title page to the Graduate Division, Student and Academic Affairs Section, where completion of degree requirements will be verified. After final approval by the dean of the Graduate Division, you must file two paper copies of the dissertation with the theses and dissertations adviser by the published deadline (approximately two weeks before the degree is to be awarded).

Deadlines for this academic year are:

December 6 for Fall Quarter 1993  
March 14 for Winter Quarter 1994  
June 6 for Spring Quarter 1994

### Doctoral Final Oral Examination

A final oral examination may be required at the option of any member of the doctoral committee, and in some departments is required of all doctoral candidates. The examination, for which all committee members must be present, may be held before you have prepared the final copy of your dissertation, but passing the examination (with no more than one negative vote of the committee members) does not imply approval of the final manuscript. Consult your doctoral committee chair or graduate adviser for further information.

## Interdepartmental Degree Programs

In addition to graduate degree programs offered within schools and departments, UCLA offers interdisciplinary programs involving two or more participating departments. A total of 27 interdepartmental programs offer bachelor's, master's, and doctoral degrees in some combination; several units offer all three degrees. These programs are administered by interdepartmental committees made up of faculty whose membership is determined by research interest, not by departmental affiliation. By cutting across the usual lines of faculty division, a subject area is studied from the perspectives of different disciplines and a greater degree of program flexibility is achieved.

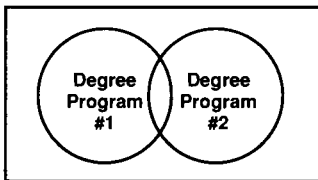
Interdepartmental degree programs which currently lead to advanced degrees are listed below. All are described more fully in Chapter 5 on the College of Letters and Science, with the exceptions of Environmental Science and Engineering which is in the School of Public Health (Chapter 18) and Neuroscience which is in the School of Medicine (Chapter 16). For further information, contact the chair or graduate adviser of the specific program that interests you.

African Area Studies (M.A.)  
Afro-American Studies (M.A.)  
American Indian Studies (M.A.)  
Applied Linguistics (Ph.D.)  
Archaeology (M.A., Ph.D.)  
Asian American Studies (M.A.)  
Comparative Literature (M.A., Ph.D.)  
Environmental Science and Engineering (D.Env.)  
Folklore and Mythology (M.A., Ph.D.)  
Indo-European Studies (Ph.D.)  
Islamic Studies (M.A., Ph.D.)  
Latin American Studies (M.A.)  
Molecular Biology (Ph.D.)  
Neuroscience (Ph.D.)  
Romance Linguistics and Literature (M.A., Ph.D.)

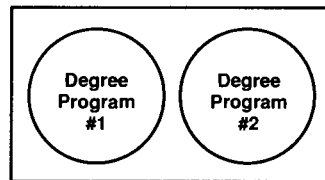
## Concurrent and Articulated Degree Programs

Each of the programs described thus far leads to a single degree — either master's or doctoral. UCLA also offers concurrent and articulated degree programs, which allow you to earn two degrees simultaneously by combining two free-standing degree programs into a coordinated course of study. You may petition to design your own articulated program (with departmental and Graduate Division approval), but you may not apply credits for one degree to the other. Concurrent degree programs, which may not be individually designed, allow some credit overlap.

These programs accomplish several important objectives: they enable the University to respond to societal changes by creating new fields of study; they prepare students more fully for the world's complexities by combining the cultural (political/social/economic) aspects of their field with the tools of a professional degree; and they allow faculty members to cross departmental lines and interact on a broader scale.



**Concurrent Degree Program**  
(Certain courses may apply to both degrees)



**Articulated Degree Program**  
(No credit overlap)

**Concurrent** degree programs, by allowing a specified amount of credit to apply to both degrees, permit students to reduce the total number of courses required for the two degrees and thereby reduce the time normally required if courses were taken in sequence. Programs leading to concurrent degrees are offered in the following disciplines:

Education, M.A., Ph.D., M.Ed., or Ed.D. — Law, J.D.  
History, M.A. — Library and Information Science, M.L.S.

Latin American Studies, Interdepartmental M.A. — Urban Planning, M.A.  
Management, M.B.A. — Computer Science, M.S. (School of Engineering and Applied Science)  
Management, M.B.A. — Latin American Studies, Interdepartmental M.A.  
Management, M.B.A. — Law, J.D.  
Management, M.B.A. — Library and Information Science, M.L.S.  
Management, M.B.A. — Nursing, M.N.  
Management, M.B.A. — Public Health, M.P.H.  
Management, M.B.A. — Urban Planning, M.A.  
Urban Planning, M.A. — Law, J.D.

**Articulated** degree programs permit no credit overlap, and students must complete degree requirements separately for each degree. Programs leading to articulated degrees are offered in the following disciplines:

African Area Studies, Interdepartmental M.A. — Public Health, M.P.H.  
African Area Studies, Interdepartmental M.A. — Film and Television, M.F.A.  
Latin American Studies, Interdepartmental M.A. — Education, M.Ed. in Curriculum  
Latin American Studies, Interdepartmental M.A. — Engineering, M.S.  
Latin American Studies, Interdepartmental M.A. — Library and Information Science, M.L.S.  
Latin American Studies, Interdepartmental M.A. — Public Health, M.P.H.  
Medicine, M.D. — Graduate Division health science major, Ph.D.  
Oral Biology, M.S. — Dentistry, D.D.S. or Certificate

Inquiries about concurrent and articulated degree programs should be directed to graduate advisers in the departments and schools involved. Contact the Graduate Division, Student and Academic Affairs Section, for information on designing your own articulated program.



# Graduate Registration and Enrollment

## Information:

Registration/Enrollment Office  
1113 Murphy Hall  
(310) 825-1091

**Detailed information on registration (fee payment) and enrollment procedures is contained in the quarterly *Schedule of Classes*, available for purchase at the Students' Store several weeks before the beginning of each term. To obtain a copy by mail, write to ASUCLA Students' Store, 308 Westwood Plaza, Los Angeles, CA 90024-1645, Attn: Mail Out. Include a check or money order for \$4.50 payable to ASUCLA.**

Registration consists of paying fees and enrolling in classes. The Registration Form, issued by the Registrar, is used for paying fees and provides information on enrollment in classes by telephone. You must complete both processes by the established deadlines to be officially registered and enrolled for the term.

Advance payment is required of all eligible students. Payments may be mailed or deposited in the Main Cashier's Drop Slot (1125 Murphy Hall) during the published payment period. Payments submitted after the published fee deadline must be made in person at 1125 Murphy Hall and will be assessed an additional \$50 late payment fee. Students on financial aid may be eligible for a waiver of the \$50 fee if funds are delayed by the University.

### Deadline Dates

(Tentative only; consult *Schedule of Classes* for firm dates.)

#### Fee Payment Deadlines:

September 3 for Fall Quarter 1993  
December 3 for Winter Quarter 1994  
March 4 for Spring Quarter 1994

#### Classes Dropped for Failure to Pay Registration Fees:

October 8 for Fall Quarter 1993  
January 14 for Winter Quarter 1994  
April 8 for Spring Quarter 1994

## Mandatory Medical Insurance Requirement

UCLA requires, as a condition of registration, that all graduate students and all international students on nonimmigrant visas have *adequate* medical insurance coverage during all periods of enrollment.

UCLA offers a student Medical Insurance Plan (MIP) which fulfills the requirement. For graduate students the MIP fee is included each term in the fee assessment total on the UCLA Fee Statement portion of the Registration Form. This is the only method by which MIP can be purchased.

If you decide to waive out of MIP because you have adequate private medical insurance, you must complete the Medical Insurance Waiver Request included with your registration materials each term and submit the form when you pay your registration fees.

**An adequate private medical insurance plan must provide all of the following *minimum* benefits:**

(1) A *minimum* of \$50,000 in "Lifetime Maximum" benefits.

(2) At least 75 percent of the cost for eligible medical expenses, with no more than a 25 percent out-of-pocket cost to you (patient copayment).

(3) A claims representative located in the U.S. In addition, you must be provided with an identification card (or reasonable alternative) written in English, which includes payment provisions listed in U.S. dollars and the U.S. telephone number of the U.S. claims representative.

If your private medical insurance plan does not meet all of the above requirements, you must purchase MIP. For further information on MIP or adequate medical insurance requirements, call the Student Health Service Insurance Office at (310) 825-1856.

## Enrollment in Classes

The quarterly *Schedule of Classes* contains up-to-date listings of class times, meeting rooms, instructors, and all information necessary for enrolling in classes. Using the *Schedule* and with the aid of academic counseling from your school or college advisers, you can assemble a program of courses.

## University Records System Access (URSA)

URSA (310-208-0425) enables all UCLA students to acquire information via a touch-tone telephone from their University academic records stored on the Registrar's Student Records System computer data base.

URSA allows you to process your class enrollment, to obtain course confirmation (including day/time, location, instructor name), UCLA grades for any completed term, GPA, completed units, and outstanding holds (i.e., restrictions from receiving services), and to confirm registration fee payment and Registration Card mailing.

URSA is operational Monday through Saturday from 7 a.m. to midnight, including holidays. You may access the system for grades, GPA, units, and holds information for up to 10 years after your graduation or your last term of attendance. If you have outstanding holds, you will be informed at the beginning of your call.

## Telephone Enrollment

By using URSA, you can enroll in classes, add, drop, or exchange classes/sections, put yourself on the wait list for a class, change the grading basis for a class (i.e., Satisfactory/Unsatisfactory), obtain a reading of your Study List, check your wait-list position, and obtain instructor names for all courses. You enroll during the appointment periods printed on your Registration Form. Consult the *Schedule of Classes* for full enrollment details.

## In-Person Enrollment

For classes that require written approval or specialized processing, you may enroll at computer terminals at 1113 Murphy Hall Monday through Friday from 9 a.m. to 5 p.m.

## Study Lists

On Friday of the second week of instruction the Study List of enrolled courses becomes "official," and all wait lists are eliminated. You should obtain a reading of your Study List through URSA after all enrollment transactions. **You are responsible for all courses and the grading basis as listed on URSA, and you cannot receive credit for courses not listed.** Errors or omissions should be corrected before your academic dean's deadline for changes by petition. Unapproved withdrawal from or neglect of a course entered on the Study List will result in a failing grade.

Beginning with the third week of instruction, changes to your Official Study List require an Enrollment Petition which is available for purchase in the school supplies section at any ASUCLA Students' Store or at your department office. Approval signatures are required before processing.

## Change of Major

Continuing graduate students may petition for a change of major after discussing plans with the new department. Forms for this purpose are available from the departments and should be filed with the Graduate Division, Student and Academic Affairs Section, 1255 Murphy Hall. Deadlines are generally the same as those for the graduate admissions procedure, but you should consult with the adviser in the new program before filing an application.

## Full-Time Graduate Program

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

Throughout their appointments, **teaching assistants** are required to be registered and enrolled in at least eight quarter units and **graduate student researchers** in at least 12 quarter units. Those assistants/researchers who take a leave of absence, or withdraw, terminate their appointments. Course 375 for teaching assistants and independent studies at the 500 level for graduate student researchers may be included in reaching the eight- or 12-unit load.

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

**Veterans** are required to make normal progress toward the degree as stated by the major department. Information on Veterans Administration regulations is available from Academic Record Services, 1134 Murphy Hall.

## Continuous Registration

Graduate students are normally required to register in all three terms of each academic year, including the term in which their degrees or certificates are to be awarded. If you are granted a formal leave of absence or are eligible to pay the filing fee for a degree (see next column), you are exempt from this requirement. You must be registered in order to receive financial aid, use University facilities, or take any University examination except the master's comprehensive or doctoral final oral examination.

If you fail to register or to file for an official leave of absence by the end of the second week of instruction, you are assumed to have withdrawn from UCLA. You will then have to reapply and compete for readmission with all other graduate applicants if you wish to return to graduate study at UCLA.

Continuing graduate students studying or doing research outside California throughout a term may pay half the registration fee, plus all other fees in full. Petitions for the reduced fee are available from your department.

## Employment and Degree Progress

Policy governing the employment of graduate students considers you primarily as a student rather than an employee and emphasizes your need to make timely progress toward your degree. You are limited to a maximum of 12 quarters of appointment in academic apprentice teaching titles and a maximum of 18 quarters in a combination of academic apprentice teaching and research titles. Appointment to any title limits your employment maximum to 50 percent time during the academic year.

University policy prohibits the employment of graduate students in academic titles. This policy was established to ensure that you (1) make timely progress toward your degree, (2) not be subject to the conflicting roles of student and faculty member, and (3) not be involved in the instruction of your peers.

## Registration in the Final Term for Award of the Degree

(1) You must register in the final term in which the degree is to be conferred if you are (a) completing coursework, (b) using library or other University facilities, (c) taking up faculty time other than for a final reading of the thesis or dissertation or to administer the comprehensive or final examination, (d) a doctoral student and were not registered the term immediately preceding the term in which your dissertation is filed, or (e) receiving University funds in the form of a fellowship or appointment as a teaching assistant, reader, or graduate student researcher. If you were not continuously registered or on leave of absence and you are required to register to receive your degree, you must apply for readmission.

(2) If only the thesis or dissertation and/or comprehensive or final examination remain to be completed in your final term, you may be eligible to pay the filing fee instead of registering (see below).

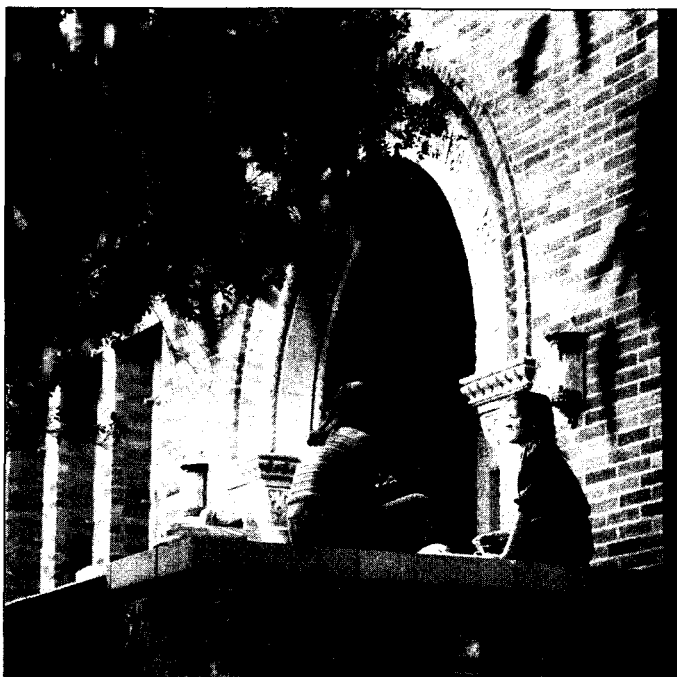
(3) If you were registered in the preceding term and have completed all degree requirements, including final examinations and filing your thesis/dissertation, during the interval between terms and before the first day of instruction, you are not required to register (or pay the filing fee) to receive your degree at the end of the following term.

## The Filing Fee

If you have completed all requirements for a degree except filing the thesis or dissertation and/or taking the master's comprehensive or doctoral final oral examination, you may be eligible to pay a filing fee of half the registration fee instead of registering and paying all required fees. Applications are available from the Graduate Division, Student and Academic Affairs Section, 1255 Murphy Hall. For eligibility conditions and further information on the filing fee and registration in the final term, please consult *Standards and Procedures for Graduate Study at UCLA*, available in 1255 Murphy Hall or in individual departments.

## Health Evaluation

New students enrolling in the School of Dentistry, Education, Medicine, Nursing, or Social Welfare must complete and return to the Student Health Service the Health Evaluation forms provided by their departments. For clearance information, call (310) 825-0861.





# Graduate Fees and Financial Support

## Fees

Although the exact cost of attending UCLA will vary according to your academic program, personal habits, tastes, and financial resources, there are some fees that all UCLA students must pay. Each entering and readmitted student is required to submit a Statement of Legal Residence to the Registrar's Office. Legal residents of California are not required to pay tuition at the University. Students classified as nonresidents must pay tuition of \$2,566 per term (for a full definition of residence and nonresidence, see the Appendix of this catalog).

At the time of registration each term, all graduate students (except Law and Medicine School students) must pay the following fixed fees. Students in the Schools of Law and Medicine should refer to their individual school announcements for explanation of fees per semester. **Fees for Fall Quarter 1993 are current as of publication date but are subject to change without notice by The Regents.**

### Term Expenses, Fall 1993

University registration fee .....	\$ 231.00
Educational fee .....	1,042.00
Ackerman Student Union fee .....	2.50
Graduate Students Association fee .....	5.50
Wooden Recreation Center fee .....	11.00
Mandatory medical insurance .....	192.00
<b>Total for California residents .....</b>	<b>\$1,484.00</b>
Nonresident tuition fee .....	\$2,566.00
<b>Total for nonresidents .....</b>	<b>\$4,050.00</b>

## Other Fees

Miscellaneous fees charged to UCLA graduate students include a \$50 charge for late payment of registration fees (after the fee deadline) or late filing of the Study List (after Friday of the second week of classes); \$25 for advancement to doctoral candidacy; and \$5 or less for most petitions and other special requests. A \$60 fine will be assessed if any check for registration fee payment is returned by a bank (i.e., stopped payment, insufficient funds, etc.). A complete list of fees may be found in the *Schedule of Classes*.

## Fee Refunds

Students who formally withdraw from the University during the first five weeks of instruction or take an approved leave of absence by the end of the second week of classes may receive partial refunds of fees. For the refund schedule and more information, see "Withdrawal" in Chapter 4 of this catalog or consult the *Schedule of Classes* for policy details and specific refund dates for each term.

## Nonresident Tuition Fellowships

A limited number of nonresident tuition fellowships are awarded each year to graduate students with distinguished academic records. Details of eligibility are available from your department.

## Living Expenses

Printed below are the estimated yearly budgets for graduate California residents. Nonresidents must add the \$7,699 annual tuition fee to their total expenses for an accurate estimate. Expenses cover the three regular session terms of the 1993-94 academic year and do not include Summer Sessions. (Budgets for the Schools of Medicine, Dentistry, and Nursing are higher, reflecting the expense of specialized books and supplies; figures are available from your health professions counselor.) The budgets are designed to serve as a guide and are subject to change.

## Estimated Annual Budgets for Graduate California Residents

	Commuter, Living in Parents' Home	Living in UCLA Residence Hall, Co-Op, Sorority, or Fraternity	Living in Off-Campus Apartment or House
University fees	\$ 4,087	\$ 4,087	\$ 4,087
Books and educational supplies	1,084	1,084	1,084
Food and rent	2,844	5,859	7,926
Transportation	2,580	1,705	2,540
Personal	—	1,902	896
<b>Total budget</b>	<b>\$10,595</b>	<b>\$14,637</b>	<b>\$16,533</b>

For more information on housing, see Chapter 1 or contact the UCLA Community Housing Office, 350 De Neve Drive (310-825-4491).

## Financial Support

### Information:

Graduate Student Support  
1252 Murphy Hall  
(310) 825-3521

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

Information on available funding for entering students is included in the *Application for Graduate Admission*. Readmitted students should also request the *Application for Graduate Admission*, and continuing graduate students should complete the Fellowship and Assistantship Application for Continuing Students. Completed applications must be returned by **January 7**. (Some departments have earlier deadlines; consult the application packet for details.)

*UCLA Graduate Student Support*, a booklet describing the full range of financial assistance available, is published annually and mailed to continuing students by the Graduate Division. Contact your department for more detailed information.

## Fellowships

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

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

## Assistantships

Academic apprenticeships train qualified students for careers in teaching and research, and compensate them for their services. **Teaching assistantships** provide experience in teaching undergraduates, with faculty supervision. (Teaching assistants, associates, and fellows are eligible to



receive partial payment at the beginning of the term in the form of an interest-free advance loan check. Interested students should apply to their departments.) **Graduate student researcher appointments** give students experience working on faculty-supervised research projects.

## In-Candidacy Fee Offset Grant Program

The In-Candidacy Fee Offset Grant Program pays the educational fee for eligible doctoral students who have been officially advanced to candidacy. This program is described in detail in *Standards and Procedures for Graduate Study at UCLA*, available in 1228 Murphy Hall or in individual departments.

## Graduate Affirmative Action Awards

Information:

Graduate Affirmative Affairs Office  
1248 Murphy Hall  
(310) 825-3829

These programs were established to increase the graduate enrollment and retention of students from groups which have traditionally been underrepresented in graduate education. These groups include American Indians, blacks/African Americans, Chicanos/Mexican Americans, Latinos/Hispanics, Pilipino Americans, and Puerto Ricans. In addition, women in the sciences and engineering, Asian American men in the arts, humanities, and social sciences, and Asian American women in all areas are eligible for many of these awards.

As indicated below, the Graduate Division offers one need-based financial aid program (GAP) and several fellowships to underrepresented students. Students may apply for both financial aid and fellowships simultaneously. All applicants for fellowships must be U.S. residents. For more information on these programs, contact the Graduate Affirmative Affairs Office, 1248 Murphy Hall (310-825-3829).

(1) **Dorothy Danforth Compton Fellowship Program** — UCLA is one of 10 universities selected by the Danforth Foundation for this program, which is jointly sponsored by the UCLA Office of the Chancellor. Initiated in 1981-82, it remains the most prestigious four-year fellowship available to underrepresented students. Fellowships are awarded to black/African American, Chicano/Mexican American, American Indian/Alaskan native, and Puerto Rican students committed to careers in college and university teaching. Students pursuing Ph.D. degrees in the humanities, social sciences, physical sciences, life sciences, and fine arts are eligible.

(2) **Project 88** — Funded jointly by the UCLA Office of the Chancellor, the Graduate Division, and participating departments and schools, this program awards four-year fellowships on a competitive basis to historically underrepresented students (American Indian/Alaskan native, black/African American, Chicano/Mexican American, Pilipino, and Puerto Rican) pursuing doctoral degrees. Asian American students pursuing doctoral degrees in the arts, humanities, and social sciences are also eligible.

(3) **Eugene Cota-Robles Fellowship** — This program is funded by the University of California Office of the President for entering Ph.D. students pursuing careers in research and teaching. All applicants must be U.S. citizens or permanent residents who are American Indian/Alaskan native, black/African American, Chicano/Mexican American, Latino/Hispanic, Pilipino, Asian American women (in all disciplines), and Asian American men in the social sciences and humanities. In addition, women in the physical and life sciences and engineering may apply regardless of ethnicity.

(4) **Graduate Opportunity Fellowship Program (GOFP)** — Funded by the University of California, this program provides fellowships to students from groups traditionally underrepresented in graduate programs and to women in fields such as engineering and the physical and life sciences.



(5) **Dorothy Danforth Compton Dissertation-Year Fellowship Program** — Funded by the Danforth Foundation, this program provides a one-year fellowship to support and encourage underrepresented students to complete the dissertation requirements for the Ph.D. degree. Students must be advanced to candidacy and within 12 months of completing all requirements for the Ph.D. The award provides a stipend, registration fees, and a research allowance.

(6) **Research Assistantship/Mentorship Program** — Funded by the University of California Office of the President, this program provides research assistantships for underrepresented students and is designed to encourage a close mentoring relationship between students and faculty members and to enhance research skills.

(7) **Dissertation-Year Fellowship Program** — Funded by the University of California Office of the President, this program supports and encourages University of California minority graduate students to complete the dissertation requirements for the Ph.D. degree and to enhance their qualifications as candidates for faculty teaching and research. The award provides a stipend, registration fees (including mandatory health insurance), and a research allowance.

(8) **Graduate Advancement Program (GAP)** — Awards are made on the basis of need as demonstrated by standard University financial aid criteria. These awards differ from conventional financial aid allocations in that GAP students receive a registration fee grant (nonresident tuition is not paid under this program) and a combination of loans and/or work-study.

## Awards Based on Financial Need

Because the cost of a graduate education may present a financial hardship, students who require assistance in meeting educational costs are encouraged to apply for aid based on their financial need. Need is defined as the difference between allowable school-related expenses and your financial resources. Financial aid applicants must file the Free Application for Federal Student Aid (FAFSA).

Financial aid awards include work-study and low-interest loans. Students are usually awarded a financial aid "package" which is a combination of these forms of assistance. Further information is available from the Financial Aid Office, A129J Murphy Hall.

# Special Programs and Training

## Graduate Cross-Enrollment Program with USC

As an integral part of an Academic Resource Sharing program linking UCLA with the University of Southern California, the Graduate Cross-Enrollment Program makes possible graduate student exchanges in many departments. The program is limited to specialized courses which would not otherwise be available to UCLA students and is in effect only during the regular academic year (not in summer).

If you have completed at least one term of graduate study at UCLA, are in good academic standing, and have obtained the necessary approvals, you may enroll in a 501 course through your department. When you have completed the course at USC, **your grade will be forwarded to UCLA** to be recorded on your transcript (S/U grading only). Only eight units of cross-enrollment courses may be applied toward requirements for the master's degree, and these courses may not be used to satisfy the five-graduate-course requirement. Applications, available from the Graduate Division, Student and Academic Affairs Section, 1255 Murphy Hall, should be completed before the start of the term in which the course is offered.

## Intercampus Exchange Program

If you have completed one term of graduate study at any campus of the University and are in good academic standing, you may attend another campus as an Intercampus Exchange Graduate Student with the approval of your department chair, the chair of the department or group in which you wish to study at the host campus, and the dean of the Graduate Division at both the home and host campuses. The privilege should be used only by students whose graduate study may be enhanced by work with certain faculty or use of facilities and resources accessible only at another campus.

Although you are considered to be in residence at your home campus, as an Intercampus Exchange Student you have library, health service, and recreation center privileges at the host campus. Grades are transferred to your home campus and entered on your official record.

Applications are available from the Graduate Division, Student and Academic Affairs Section, and should be filed at least four weeks before the beginning of the term in which you expect to enter the program. The program is available only during the regular academic year (not in summer).

Graduate students may also take advantage of the **Education Abroad** and **Education at Home Programs**, described in Chapter 1 of this catalog.

## Postdoctoral Fellows and Visiting Scholars

The University makes opportunities and facilities available to qualified scholars — those holding doctoral degrees or foreign equivalents — to continue advanced study and research under faculty guidance.

A postdoctoral fellow is one who (1) has been awarded a doctoral degree or the foreign equivalent where at least three years of undergraduate study are prerequisite to admission to the graduate program, (2) has been awarded a fellowship, traineeship, or equivalent support (including academic appointments such as postgraduate researcher) for studies at the postdoctoral level, and (3) is pursuing a program of research and training under the direction of a faculty member with the approval of the department or research unit, and by the dean of the Graduate Division. Enrollment as a postdoctoral fellow is normally for a period of one to three years and is limited to a period not to exceed five years. Interested candidates should make advance arrangements with the relevant department or research unit.

The same opportunities are made available to visiting scholars — senior scholars and distinguished visitors holding doctoral degrees or foreign equivalents — who wish to pursue independent research or advanced study at UCLA, working with a colleague for a limited time, normally no more than one year. Visiting scholars are distinguished from postdoctoral fellows in that they are not in training under faculty supervision but rather are themselves peers of our faculty, visiting from other universities and institutions. Visiting scholars ordinarily have adequate support funds from sources outside the University.

Further information on both postdoctoral fellows and visiting scholars is available from the Student and Academic Affairs Section, 1255 Murphy Hall.



# General Policies and Regulations

## Standards of Scholarship

To maintain satisfactory progress toward a graduate degree, UCLA requires at least a B (3.0) average in all courses taken in graduate standing at any campus of the University and in all courses applied toward advanced degrees. This standard applies to all graduate students, including candidates in certificate programs. In courses graded on an S/U basis, the grade of S (Satisfactory) is awarded for work which would otherwise receive a B or better. Grades S and U are not included in calculating grade-point averages.

## Scholarship Probation

You are on probation and are subject to dismissal if your cumulative average in all work attempted in graduate standing falls below a B (3.0) or if work in any two consecutive terms falls below a B average. The dean of the Graduate Division, in consultation with your department, determines your eligibility to continue graduate study in probationary status. If you are allowed to continue, you must make timely progress toward improving your grade-point average.

## Disqualification and Appeal

If you are subject to disqualification for reasons other than failure to maintain the minimum grade-point average, you will have your records reviewed by the Graduate Division, in consultation with the graduate adviser. If disqualification results, you may submit a written appeal to the dean of the Graduate Division for reconsideration. Contact the Student and Academic Affairs Section, 1255 Murphy Hall, for specific details on how to submit an appeal.

Appeals will be considered only if based on appropriate cause such as (1) procedural error, (2) judgments based on nonacademic criteria, (3) personal bias, or (4) specific mitigating circumstances contributing to performance. Alleged errors in academic judgment or evaluation are not considered appropriate causes for appeal.

In cases of appropriate cause, the dean of the Graduate Division refers the appeal to the Graduate Council's Committee on Degree Programs. You are required to submit a written statement on the basis for your

appeal and are entitled to a personal appearance before the committee. After obtaining information on the matter from any appropriate person or office, the committee makes a recommendation to the dean of the Graduate Division, who makes the final decision. In reporting the decision, the committee includes the basis for the decision, its effective date, and any specific recommendations.

## Graduate Student Complaints

Because of the separation of functions within the University, students are sometimes uncertain where they should direct their complaints. The following information may be helpful.

If you have complaints of a scholastic or professional nature involving faculty, you should take them up with the faculty member concerned or, if that is not feasible, with the chair of the department. If the department as a whole is involved, you should take the matter to the appropriate divisional or school dean. Should the issue not be resolved at that level, you may appeal to the dean of the Graduate Division, 1237 Murphy Hall.

Complaints of misconduct against individual students should be made at the Office of the Dean of Students, 1206 Murphy Hall. Complaints of misconduct against officially recognized student organizations may be made at the Center for Student Programming, 161 Kerckhoff Hall, or with the administrative officer, Student and Campus Life, 1104 Murphy Hall.

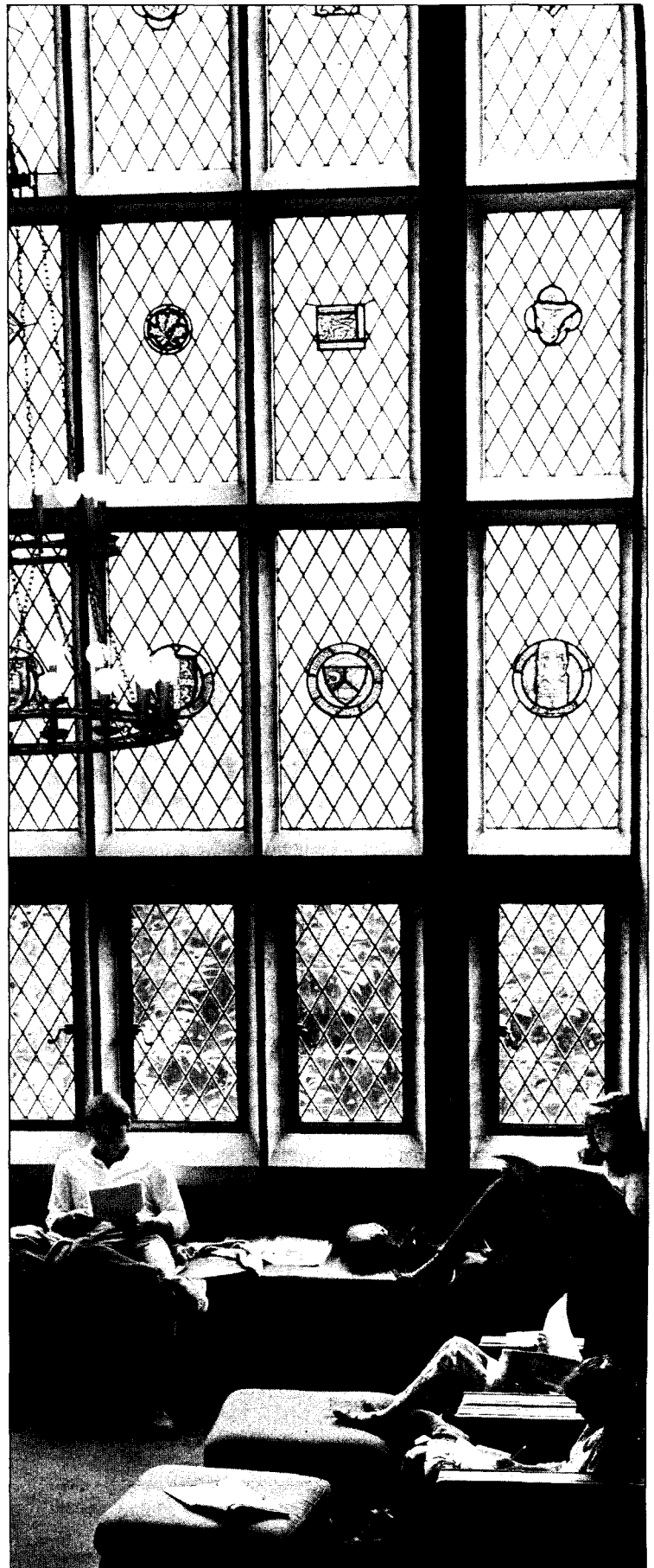
Complaints concerning alleged violation of the policies and regulations governing graduate study should be made to the dean or associate dean of the Graduate Division, 1237 Murphy Hall.

Complaints from teaching assistants about workloads and evaluations are governed by the provisions of the Teaching Assistant Grievance Procedures, which are spelled out in detail in the *Academic Apprentice Personnel Manual*. Copies are available from departments and from Graduate Student Support, 1252 Murphy Hall.

Complaints about a violation of University policy regarding the conduct of one or more faculty members should be handled as described in "Non-discrimination," "Harassment," and "Faculty Code of Conduct" in the Appendix.

# Academics

# 4



# Units and Grading Policy

**UCLA students are responsible for understanding the grading policies and regulations established by the Academic Senate. Should any semantic variations exist between explanations in this catalog and regulations in the *Manual of the Academic Senate*, the manual will prevail in all cases. Copies of the Senate manual are available for your review in the Academic Senate Office, 3125 Murphy Hall.**

## Grades

Instructors are required to assign a final grade for each student registered in a course. The following grades are used to report the quality of a student's work at UCLA:

### Undergraduate Students

A+ = Extraordinary  
 A = Superior  
 B = Good  
 C = Fair  
 D = Poor  
 F = Failure  
 P = Passed (achievement at grade C level or better)  
 NP = Not Passed  
 I = Incomplete  
 IP = In Progress  
 DR = Deferred Report

### Graduate Students

A = Superior Achievement  
 B = Satisfactorily demonstrates potential for professional achievement  
 C = Passed but work does not indicate potential for professional achievement  
 F = Failure  
 S = Satisfactory (achievement at grade B level or better)  
 U = Unsatisfactory  
 I = Incomplete  
 IP = In Progress  
 DR = Deferred Report

**For Undergraduate Students** — The grades A, B, C, and D may be modified by a plus (+) or minus (–) suffix, to either raise or lower your grade-point average. The A+ grade will **not** raise your grade-point average because it carries the same number of grade points as the A grade. The grades A, B, C, and P denote satisfactory progress toward the bachelor's degree, but a D grade must be offset by higher grades in the same term for you to remain in good academic standing. An F grade yields no unit or course credit.

**For Graduate Students** — The grades A, B, and C may be modified by a plus or minus suffix. The grades A, B, and S denote satisfactory progress toward the degree, but a C grade must be offset by higher grades in the same term for you to remain in good academic standing. Courses in which a C grade is received, however, may be applied toward graduate degrees.

The Schools of Dentistry, Medicine, and Law maintain their own grading codes. If you are interested in programs in any of these schools, consult the appropriate school announcement.

## Grade Points

In computing scholarship standing, a course counts as four quarter units. Partial or multiple courses are counted proportionally (e.g., one-half course is equal to two units).

Grade points per unit are assigned by the Registrar as follows:

A+ = 4.0	C+ = 2.3
A = 4.0	C = 2.0
A– = 3.7	C– = 1.7
B+ = 3.3	D+ = 1.3
B = 3.0	D = 1.0
B– = 2.7	D– = 0.7

F, NP, U = 0

Courses in which you receive a P or S grade may count toward satisfaction of degree requirements, but these grades, as well as DR, I, IP, and NR, are disregarded in determining your grade-point average. (If an I grade is later removed and a letter grade assigned, units and grade points are included in subsequent grade-point averages.) NR indicates that no grade was received from the instructor.

## Computing Your Grade-Point Average

Your grade-point average, or GPA, is determined by dividing the number of grade points earned by the number of units attempted. The number of grade points earned for a course equals the number of grade points assigned times the number of course units. For example, suppose you take three four-unit courses and receive grades of A–, B–, and C+.

### Grade Points × Course Units = Total Grade Points

A– = 3.7	4	14.8
B– = 2.7	4	10.8
C+ = 2.3	4	9.2
	12	34.8

To determine your GPA for the term, divide the total grade points earned (34.8) by the total course units attempted (12). Your GPA is 2.9.

For satisfactory standing, undergraduate students must maintain a C average (2.0 GPA) and graduate students a B average (3.0 GPA) in all courses taken at any campus of the University (except UCLA Extension).

Only grades earned in regular session or Summer Sessions at any UC campus and grades earned by Letters and Science students in UCLA Extension courses prefixed by XLC are computed in the UCLA grade-point average. Grades earned at another institution or in UCLA Extension courses other than those prefixed by XLC do not affect your GPA.

Other schools and agencies may calculate grade-point averages differently from the University when evaluating your records for admission to graduate and professional school programs. You should contact them about their policies in this regard.

## Class Standing

Undergraduate classification is determined by the number of units completed:

Classification	Completed Units
Freshman	0 - 44.9
Sophomore	45 - 89.9
Junior	90 - 134.9
Senior	135 or more

In all campus units except the School of Engineering and Applied Science, you are required to earn a minimum of 180 units from all college-level coursework for the bachelor's degree at UCLA. A maximum of 208 units is allowed in the School of the Arts, School of Nursing, and School of Theater, Film, and Television; in the College of Letters and Science a maximum of 216 units (228 for double majors and special programs) is allowed. In the School of Engineering and Applied Science, the minimum units allowed are between 180 and 200 (depending on the program); 213 maximum units are allowed. If you exceed the maximum, you may not be allowed to continue, except in rare cases approved by your college or school. See the degree requirements under each college and school for further details.

Graduate classification is based on your degree objective and whether or not you are advanced to candidacy for a doctorate.

## Passed/Not Passed (P/NP) Grades

Undergraduate students in good standing who are enrolled in at least 12 units (14 in the School of Engineering and Applied Science) may take certain courses on a Passed/Not Passed basis.

By alleviating grading pressures, this option allows you to explore areas in which you have little or no previous experience. The grade P is assigned for a letter grade of C or better. Units earned this way count toward satisfaction of degree requirements but do not affect your GPA. You will receive neither units nor course credit for an NP grade.

You may enroll in one course each term on a P/NP basis (two courses if you have not elected the P/NP option in the preceding term). You may not elect this option for Summer Sessions courses without an approved petition. Your department or school may require that you take some or all courses in your major for a letter grade. Certain other courses or programs may also be exempt from the P/NP option; consult your college or school for details.

You may make program changes to or from P/NP grading through the sixth week of instruction (see the *Schedule of Classes* Calendar for exact dates); changes after the first two weeks of class require a petition (available for purchase in the school supplies section at any ASUCLA Students' Store).

Certain undergraduate courses are offered only on a Passed/Not Passed basis and are designated PN in the *Schedule of Classes*.

## Satisfactory/Unsatisfactory (S/U) Grades

Graduate students in good standing (minimum 3.0 GPA) may enroll for S/U grading in one graduate or upper division course outside the major field each term, in addition to any courses offered only on an S/U grading basis within the major. The grade S is assigned for a letter grade of B or better, but units earned in this manner will not be counted in computing the GPA. You will receive neither units nor degree credit for a U grade. You may not elect the S/U option for Summer Sessions courses without an approved petition.

Courses taken on an S/U basis outside the major, and 500-series courses within the major, are applicable toward degree and/or academic residency requirements if so approved. Interdepartmental majors may not apply S/U courses to degree requirements, except for 500-series courses. Program changes to or from S/U grading may be made through the tenth week of instruction (see the *Schedule of Classes* Calendar); changes after the first two weeks of class require a petition (available for purchase in the school supplies section at any ASUCLA Students' Store).

Certain graduate courses are offered only on a Satisfactory/Unsatisfactory basis and are designated SU in the *Schedule of Classes*.

## Incomplete (I) Grades

Once an I grade is assigned, it remains on your transcript along with the passing grade you may later receive for the course. Your instructor may assign the I grade when your work is of passing quality but is incomplete for a good cause (i.e., illness or other serious problems). It is your respon-

sibility to discuss with the instructor the possibility of receiving an I grade as opposed to a nonpassing grade.

If an I grade is assigned, you may receive unit credit and grade points by satisfactorily completing the coursework as specified by the instructor. Do not reenroll in the course; if you do, it will be recorded twice on your transcript. If the work is not completed by the end of the next full term in residence, the I grade will lapse to an F, NP, or U as appropriate. Your college or school may extend this deadline in unusual cases.

Consult the *Schedule of Classes* for procedure instructions.

## In Progress (IP) Grades

For certain courses extending over more than one term (identified by T1, T2, T3, or T4 in the *Schedule of Classes*), evaluation of student performance is deferred until the end of the final term of the course. Provisional grades of IP are assigned in the intervening term(s) and are replaced with the final grade when you complete the full sequence. The school or college faculty or the Graduate Council will determine credit if you do not complete the full sequence and petition for partial credit.

## Deferred Report (DR) Grades

You may receive a DR grade when the instructor believes your work to be complete but cannot assign a grade because of disciplinary proceedings or other problems. If you are given a disciplinary DR grade, the Office of the Dean of Students will assist you in resolving the problem. For graduate students, the dean of the Graduate Division will set a deadline by which the DR will lapse to an F if the problem is not resolved and a grade assigned. The DR will be changed to a grade, or perhaps to an Incomplete, when the instructor provides written confirmation that you have resolved the situation. The DR grade is not included in determining your grade-point average.

## Repetition of Courses

Certain courses, as noted in their course descriptions, may be repeated for credit. Other courses taken at the University (except UCLA Extension) may be repeated only according to the following guidelines:

- (1) To improve your grade-point average, you may repeat only those courses in which you receive a grade of C – or lower; NP or U grades may be repeated to gain unit credit. Courses in which you received a letter grade may not be repeated on a P/NP or S/U basis. Courses originally taken on a P/NP or S/U basis may be repeated either on the same basis or for a letter grade.
- (2) Repetition of a course more than once requires the approval of your college or school or the dean of the Graduate Division, and is granted only under extraordinary circumstances.
- (3) Degree credit for a course will be given only once, but the grade assigned each time you take the course will be permanently recorded on your transcript.
- (4) For undergraduates who repeat a total of 16 units or less, only the most recently earned letter grades and grade points will be computed in the grade-point average. After repeating 16 units, however, your GPA will be based on all letter grades assigned and total units attempted.
- (5) For graduate students, all courses in which a letter grade is given, including repeated courses, will be used in computing the grade-point average.

## Correction of Grades

All grades except DR, I, and IP are final when filed by the instructor in the end-of-term course report. Thereafter, a grade change may be made only in case of a clerical or procedural error or other unusual circumstances. No grade may be revised by reexamination or, with the exception of the I and IP grades, by completing additional work. If you are dissatisfied with a grade, you should review your work with the instructor and receive an explanation of the grade assigned. All grade changes are recorded on





your transcript. See the Appendix for further details and procedures for appealing grades.

### **Credit by Examination**

Students with high scholastic standing may earn credit for regular University courses by taking examinations rather than enrolling in the courses. This is accomplished by establishing, with a UCLA faculty member, an individual plan of study which may include oral and written work in addition to other requirements. To be eligible for this privilege, undergraduate students must have completed a minimum of 12 units at UCLA. Graduate students must be registered at the time of the examination and are limited to a maximum of three courses taken in this manner.

The results of these courses are entered on your record in the same way as regular courses, and corresponding grade points are assigned. Graduate credit earned by examination may be applied toward minimum course requirements for master's degrees but cannot apply to academic residence requirements for master's or doctoral degrees.

You will need approval from the appropriate instructors, the department, and your college or school or the dean of the Graduate Division, from whom petitions for credit by examination (with fee) are available.

## **Other Academic Policies**

### **Concurrent Enrollment and Transfer of Credit**

Concurrent enrollment means taking courses for credit in UCLA regular session (Fall, Winter, or Spring Quarter) and at another college institution (including UCLA Extension) at the same time. **Concurrent enrollment is not permitted except in extraordinary circumstances, and no credit will be given for courses taken concurrently elsewhere** without the approval of your college or school. This does not apply to UCLA Summer Sessions (see "Summer Sessions" in Chapter 1).

### **Undergraduate Students**

During the summer or during a term when you are not registered at UCLA, you may elect to take courses for credit at UCLA Extension, a community college, or another four-year institution (see limitations below). The UCLA Office of Undergraduate Admissions and Relations with Schools makes the final decision on credit transferability, but it is your responsibility to select courses with catalog descriptions similar to courses offered in regular session at UCLA. You should avoid courses that are

closely related to those you have already taken, as you cannot receive credit twice for the same or similar courses. If you wish to apply a specific course from another college toward satisfaction of degree requirements at UCLA, consult your college, school, or department counselor before taking the course.

Only grades earned in regular session or Summer Sessions at any UC campus other than UC Santa Cruz and grades earned by Letters and Science students in UCLA Extension courses prefixed by XLC are computed in the UCLA grade-point average. You may, however, receive unit credit and satisfy course requirements with transferable work taken elsewhere. When you have completed the work, you must have the other college send a copy of your transcript to the UCLA Office of Undergraduate Admissions and Relations with Schools (UARS); you must also fill out a Transfer Credit Evaluation Request form at UARS, 1147 Murphy Hall.

**UCLA Extension** — If you wish to receive degree credit for work taken through UCLA Extension, you should take courses that correspond in number to the undergraduate courses offered in regular session. The designation XL or XLC before the number of the Extension course signifies that the course is equivalent to the regular session course bearing the same number. Grades earned by Letters and Science students in courses prefixed by XLC are computed in the UCLA grade-point average. No degree credit is given for courses numbered X300 through X499. Remember that concurrent enrollment in Extension and regular session is not permitted.

**Community Colleges** — The maximum number of community college units allowed toward the bachelor's degree is 105 quarter units (70 semester units). The UCLA Office of Undergraduate Admissions and Relations with Schools will not grant transfer credit for community college courses beyond 105 quarter units, but you may still receive subject credit for this coursework to satisfy lower division requirements. Consult your college or school counselors for possible further limitations. (To convert semester units into quarter units, multiply the semester units by 1.5 — e.g., 12 semester units  $\times$  1.5 = 18 quarter units. To convert quarter units into semester units, multiply the quarter units by .666 — e.g., 12 quarter units  $\times$  .666 = 7.99 or 8 semester units.)

### Graduate Students

With approval of the dean of the Graduate Division, certain courses completed outside of UCLA regular session may be applied toward the master's degree. For more details, see "Transfer of Credit" under "Requirements for Graduate Degrees" in Chapter 3.

### Transcript of Record

The Registrar prepares and permanently retains a record of each student's academic work. Your transcript reflects all undergraduate and graduate work completed in UCLA regular session and Summer Sessions. It lists chronologically your courses, units, grades, cumulative grade-point average, transfer credits, and total units.

The University Records System Access (URSA) allows all UCLA students to obtain course confirmation, UCLA grades for any completed term, GPA, completed units, and outstanding holds (i.e., restrictions from receiving services) and to confirm registration fee payment via a touch-tone telephone. Presently you can call URSA at (310) 208-0425 Monday through Saturday from 7 a.m. to midnight, including holidays (hours are subject to change). You can call as often as you wish. Access is given based on your nine-digit UCLA student I.D. number, your four-digit security code, and some portion of your Social Security number. The system is easy to use, explaining what to do at each step. A time limit is announced at the beginning of each call. If you exceed the limit, you will be disconnected. You may access the system for up to 10 years after your graduation or your last term of attendance. For additional information, consult the *Schedule of Classes*.

As needed, you may obtain a free printout of your grades for the most recent graded term at Academic Record Services, 1134 Murphy Hall, by presenting your valid current-term Registration Card and a photo I.D.

To have official transcripts sent to other schools or institutions, fill out a Transcript Request form (available in the Murphy Hall North Lobby). Each transcript costs \$4; make your check or money order payable to Regents-UC. Transcript fees are subject to change at any time. Requests will not be processed if you have outstanding financial obligations to the University. Transcripts of work completed elsewhere must be requested directly from the campus or institution concerned.

Transcripts for UCLA Extension courses must be ordered from UCLA Extension, P.O. Box 24901, Los Angeles, CA 90024.

### Verification of Student Status

The Registrar verifies registration (fee payment) and enrollment status for loan forms and other noncampus certifications at Academic Record Services, 1134 Murphy Hall, as a student is eligible. Verification of registration cannot be issued if registration fees for the term have not been paid.

### Certificate of Resident Study for International Students

In addition to a formal transcript, each college or school or the Graduate Division may issue a Certificate of Resident Study to a registered international student. To obtain this certificate, you must have completed a program of at least nine courses with a minimum 2.0 grade-point average (2.5 for Graduate Division students), or have satisfactorily completed a research project over a period of nine months or more. The chair of your major department recommends the award of this certificate.

### Registration Card

Your valid Registration Card (Reg Card) is your official student identification and is required, along with your UCLA Student I.D. Card, for all University services and student activities. Carry it with you as you will be asked to show it for student health services, library privileges, athletic and cultural student ticket rates, recreation center, check cashing, and many other campus services.

If you lose or do not receive your Reg Card, a temporary verification card (good for seven days) will be issued without fee at 1113 Murphy Hall after the fee deadline for the term. After the term begins, you may replace lost, destroyed, or mutilated cards at 1113 Murphy Hall for a \$3 fee. You must show proof of identity for verification or replacement cards.

If you have outstanding obligations (holds), proof of registration cannot be issued. For details on outstanding holds and initiating offices, call URSA at (310) 208-0425.

### UCLA Student (Photo) I.D. Card

This card with photo is issued without charge to new or reentrant students from the beginning to the end of the first academic term and is valid with the current Reg Card. Both the Student I.D. Card and the current-term Reg Card are required for all University services and student activities.

You will need a current Reg Card and other valid identification (driver's license, passport, or California DMV I.D. card) to obtain your Student I.D. Card. There is a fee for issuing the card after your first academic term in attendance, for replacing lost or destroyed cards, and for issuing cards because of a name change affecting your University records.

### Change of Name or Address

If you wish to change your name on your official University record, fill out a UCLA Correction or Change of Name form (available in the Murphy Hall North Lobby) and submit it to Academic Record Services, 1134 Murphy Hall. All name changes are recorded on your transcript. If you change your address after filing the UCLA Data Change Request portion of your Registration Form, notify the Registration/Enrollment Office in 1113 Murphy Hall as soon as possible.

# Leaving UCLA

## Intercampus Transfer

Undergraduate students registered in a regular session at any campus of the University (or those previously registered who have not since registered at any other school) may apply for transfer to another campus of the University. Obtain the *UC Application for Undergraduate Admission and Scholarships* and submit the required application fees with the application form. The filing periods are the same as those for new applicants (see "Undergraduate Admission" in Chapter 2). Applications are available from the UCLA Office of Undergraduate Admissions and Relations with Schools, 1147 Murphy Hall, Los Angeles, CA 90024-1436, other University of California Undergraduate Admissions Offices, or your local community college.

Graduate students who wish to enroll as degree candidates at other UC campuses must apply for admission to those Graduate Divisions.

## Absence during a Term

If you have to be absent from classes temporarily for reasons beyond your control, you should notify your instructors. Regardless of the reasons for absence, you are required to complete all coursework. If you cannot complete the work on time because your absence is late in the term or prolonged, you may request that the instructors assign an incomplete grade (see "Incomplete Grades" earlier in this chapter).

## One-Term Absence for Undergraduates

Undergraduate students who have completed at least one term at UCLA and fail to register for the following term may return to the University the next subsequent term as continuing students. If you plan to attend another institution (including UCLA Extension) during your absence, you should consult your college or school counselor before enrolling elsewhere (see "Concurrent Enrollment and Transfer of Credit" earlier in this chapter). If you are absent for two or more consecutive terms, you are no longer considered a continuing student and must apply for readmission (see "Readmission" in Chapter 2 for procedures and deadlines).

## Leave of Absence for Graduate Students

Graduate students in good standing may be granted leaves of absence, normally for periods of one to three terms, on approval from the appropriate department and the Graduate Division. Leaves, which may be extended for a total of two years at the discretion of your department and with approval of the Graduate Division, must be requested before the end of the second week of classes (see "Withdrawal" in the next column for fee refund procedures and more information). Request forms are available from the Graduate Division, Student and Academic Affairs Section, 1255 Murphy Hall. For details on leaves of absence, see *Standards and Procedures for Graduate Study at UCLA*, available in the Graduate Division offices or in individual departments. Students on leaves of absence are not eligible to use University facilities (except libraries) or faculty time and cannot receive University financial support. Leaves of absence as described here do not apply to undergraduates.

Graduate students who fail to register for a term and do not take an official leave of absence are considered to have withdrawn from the University and must compete for readmission with all other applicants.

## Cancellation

Before the first day of classes, you may cancel registration by mailing a written notice and your current Registration Card to the Registration/

Enrollment Office, Attn: Cancellation Clerk, 1113 Murphy Hall, Los Angeles, CA 90024-1429. A \$10 service charge will be deducted from your fee refund; additional fees will be deducted for failure to return your Registration Card.

Undergraduates who return to the University for the following term are considered continuing students. If you are absent longer than one term, you must apply for readmission (see "Readmission" in Chapter 2 for procedures and deadlines). If you cancel in your first term at UCLA, you must reapply for admission.

Graduate students who cancel their registration and do not apply for a formal leave of absence must compete for readmission to return to the University.

## Withdrawal

Withdrawing from the University means discontinuing attendance in all courses in which you are enrolled. If you withdraw during a term, you need to file a Notice of Withdrawal, available from your academic dean's office (undergraduates) or departmental office (graduate students). Submit your Registration Card along with the form or a fee will be deducted from any refund.

When you withdraw officially during the first five weeks of instruction (calendar days 1 to 35, beginning with the first day of instruction), a percentage of your registration fee will be refunded as follows:

- First and second weeks of instruction: 80% refund
- Third week of instruction: 60% refund
- Fourth week of instruction: 40% refund
- Fifth week of instruction: 20% refund
- After fifth week of instruction: no refund

If instruction begins in midweek, refund percentages may also change in midweek. Claims for refund must be presented within the academic (fiscal) year to which the claim is applicable. Consult the current *Schedule of Classes* for policy details and specific refund dates.

You may withdraw only if you have not taken any final examinations or otherwise completed the work in any of your classes. For undergraduates, one withdrawal places no restriction on readmission or continuation if you started the term in good academic standing. If you withdraw after one or more previous withdrawals or while in academic difficulty, a restriction may be placed on your continuance in undergraduate standing. Before withdrawing, you are urged to consult faculty, departmental, or college advisers to consider the full implications of this action.

Undergraduates may also withdraw from a term retroactively, provided no final examinations have been taken and no coursework has been completed. No withdrawals are accepted once you have officially graduated from the University.

If you register and subsequently discontinue coursework or stop payment on registration checks without an approved petition for withdrawal, leave of absence, or cancellation, you will receive F, NP, or U grades, as appropriate, for all courses in which you are enrolled for that term. A \$60 fine will be assessed if any check for registration fee payment is returned by a bank (i.e., stopped payment, insufficient funds, etc.). No fees will be refunded, and future registration privileges may be curtailed or revoked. Transcripts will not be issued if you have outstanding financial obligations to the University.

**Undergraduate Students** — If you return to the University for the term following withdrawal, you are considered a continuing student. If you return later than the following term, you must apply for readmission.

**Graduate Students** — If you do not register for a term, you are considered to have withdrawn from the University and must apply for readmission when you return.

## Graduation from UCLA

Approximately eight out of every 10 UCLA freshmen eventually receive a baccalaureate degree, either from UCLA or from another campus or institution. According to a recent survey of UCLA alumni, one third of all UCLA baccalaureate recipients go on to graduate school. For information on academic requirements for graduation, see "Undergraduate Degree Requirements" in Chapter 2.

### Undergraduate Students

The awarding of the bachelor's degree does not happen automatically but is the culmination of several steps which begin when you identify the term you expect to complete degree requirements on part 3 ("degree expected term" section) of the quarterly Registration Form. (Update of this information through URSA is projected for implementation in 1993-94.) **This must be done by the time you complete 160 units or a \$13 late candidacy fee will be assessed.** The identified term must fall within the academic year (four quarters) subsequent to the term in which you reach or expect to reach the 160-unit mark. Exceptions can be made by your degree auditor depending on your program of study (e.g., double majors).

You may request a review of your degree progress by a counselor in your college or school office at any time. Advisers in your major department are also available for counseling on departmental requirements.

The "degree expected term" you specify on your Registration Form is used by the degree auditors to review your coursework and begin the audit of your completion of degree requirements. You cannot graduate without such an audit. If your expected graduation date changes, mark the new term on the Registration Form and file it within the published dates (consult the *Schedule of Classes* Calendar) at 1113 Murphy Hall. Once you have completed 160 or more units, a fee will be assessed each time you petition to change your "degree expected term" on the UCLA Declaration of Candidacy form.

The last day to declare candidacy for the current term (with fee if 160 or more units completed) is Friday of the fifth week. Declaration of candidacy after the fifth week may result in a degree award date for the following term and additional candidacy penalty fees.

During the fourth week of each term, a list of all current-term degree candidates is posted in the glass case next to 1105 Murphy Hall. If you have requested that no public information (including your name) be released, you will not be included on the posted list. Inquire at 1113 Murphy Hall for information on your "degree expected term" (a photo I.D. is required).

If you intend to complete degree requirements as a nonregistered student (take a course through UCLA Extension or at another institution, remove an Incomplete grade, etc.), you must file a request to graduate "in absentia" with your degree auditor by the fifth-week candidacy deadline. Students graduating "in absentia" will be assessed the special order diploma fee in addition to the declaration of candidacy fee.

Students in the School of the Arts, School of Nursing, School of Engineering and Applied Science, and School of Theater, Film, and Television are audited for degree requirements by staff members in their respective counseling/student affairs offices and should consult them regarding questions on degree requirements and school degree audit procedures.

Students in the College of Letters and Science who entered UCLA in Fall Quarter 1988 and thereafter are mailed a computer-generated **Degree Progress Report** once a year (copies can also be ordered at A316 Murphy Hall). This report includes a detailed evaluation of transfer credit, courses and grades for each completed term, degree requirements completed, and requirements still outstanding.

Students who entered prior to Fall Quarter 1988 are audited for degree requirements by the Registrar's degree auditors after completing 160

units, with a "degree expected term" within the subsequent two terms. You should receive information regarding your completion of requirements or any remaining degree requirements and/or deficiencies no later than your final term.

A "Summary of Shortages for the Bachelor's Degree" statement is mailed to each current-term candidate who does not satisfy degree requirements that term. If you receive such a notice, contact a degree auditor immediately to discuss your expected completion of the requirements.

Once you complete 180 units and reach the term you have declared as your "degree expected term," you are reviewed by your degree auditor for award of the degree each subsequent term while in continuous registration, including UCLA Summer Sessions. Keep your degree auditor informed of your plans for completing your degree.

### Graduate Students

Candidates for both master's and doctoral degrees must file an advancement to candidacy petition, be advanced to candidacy, and complete all degree requirements, including the master's thesis or comprehensive examination, or doctoral dissertation, before the degree is conferred (consult the *Schedule of Classes* for filing deadlines). For full details on degree requirements and procedures for graduate students, see Chapter 3 on Graduate Study.

### Final Transcript

Official transcripts with your graduation date included are available approximately seven weeks after the end of the term. If you require earlier proof of graduation, contact your degree auditor.

### Degree Date

Degrees are awarded at the end of Fall, Winter, and Spring Quarters and at the end of Summer Session C (mid-September). For the School of Law and School of Medicine degrees are awarded at the end of Fall and Spring Semesters. Consult the respective University calendars (quarter, summer sessions, semester) for the actual degree award date, which is the final day of the term.

### Diplomas

Diplomas for both undergraduate and graduate students are available approximately three to four months after the degree award date. Information about obtaining your diploma in person (no fee) or by mail (with fee) is sent to you approximately seven weeks after the end of your final term. To expedite receipt of your diploma, you are encouraged to return the diploma mailer form and remit the mailing fee. Recorded information regarding diploma availability may be obtained by calling the Diploma Hot Line at (310) 825-8883. The Registrar's Office retains diplomas for five years from graduation date.

If your original diploma is destroyed, a duplicate may be ordered by contacting the Registrar's Office, Diploma Reorder, 1113 Murphy Hall. There is a fee for the replacement diploma, and it will bear a reissue date and the signatures of the current officials of the state and University.

## Commencement

Each school and college conducts an academic ceremony for its graduates. Some of the ceremonies feature an address by the Chancellor, student speakers, and recognition of candidates who have achieved high academic distinction and honors, as well as prizes. Check with your school or college for eligibility requirements and program and time schedules.

Academic regalia (caps, gowns, and hoods) are available for rent/purchase at ASUCLA's Graduation Et Cetera (across from Tout de Suite on the first floor of Ackerman Union, 310-825-2587). In addition, graduation announcements with printed enclosure cards, diploma covers, and diploma mounting are available. You may also purchase graduation announcements at the ASUCLA Campus Photo Studio (150 Kerckhoff Hall) through mid-May. Discount packages are available for purchase through a joint effort by the UCLA Alumni Association and ASUCLA.

# Colleges and Schools

## Organization

This catalog is organized into the one college and 13 schools which are the University's component parts. Each of the following chapters is devoted to a single college or school. Each is introduced by general information on scope and emphasis, the academic departments it encompasses, admission standards, and requirements for undergraduate and graduate degrees.

The overall college or school description is followed, in alphabetical sequence, by its departmental listings. Here you will find faculty rosters, departmental degree requirements, requirements for the major, and descriptions of all courses (lower division, upper division, and graduate) offered by that department or interdepartmental degree program. (If you are not certain which college or school offers a particular program, see the organization chart on the inside front cover.)

Since the great majority of UCLA's students and degree programs are housed within the College of Letters and Science, that unit is presented first. It is followed by the other general campus units offering undergraduate programs: School of the Arts, School of Theater, Film, and Television, and School of Engineering and Applied Science. The graduate professional schools of Architecture and Urban Planning, Education, Law, Library and Information Science, Management, and Social Welfare follow in alphabetical sequence. The health sciences disciplines, which include the Schools of Dentistry, Medicine, Nursing, and Public Health, are the final chapters before the Appendix.

## Courses of Instruction

Because the catalog must be prepared well in advance of the academic year it covers, it may not reflect recent changes in courses, curricula, and faculty listings. For more current information, consult the quarterly *Schedule of Classes* available in the Students' Store shortly before the beginning of each new term.

Courses listed in this catalog represent the total nonclinical offerings of each college, school, and department at UCLA. Certain courses listed may not be offered every term or every year. Where possible, the terms in which a course is offered have been indicated in parentheses after the instructor's name (F = Fall, W = Winter, Sp = Spring, Sum = Summer).

## Academic Credit

**A course has a credit value of four quarter units unless otherwise specified in parentheses after the course title.**

A listing such as **History 1A-1B-1C, Introduction to Western Civilization**, indicates three full four-unit courses, 1A, 1B, and 1C. The listing **Music 4A-4B-4C, Basic Musicianship (2 units each)**, indicates three half-courses at two units each. A course may not be prerequisite to the next in the series unless so designated, but since policies vary among departments, you should check with the departmental counselor or adviser. Credit for a specific course may be dependent on completion of a subsequent course, as noted in the description.

## Prerequisites

Education is a building process. It is difficult or impossible to learn advanced principles without first understanding elementary ones. Therefore, one or more lower division courses may be prerequisite to taking another lower division or an upper division course. Prerequisites should

be noted carefully — it is your responsibility to meet these requirements in preparation for more advanced work. A course has no prerequisites if none is designated in departmental requirements or course descriptions.

## Undergraduate Courses

Undergraduate courses are classified as lower division and upper division. **Lower division courses (numbered 1-99)** are often surveys offering preliminary introductions to the subject field. They are designed primarily for freshmen and sophomores, though upper division students may enroll for unit and grade credit. Lower division courses may not be applied toward graduate degrees.

**Upper division courses (numbered 100-199)** are open to all students who have met the prerequisites indicated in departmental requirements or the course description. Preparation generally includes at least one lower division course in the subject or two years of college work. With approval of the major department, graduate students may take 100-series courses toward satisfaction of master's degree requirements.

**Lower division/first-year seminars (numbered 88)** are departmentally sponsored courses designed to provide freshmen and sophomores the opportunity to participate in small classroom settings to enhance writing, verbal, and analytical skills. Many carry general education credit.

**Variable topics courses (numbered 97 and 197)** are offered at both the lower (97) and upper (197) division levels; topics within a defined subject area vary with the instructor and individual offerings. These topics have a fixed and permanent place in the regular curriculum.

**Professional schools seminars (numbered 98)** are designed by the faculty of the professional schools specifically for freshmen and sophomores. Outside of the professional schools, 98 courses are often offered as the lower division equivalent of 198 courses, defined below. Consult the *Schedule of Classes* for respective offerings.

**Group special studies courses (numbered 198)** are structured special studies for groups. They may be departmentally sponsored experimental and/or temporary in nature (e.g., courses taught by a visiting professor) or those which are being tested for permanent inclusion in the curriculum. Because they are temporary in nature, vary in content, and are offered irregularly, they are not listed in the catalog. Consult the *Schedule of Classes* for respective offerings.

**Individual special studies courses (numbered 199, 199F, 199H, and 199I)** involve supervised independent study and research requiring adequate background in the subject proposed for study. These courses are structured by the instructor and student at the time they are initiated and are open to juniors (with a minimum 3.0 GPA in the major field), seniors, and graduate students. To enroll, you must complete the appropriate petition (available from the department) and have it approved by both the instructor in charge and department chair.

Undergraduates may enroll in a maximum of eight units of 199, 199F, 199H, and/or 199I courses per term. After completing 16 units of 199 and/or 199H credit on a letter grade basis, you must take any additional 199 and/or 199H courses on a Passed/Not Passed basis. Independent field study courses (199F and 199I) must be taken on a Passed/Not Passed basis; a total of eight units is allowed. If you have an outstanding Incomplete grade in a 199, 199F, 199H, or 199I course, you may not register for another until the I grade is removed. See departmental listings and individual course descriptions for specific prerequisites and credit limitations.

## Graduate Courses\*

**Graduate courses numbered 200-299** are generally open only to graduate students who have completed basic undergraduate courses in the subject. Courses and seminars in the 200 series can fulfill the minimum graduate course requirement for any advanced degree.

With departmental and instructor consent, and subject to requirements in the appropriate college or school, undergraduate students may enroll in 200-series courses for unit credit toward the bachelor's degree. If you take a graduate course as an undergraduate, you may not apply that same course later toward a higher degree.

**Graduate courses numbered 300-399** are highly specialized teacher-training courses which are not applicable toward University minimum requirements for graduate degrees. They are acceptable toward the bachelor's degree only at the discretion of the individual college or school.

**Graduate courses numbered 400-499** are designed for professional programs leading to graduate degrees other than the M.A., M.S., and Ph.D. These courses may not be used to satisfy minimum graduate course requirements for the M.A. or M.S. degree but may apply as electives.

**Individual study and research courses (numbered 500-599)** are reserved for advanced study and are not open to undergraduates. Courses are numbered as follows: 595/596 = directed individual study or research; 597 = preparation for master's comprehensive or doctoral qualifying examination; 598 = master's thesis research and preparation; and 599 = doctoral dissertation research and preparation. (Courses numbered 501 are not individual study and research but are cooperative programs held in conjunction with USC.) See individual departmental listings for specific limitations on 500-series courses.

## UCLA Extension Courses

In general, you may not attend UCLA Extension for degree credit if you are enrolled in UCLA regular session at the same time. However, certain

\*These definitions do not apply to the School of Law, which maintains its own course numbering system.

Extension courses (numbered 1-199), prefixed by XL or XLC in the course listings, yield credit toward the bachelor's degree. Graduate students may petition to apply up to two XLC courses toward the master's degree. For more details, see "Concurrent Enrollment" earlier in this chapter.

## Concurrent and Multiple Listings

**Concurrently scheduled courses** (identified by a capital C before the course number) are pairs of courses, usually within a single department or program, for which credit is given at two levels — undergraduate and graduate. Concurrently scheduled courses are offered at the same time and place with the same instructor, but work levels and performance standards are evaluated differently for students at each level. (Concurrently scheduled courses as described here should not be confused with concurrent courses offered through UCLA Extension.)

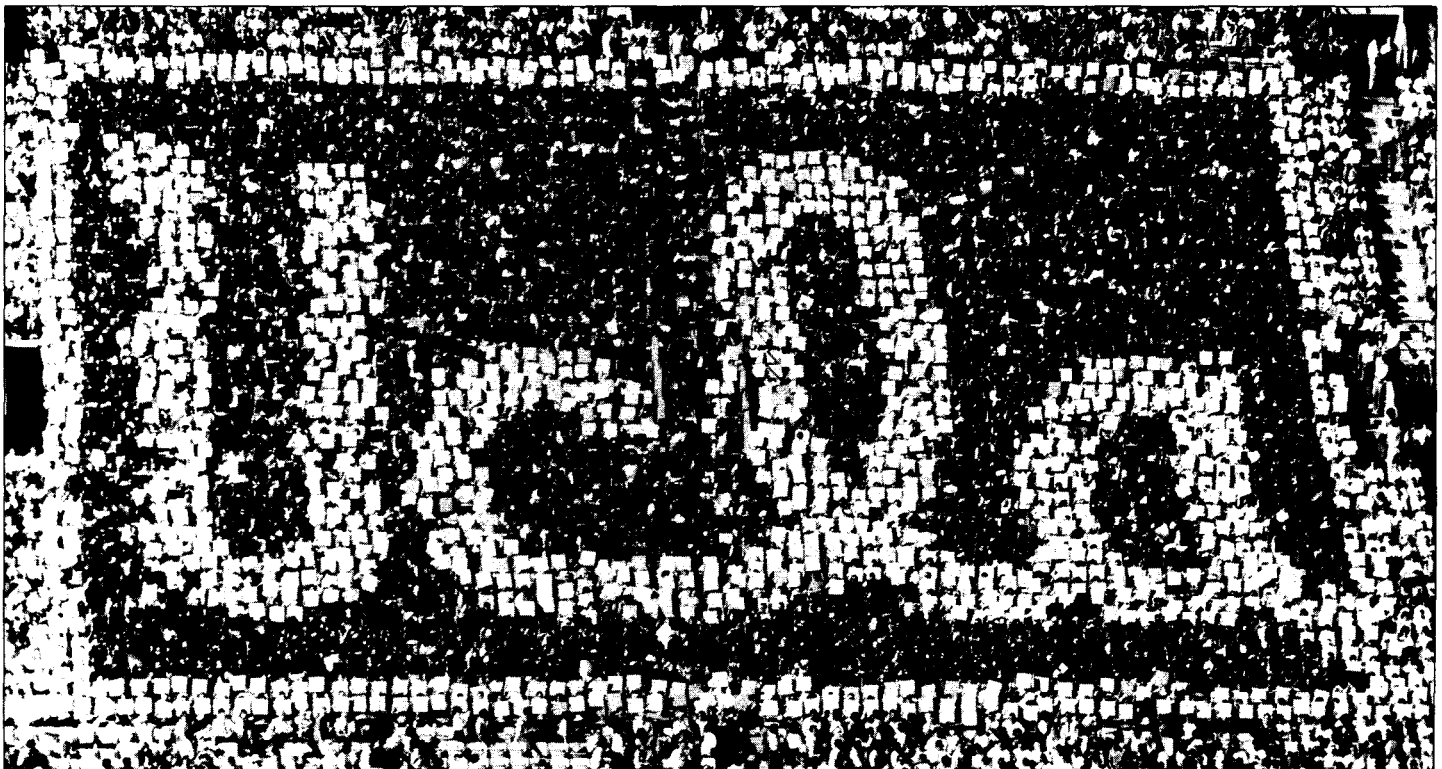
**Multiple-listed courses** (identified by a capital M before the course number) are courses of the same format and level offered jointly by more than one department. For example, Political Psychology is offered by the Department of Political Science (Political Science M140) and the Department of Psychology (Psychology M138). You will find that particular course listed under both departments in Chapter 5 on the College of Letters and Science.

## Faculty Rosters

Faculty rosters in each academic department are listed in the following order:

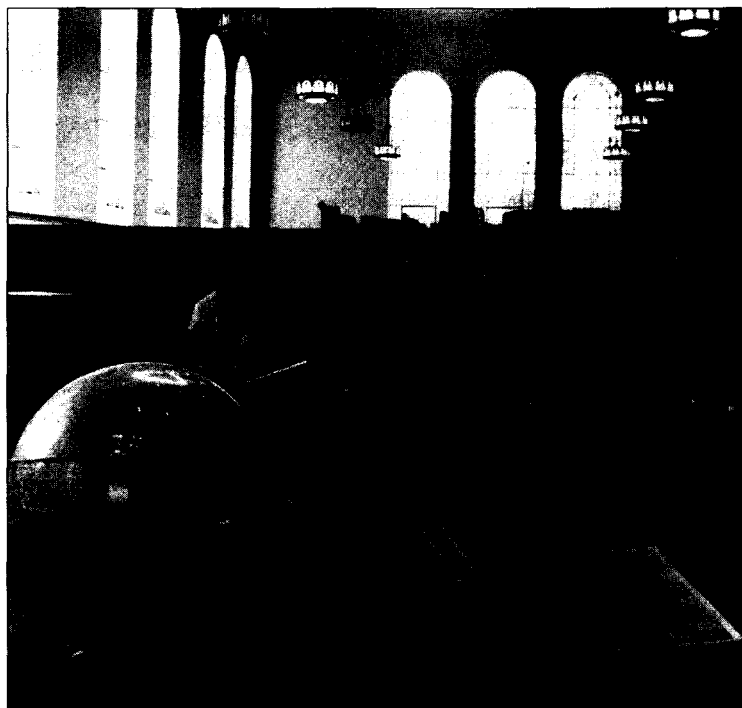
- Professors
- Associate Professors
- Assistant Professors
- Lecturers
- Adjunct and Visiting faculty in each of the first three Academic Senate classifications

In the case of interdepartmental degree programs, all participating faculty members have appointments in regular academic departments. Participating faculty are listed in the above order, with the home department or specialty of each member indicated in parentheses.



# College of Letters and Science

Brian P. Copenhaver, Provost



“The Idea of a Multiversity’ is a city of infinite variety. Some get lost in the city; some rise to the top within it; most fashion their lives within one of its subcultures. . . . It offers . . . a vast range of choices, enough literally to stagger the mind. In this range of choices . . . (one) encounters the opportunities and the dilemma of freedom.”

Clark Kerr, *The Uses of the University*

With over 23,300 students and 1,000 faculty, UCLA’s College of Letters and Science is the largest academic unit in the UC system. Underscoring the “multiversity” concept, its four academic divisions of humanities, physical sciences, social sciences, and life sciences provide the framework for more than 100 majors leading to the Bachelor of Arts or Bachelor of Science as well as to master’s and doctoral degrees.

The undergraduate programs in the college stress a “liberal arts education” which brings together perspectives from many fields in a unified approach to learning. Students learn some of the ways issues are analyzed, questions posed, and knowledge organized. After sampling many general subjects, they concentrate on one field or subject and are required to pursue it rigorously and in depth, according to the standards of scholars in the field. When they reach the graduate level, they will pose their own questions, analyze academic issues of their own making and, through their research, participate in the creation of knowledge.

# 5

# College of Letters and Science

## A316 Murphy Hall, (310) 825-1965

The primary units of the College of Letters and Science are the academic departments which are grouped in four divisions: humanities, physical sciences, social sciences, and life sciences. Each division is headed by a dean who reports directly to the provost.

In addition to departmental advising, the Division of Honors and Undergraduate Programs includes a network of student assistance within its components: College Counseling Service, Honors Programs (see "Honors" later in this section), and Academic Advancement Program (see Chapter 2).

### Humanities

The division's mission is to promote, through scholarly inquiry and transmission of ideas, sensitive, imaginative, and rigorous reflection on the human condition and to engage in thoughtful reflection on those deep and abiding questions that relate to what it is to be human. Faculty and students reflect on art, literature, philosophy, and other expressions of the human spirit, each of which deepens their understanding. The instructional goal is to engage students in this inquiry — to further their knowledge and competence to express themselves clearly, rigorously, with style and originality.

Programs in the humanities range from teaching the craft of composition in writing programs, to developing an appreciation of profound philosophical thinkers and writers from Asia, the Near East, Europe, England, and America. Paul D. Sheats is the interim divisional dean.

### Physical Sciences

The division's departments present the results of mankind's efforts to understand the physical aspects of the natural sciences, which include the study and understanding of the properties and characteristics of matter and energy; the science of numbers and order; studies of the origin and structure of the universe, solar system, and Earth; and climatic change. The bases for the physical sciences are the fundamental laws and proof of mathematics, chemistry, and physics. Studies in the physical sciences are experimental, theoretical, and observational.

Faculty and students are interested in such topics as the nature and evolution of the galaxies; ozone depletion; nuclear winter; greenhouse effect; molecular recognition, interac-

tions, design, synthesis, and structure; evolution of life and the continents; computational mathematics and symbolic logic; superconducting materials; plasma fusion, space plasmas; and high-energy accelerator physics. Clarence A. Hall, Jr., is the divisional dean.

### Social Sciences

The division's departments are guided by the ideal of creating a deeper understanding of cultures and heritages and helping young people make sense of the rapidly changing world. By studying and comparing diverse cultures with their own, students gain self-knowledge and global awareness.

Anthropology students study human communities and social systems, archaeological records, and artifacts. Communication studies students learn about the mass media of today and their technological advances, social uses, and abuses. Leading economists investigate the applications of economic principles to business decisions. The geographic purview extends from studying the effects of location on human behavior to the Earth's ecosystem. Courses in history bring about understanding of the forces that have shaped the many societies and cultures of this country and the world. Political scientists study the motivations of political behavior and the relations between today's superpowers. UCLA sociologists examine subjects ranging from the everyday interaction of people to the complexities of social organizations. Scott L. Waugh is the divisional dean.

### Life Sciences

Faculty and students in the division play an essential role in unlocking the secrets and mechanisms of life at the most fundamental level. The geography of Southern California is very conducive to life sciences research. An area as ecologically rich and diverse as Southern California is a natural laboratory for environmental physiologists and plant and animal ecologists.

Scientists in biology, microbiology and molecular genetics, and molecular biology conduct research in cell and developmental biology. Neurochemists, neurophysiologists, psychobiologists, and behavior biologists research the underlying mechanism of the neural basis of behavior. Physiological scientists examine the regulation of human movement, neural control of breathing, and environmental conditions such as weightlessness, which affect bone and muscle structure and function. Cognitive sci-

entists are concerned with the nature of knowledge — how people learn, remember, associate, and think, and how computers relate to thought processes. Frederick A. Eiserling is the divisional dean.

## Undergraduate Study

The degree programs in the College of Letters and Science are designed to expose students to a variety of intellectual challenges by combining a wide distribution of courses and the opportunity to specialize in one particular field. To this end, you are required to select lower division courses that deal with the general foundations of human knowledge. In upper division courses you are relatively free to concentrate attention on one field of interest: your major.

You are expected to select a major by the beginning of your junior year. This may be a program of related upper division courses within a single department (departmental major) or a group of related courses involving a number of departments (interdepartmental major) or, under certain circumstances, a group of courses selected to meet your special need (individual major). Preparation for a major often requires prior completion of courses known as *prerequisites*.

## Counseling Services

The College Counseling Service is located in A316 Murphy Hall. Staff members are specially trained to assist you with questions pertaining to academic regulations and procedures, selection of courses, and the many options and alternatives available to enhance your university education.

Some questions can be answered at the college information window or by calling (310) 825-1965. If you would like to confer with a counselor or counseling assistant (CA) regarding overall degree requirements, academic difficulty, program planning, or assistance in selecting a major, you can arrange an appointment at the information window. Group counseling sessions on a variety of academic issues are offered throughout the year.

For information on the ASK peer counselors, Orientation, and College Tutorial Services, see Chapter 2.

(continued on page 82)



## Majors and Degrees Offered

- African Area Studies (M.A.)  
 African Languages (B.A.)  
 Afro-American Studies (B.A., M.A.)  
 American Indian Studies (M.A.)  
 Ancient Near Eastern Civilizations (B.A.)  
 Anthropology (B.A., B.S., M.A., Ph.D.)  
 Applied Linguistics (C.Phil., Ph.D.)  
 Applied Mathematics (B.S.)  
 Arabic (B.A.)  
 Archaeology (M.A., C.Phil., Ph.D.)  
 Art History (B.A., M.A., Ph.D.)  
 Asian American Studies (M.A.)  
 Astronomy (M.S., M.A.T.\*, Ph.D.)  
 Astrophysics (B.S.)  
 Atmospheric Sciences (B.S., M.S., C.Phil., Ph.D.)  
 Biochemistry (B.S., M.S., C.Phil., Ph.D.)  
 Biology (B.S., M.A., C.Phil., Ph.D.)  
 Business Economics (B.A.)  
 Cell and Molecular Biology (B.S.)  
 Chemistry (B.S., M.S., C.Phil., Ph.D.)  
 Chemistry/Materials Science (B.S.)  
 Chicana and Chicano Studies (B.A.)  
 Chinese (B.A.)  
 Classical Civilization (B.A.)  
 Classics (M.A., C.Phil., Ph.D.)  
 Cognitive Science (B.S.)  
 Communication Studies (B.A.)  
 Comparative Literature (M.A., C.Phil., Ph.D.)  
 Cybernetics (B.S.)  
 Development Studies (B.A.)  
 Earth Sciences (B.A.)  
 East Asian Languages and Cultures (M.A., C.Phil., Ph.D.)  
 East Asian Studies (B.A.)  
 Economics (B.A., M.A., C.Phil., Ph.D.)  
 Economics/International Area Studies (B.A.)  
 Economics/System Science (B.S.)  
 English (B.A., M.A., C.Phil., Ph.D.)  
 English/Greek (B.A.)  
 English/Latin (B.A.)  
 Folklore and Mythology (M.A., Ph.D.)  
 French (B.A., M.A., C.Phil., Ph.D.)  
 French and Linguistics (B.A.)  
 General Chemistry (B.S.)  
 General Mathematics (B.S.)  
 General Physics (B.A.)  
 Geochemistry (M.S., C.Phil., Ph.D.)  
 Geography (B.A., M.A., C.Phil., Ph.D.)  
 Geography/Environmental Studies (B.A.)  
 Geology (B.S., M.S., C.Phil., Ph.D.)  
 Geology — Engineering Geology (B.S.)  
 Geology — Paleobiology (B.S.)  
 Geophysics — Applied Geophysics (B.S.)  
 Geophysics and Space Physics (B.S., M.S., Ph.D.)  
 German (B.A., M.A.)  
 Germanic Languages (C.Phil., Ph.D.)  
 Greek (B.A., M.A.)  
 Greek and Latin (B.A.)  
 Hebrew (B.A.)  
 Hispanic Languages and Literatures (C.Phil., Ph.D.)  
 History (B.A., M.A., C.Phil., Ph.D.)  
 History/Art History (B.A.)  
 Indo-European Studies (C.Phil., Ph.D.)  
 Iranian Studies (B.A.)  
 Islamic Studies (M.A., C.Phil., Ph.D.)  
 Italian (B.A., M.A., C.Phil., Ph.D.)  
 Italian and Special Fields (B.A.)  
 Japanese (B.A.)  
 Jewish Studies (B.A.)  
 Latin (B.A., M.A.)  
 Latin American Studies (B.A., M.A.)  
 Linguistics (B.A., M.A., C.Phil., Ph.D.)  
 Linguistics and Anthropology (B.A.)  
 Linguistics and Computer Science (B.A.)  
 Linguistics and East Asian Languages and Cultures (B.A.)  
 Linguistics and English (B.A.)  
 Linguistics and French (B.A.)  
 Linguistics and Italian (B.A.)  
 Linguistics and Philosophy (B.A.)  
 Linguistics and Psychology (B.A.)  
 Linguistics and Scandinavian Languages (B.A.)  
 Linguistics and Spanish (B.A.)  
 Mathematics (B.S., M.A., M.A.T., C.Phil., Ph.D.)  
 Mathematics/Applied Science (B.S.)  
 Mathematics of Computation (B.S.)  
 Microbiology and Molecular Genetics (B.S., M.A., Ph.D.)  
 Molecular Biology (Ph.D.)  
 Musicology (B.A., M.A., C.Phil., Ph.D.)  
 Near Eastern Languages and Cultures (M.A., C.Phil., Ph.D.)  
 Near Eastern Studies (B.A.)  
 Neuroscience (B.S.)  
 Philosophy (B.A., M.A.\*\*\*, C.Phil., Ph.D.)  
 Physics (B.S., M.S.\*\*\*, M.A.T., Ph.D.)  
 Physiological Science (B.S., M.S., Ph.D.)  
 Political Science (B.A., M.A., C.Phil., Ph.D.)  
 Portuguese (B.A., M.A.)  
 Psychobiology (B.S.)  
 Psychology (B.A., M.A.\*\*\*, C.Phil., Ph.D.)  
 Public Administration (M.P.A.\*)  
 Religion, Study of (B.A.)  
 Romance Linguistics and Literature (M.A., C.Phil., Ph.D.)  
 Russian Language and Literature (B.A.)  
 Russian Studies (B.A.)  
 Scandinavian (M.A.)  
 Scandinavian Languages (B.A.)  
 Slavic Languages and Literatures (B.A., M.A., C.Phil., Ph.D.)  
 Sociology (B.A., M.A., C.Phil., Ph.D.)  
 Spanish (B.A., M.A.)  
 Spanish and Linguistics (B.A.)  
 Spanish and Portuguese (B.A.)  
 Teaching English as a Second Language (M.A.)  
 Women's Studies (B.A.)  
 World Arts and Cultures (B.A.)

\*Not admitting new students at this time.

\*\*The department only admits applicants whose objective is the Ph.D.

## Your Major

Most entering freshmen are unsure about specific academic goals and request to be admitted to the college as "undeclared." These students then explore fields of study by taking introductory courses in the physical and life sciences, social sciences, and humanities in search of an area that most excites their interest (see "Choosing Your Major" in Chapter 2 of this catalog).

All students with 90 or more units toward a degree are expected to declare a premajor or a major. When you are ready to do so, obtain approval on a Petition for Declaration of Major from the department or interdepartmental degree committee which governs your intended major.

You can obtain help with your academic planning from a variety of resources, including the College Counseling Service in A316 Murphy Hall (310-825-1687 or 825-1965) and the Placement and Career Planning Center (310-825-2981). In addition, faculty members and counselors in each college department are available to discuss in detail the courses and programs in their respective fields. For further suggestions, see "Advising and Academic Assistance" in Chapter 2.

## Assessing Progress Toward Your Degree

One of your responsibilities as a UCLA student includes a regular monitoring of all requirements necessary for the degree. It is imperative that you read this catalog carefully and consult regularly with the Letters and Science counseling staff for confirmation of the requirements you need. Departmental counselors can advise you regarding progress and completion of your major requirements. It is important that you maintain an accurate assessment of progress toward your degree by utilizing departmental and College Counseling Service resources. To assist you in your degree planning, the College Counseling Service provides computerized Degree Progress Reports (DPRs) on request.

## Minimum Progress

UCLA is a full-time institution, and it is expected that students will complete their undergraduate degree requirements promptly. The recommended study load for an undergraduate in the College of Letters and Science is 12 to 16 units per term. Normal progress (toward graduation in four years) may be defined as the completion of 45 units per year.

According to Academic Senate regulations, Letters and Science undergraduates who do not pass at least 36 units during any three consecutive terms will be placed on probation, and students who do not pass at least 32 units during three consecutive terms will be subject to disqualification from registration at the University. Exceptions may be granted by the col-

lege due to poor health, family responsibilities, or regular employment of 20 hours per week or more.

## Letters and Science Majors

A major in the College of Letters and Science consists of at least nine and no more than 15 upper division courses (between 36 and 60 units). All courses applied toward the major and preparation for the major must be taken for a letter grade unless otherwise stipulated by the department. If you have been away from the University for several terms, you should consult with your major department or curriculum adviser concerning the requirements under which you will graduate.

There are three categories of majors in the College of Letters and Science:

### Departmental Majors

A departmental major consists of a group of related upper division courses, of which at least six courses are in one department. These majors are supervised by established campus departments. There are 86 departmental majors currently offered by the college.

### Interdepartmental Majors

An interdepartmental major consists of at least 13 related upper division courses, of which no more than eight are in one department. These programs are administered by interdepartmental committees made up of faculty whose membership is determined by research interest, not by departmental affiliation. By cutting across the usual lines of departmental division, a subject area is studied from the perspectives of different disciplines and a greater degree of program flexibility is achieved.

The College of Letters and Science currently offers 26 interdepartmental majors. Although most lead to bachelor's degrees, there are some which lead to graduate degrees only. Check the chart of majors and degrees for the programs which interest you.

African Area Studies  
 Afro-American Studies  
 American Indian Studies  
 Applied Linguistics  
 Archaeology  
 Asian American Studies  
 Chemistry/Materials Science  
 Chicana and Chicano Studies  
 Communication Studies  
 Comparative Literature  
 Cybernetics  
 Development Studies  
 East Asian Studies  
 Economics/System Science  
 Folklore and Mythology  
 History/Art History  
 Indo-European Studies  
 Islamic Studies

Latin American Studies  
 Molecular Biology  
 Near Eastern Studies  
 Neuroscience  
 Religion, Study of  
 Romance Linguistics and Literature  
 Women's Studies  
 World Arts and Cultures

You can find a detailed description of each of these majors under their respective headings later in this chapter.

## Individual Majors

If you have some unusual but definite academic interest for which no suitable major is offered at the University and you have completed at least three terms of work (nine courses) at the University with a grade-point average of 3.4 or better, you may plan an individual major. The consent of the Division of Honors and Undergraduate Programs and the assistance of a faculty adviser are required.

The major should consist of at least 12 and no more than 15 upper division courses, a majority of which are in departments offering a major in the college. A senior thesis is required. The title of the major will be entered in the memorandum column of your official transcript and, at your request, printed on your diploma (up to a maximum of 70 characters). If you do not elect to have the title printed or if it is longer than 70 characters, your diploma will read "Individual Field of Concentration." For further details about individual majors, contact the Honors Programs Office in A311 Murphy Hall (310-825-1553).

## Returning Students and Their Majors

If you return to the University to resume your studies after an absence of several years, you may find your previous major area of study no longer available. You then must select a current major in which to complete your studies. Consult the College Counseling Service for assistance.

## Minors

The college will offer minors beginning in academic year 1994-95. A minor will consist of at least seven but no more than nine coordinated courses, of which at least five must be upper division and at least four must have been taken at UCLA (minimum 28 units). All courses must be taken for a letter grade. In addition, no more than two courses may be applied to both a major and a minor. Contact your academic counselor for the list of departments that will be offering minors in the 1994-95 school year.

## Supplemental Programs

You may choose from 12 different programs which are not degree-granting majors, but are sequences of supplemental courses designed to enhance your work in certain areas. Each of

these specializations must be taken jointly with an organized departmental or interdepartmental major:

African Studies  
 Asian American Studies  
 Business and Administration  
 Chicana and Chicano Studies  
 Computing, Specialization in (anthropology, cybernetics, economics, geography, linguistics, mathematics, psychology, sociology)  
 Diversified Liberal Arts  
 Education  
 International Relations  
 Labor and Workplace Studies  
 Organizational Studies  
 Urban Studies  
 Women's Studies

Detailed descriptions of the programs (except specialization in computing) are given under their respective headings later in this chapter. For descriptions of the specialization in computing, refer to the majors listed in parentheses above.

## Student Research Program (SRP)

For information on this program, see "Alternative Academics" in Chapter 2.

## Double Majors

If you are in good academic standing, you may be permitted to have a double major consisting of departmental majors from two departments within this college. They must both be completed within the maximum limit of 228 units, and you must obtain the approval of both departments.

With few exceptions, double majors in the same department are unacceptable. You must designate one of the two majors as the principal one for the purpose of satisfying general education requirements. No more than five upper division courses may be common to both majors.

Courses outside the division of the principal major which are required in preparation for that major may be used to satisfy general education requirements. Courses required for the secondary major (including preparation for the major) also may satisfy general education requirements.

## Changing Your Major

If you are in good academic standing and wish to change your major, you may petition to do so provided you can complete the new major within the 216-unit limit (228 for double majors and special programs). Petitions must be submitted to and approved by the department or committee in charge of the new major. Admission to certain majors may be closed or restricted; changes are normally not permitted if you are on probation or have begun your last term.

If you fail to attain a grade-point average of 2.0 (C) in preparation for the major or major courses,

you may be denied the privilege of entering or continuing in that major. Some departments may have higher grade-point requirements for their preparation and major courses; consult the appropriate department regarding minimum standards.

## The Study List

The required study load for undergraduate students in the College of Letters and Science is 12 to 16 units (three to four courses) per term. For exceptions, see "Minimum Progress" earlier in this section. Three courses are often recommended for students in the first term of the freshman year. All other students may carry four and one-half courses (18 units) without petition. After the first term, you may petition to enroll in as many as five courses if you attained at least a B average the preceding term in a program of at least three graded courses. First-term transfer students from any other campus of the University may carry excess Study Lists on the same basis as students who have completed one or more terms at UCLA; however, they are not encouraged to do so.

## Requirements for Bachelor's Degrees

Each student must meet three types of requirements for the Bachelor of Arts or Bachelor of Science degree: University requirements, college requirements, and department requirements (including preparation for the major and major requirements). For details on department requirements, see the department and major of your choice.

### University Requirements

For information on the Subject A or English as a Second Language (ESL) and American History and Institutions requirements, see "Undergraduate Degree Requirements" in Chapter 2.

### College Requirements

The College of Letters and Science has eight requirements which must be satisfied for the award of the degree: unit, major, scholarship, academic residence, English composition, quantitative reasoning, foreign language, and general education course requirements.

### Unit Requirements

You must satisfactorily complete for credit a minimum of **180 units** (45 courses) for the bachelor's degree. At least **72 units** (18 courses) of the 180 units must be **upper division (numbered 100-199)**. A maximum of 216 (228 for double majors and special programs) units is allowed. If you have advanced placement (transfer) credit, you may exceed the unit maximum by the amount of that credit.

## Scholarship and Major Requirements

You must attain at least a 2.0 (C) grade-point average in all courses undertaken at this University for receipt of the bachelor's degree. You must also attain a 2.0 GPA in a major and satisfy both the course and scholarship requirements of that major (including preparation for the major) in the College of Letters and Science.

### Structure of a Degree

Three types of degree requirements are included within the 180-unit minimum/216- or 228-unit maximum limits for the bachelor's degree:

#### University Requirements

- (1) Subject A or English as a Second Language (ESL)
- (2) American History and Institutions

#### College Requirements

- (1) English Composition or ESL Composition
- (2) Quantitative Reasoning
- (3) Foreign Language
- (4) General Education Course Requirements

#### Department Requirements

- (1) Preparation for the Major
- (2) Major Requirements

#### Electives

The remaining units, defined as electives, are courses which vary according to your interests and goals. When selecting your courses, keep the following degree criteria in mind:

#### Scholarship

You must attain an overall 2.0 minimum grade-point average in the 180/216 or 228 units required and must satisfy the scholarship requirements of your major department (usually a 2.0 average in the preparation and major courses, but it may be higher in the former, according to departmental requirements).

#### Academic Residence Requirement

See "Academic Residence Requirements" on next page.

#### Upper Division Unit Requirement

At least 72 units (18 courses) must be upper division (numbered 100-199).

## Academic Residence Requirements

Sixty-eight of the last 80 units completed for the degree must be earned in residence in the college. **No more than 16 of the 68 units may be completed in UCLA Summer Sessions.** While enrolled in the college you must complete at least 10 upper division courses (40 units), including six courses in the major. These academic residence requirements apply to all students, both continuing and transfer.

## English Composition Requirement

**Note:** You must complete the University's Subject A or English as a Second Language (ESL) requirement prior to completing the college's English Composition requirement.

You may satisfy the English Composition requirement by taking one course from English 3, 4, Humanities 2A, 2B, 2C. The course must be taken for a letter grade, and you must receive at least a C; a grade of C- is not acceptable. Humanities 2A, 2B, or 2C may be applied toward the humanities general education requirements; English 3 or 4 may not be applied.

The composition requirement may also be satisfied by scoring 4 or 5 on one of the College Entrance Examination Board (CEEB) Advanced Placement Tests in English or by passing the English 3 Proficiency Examination. Students scoring 660 or better on the CEEB English Composition Achievement Test are eligible for this proficiency examination.

You must satisfy the composition requirement within your first three terms in residence.

**Transfer Students** — You may take the English 3 Proficiency Examination (1) if you have completed a transferable English composition course with a Passed grade rather than a letter grade or (2) if you have completed, with a grade of C or better, a college-level English composition course that the Office of Undergraduate Admissions and Relations with Schools does not accept as equivalent to English 3. Like eligible freshmen, you must register for the examination in the Writing Programs Office, 271 Kinsey Hall, before the first day of enrollment for the term.

If you have credit for 90 or more units and have not satisfied the requirement, you are expected to include an acceptable composition course on your Study List during your first term in residence in the college. If you are required to take English 2 to satisfy the Subject A requirement, you should, on completion of that requirement, take an acceptable composition course in your second term in residence.

**English as a Second Language (ESL) Students** — If your native language is not English, you may satisfy the English Composition requirement by completing English as a Second Language 36 with a grade of C or better (C- or a Passed grade is not acceptable). Admis-

sion into course 36 is determined by a Composition Placement Test administered the first day of class each term.

## Quantitative Reasoning and Foreign Language Requirements

In the College of Letters and Science you must demonstrate basic skills in quantitative reasoning and satisfy the foreign language requirement.

**Note:** All courses taken to satisfy these requirements must be completed with a grade of Passed or C or better.

**Quantitative Reasoning** — May be satisfied by achieving an SAT mathematics score of 600 or better, a mathematics achievement score of 550 or better, or by completing one of the following courses: Anthropology 80; Biostatistics 100A, 100B, 100C, 100D; Computer Science 10C or 10F; Economics 40; Geography 40; Mathematics 1 or any higher numbered course except 38A, 38B, and 104; Philosophy 31; Political Science 6; Program in Computing 10A, 10B, 10C; Sociology 18; Statistics 50.

**Foreign Language** — May be satisfied by one of the following methods: (1) completing a college-level foreign language course equivalent to UCLA's level three or above **OR** (2) scoring 3, 4, or 5 on the CEEB Advanced Placement (AP) foreign language examination in French, German, or Spanish, thereby earning college credit **OR** (3) presenting a UCLA foreign language departmental examination score indicating competency through level three (consult the *Schedule of Classes* for times and places of these regularly scheduled examinations).

If you wish to demonstrate proficiency in a language which is taught in a UCLA department but for which there is no scheduled examination, contact the appropriate department to arrange for one. If you wish to take an examination in a language not taught at UCLA, contact the College Counseling Service.

The following language courses may be used to fulfill the foreign language requirement:

African Languages (Linguistics) 1A-1B-1C (Swahili); 7A-7B-7C (Zulu); 11A-11B-11C (Yoruba); 31A-31B-31C (Bambara); 41A-41B-41C (Hausa); 51A-51B-51C (Amharic)  
 Afrikaans (Germanic Languages) 105A, 105B  
 Ancient Near East (Near Eastern Languages) 120A-120B-120C (Ancient Egyptian); 140A-140B (Sumerian)  
 Arabic (Near Eastern Languages) 1A-1B-1C  
 Armenian (Near Eastern Languages) 101A-101B-101C, or 130A-130B and 131A  
 Berber (Near Eastern Languages) 101A-101B-101C  
 Bulgarian (Slavic Languages) 103A-103B-103C  
 Chinese (East Asian Languages) 1, 2, 3  
 Czech (Slavic Languages) 102A-102B-102C  
 Dutch (Germanic Languages) 103A-103B, 103C  
 French 1, 2, 3

German (Germanic Languages) 1, 2, 3  
 Greek (Classics) 1, 2, 3  
 Hebrew (Near Eastern Languages) 1A-1B-1C or 10A-10B-10C  
 Hungarian (Germanic Languages) 101A, 101B, 101C  
 Indigenous Languages of the Americas (Linguistics) 18A-18B-18C (Quechua)  
 Iranian (Near Eastern Languages) 1A-1B-1C (Persian)  
 Italian 1, 2, 3  
 Japanese (East Asian Languages) 1, 2, 3  
 Korean (East Asian Languages) 1, 2, 3  
 Latin (Classics) 1, 2, and 3, or 16 (Summer Sessions course)  
 Lithuanian (Slavic Languages) 101A-101B-101C  
 Polish (Slavic Languages) 102A-102B-102C  
 Portuguese (Spanish and Portuguese) 1, 2, 3  
 Romanian (Slavic Languages) 101A-101B-101C  
 Russian (Slavic Languages) 1, 2, and 3, or 11A-13B (two units each)  
 Scandinavian 1, 2, 3 (Swedish); 11, 12, 13 (Norwegian); 21, 22, 23 (Danish)  
 Semitics (Near Eastern Languages) 140A-140B, 141 (Akkadian)  
 Serbo-Croatian (Slavic Languages) 103A-103B-103C  
 Spanish (Spanish and Portuguese) 1, 2, 3  
 Turkic Languages (Near Eastern Languages) 101A-101B-101C (Turkish); 111A-111B-111C (Uzbek)  
 Ukrainian (Slavic Languages) 101A-101B-101C  
 Yiddish (Germanic Languages) 101A, 101B, 101C

## General Education (GE) Course Requirements

The general education requirements of the college are intended to introduce undergraduates to the richness and diversity of the various academic disciplines. Within the four major divisions of the college — humanities, physical sciences, social sciences, and life sciences — you are encouraged to explore the different possibilities for further university study. Whether or not you have a specific educational goal, general education requirements are designed to broaden your intellectual perspective and to set you on the path to becoming an educated member of society.

The set of GE course requirements you will follow are specified on the chart labeled "Courses to Fulfill GE Requirements" on the next pages. You must earn units in four courses in the humanities (literature, philosophy, language and linguistics, culture and civilization, the arts), three courses in the physical sciences, four in the social sciences (two from historical analysis and two from social analysis), and three courses in the life sciences. In the humanities, at least one course must be from literature and no more than two may be from any single subgroup. In the physical sciences, two courses must be complementary

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## Courses to Fulfill GE Requirements

See "Quantitative Reasoning and Foreign Language Requirements" on page 84 for courses to fulfill those requirements.

### (A) Humanities

Four courses, with at least one from Group A1 and no more than two courses from any single subgroup:

#### (1) Literature

- Classics** 40. Survey of Greek Literature in Translation  
41. Survey of Latin Literature in Translation  
**English** 10A. English Literature to 1660  
10B. English Literature, 1660-1832  
70. Major British Authors before 1800  
75. Major British Authors, 1800 to the Present  
80. Major American Authors  
85. The American Novel  
90. Shakespeare  
95A. Introduction to Poetry  
95B. Introduction to Drama  
95C. Introduction to Fiction  
96. The Short Story in England and America  
**French** 12. Introduction to Study of French Literature (in French)  
114A, 114B, 114C. Survey of French Literature (in French)  
**German (Germanic Languages)** 50A. Masterworks of German Literature in Translation: Medieval Period through Classicism  
50B. Masterworks of German Literature in Translation: Romanticism to the Present  
101A. Introduction to German Poetry (in German)  
101B. Introduction to German Drama (in German)  
101C. Introduction to German Narrative Prose (in German)  
**Humanities** 1A. World Literature: Antiquity to Early Middle Ages  
1B. World Literature: Late Middle Ages to the 17th Century  
1C. World Literature: Age of Enlightenment to the 20th Century  
1D. Great Books from the World at Large  
2A. Survey of Literature: Antiquity to Early Middle Ages  
2B. Survey of Literature: Late Middle Ages to the 17th Century  
2C. Survey of Literature: Age of Enlightenment to the 20th Century  
**Portuguese (Spanish and Portuguese)** 40A, 40B. Portuguese, Brazilian, and African Literature in Translation  
120A, 120B. Survey of Portuguese Literature (in Portuguese)  
130A, 130B. Survey of Brazilian Literature (in Portuguese)  
**Russian (Slavic Languages)** 25. The Russian Novel in Translation  
**Scandinavian** 50. Introduction to Scandinavian Literature  
**Spanish (Spanish and Portuguese)** 60A, 60B, 60C. Hispanic Literatures in Translation  
120A, 120B. Survey of Spanish Literature (in Spanish)  
136A, 136B. Survey of Spanish-American Literature (in Spanish)

#### (2) Philosophy

- Philosophy** 1. Beginnings of Western Philosophy  
2. Introduction to Philosophy of Religion  
4. Philosophical Analysis of Contemporary Moral Issues  
6. Introduction to Moral and Political Philosophy  
7. Introduction to Philosophy of Mind  
8. Introduction to Philosophy of Science  
21. Skepticism and Rationality  
22. Introduction to Ethical Theory

#### (3) Language and Linguistics

- Linguistics** 1. Introduction to Study of Language  
10. Structure of English Words  
**Language:** Formal University foreign language instruction at level four or higher; no more than one course at level four or higher may be used  
**Spanish and Portuguese** M35. Spanish, Portuguese, and Nature of Language

#### (4) Culture and Civilization

- Chicana and Chicano Studies** 10A. Introduction to Chicano Life and Culture  
**Chinese (East Asian Languages)** 50. Chinese Civilization  
**East Asian Languages and Cultures** 60. Introduction to Buddhism  
**Folklore and Mythology** 15. Introduction to American Folklore Studies

- German (Germanic Languages)** 100A. German Civilization and Culture before 1700  
100B. Modern German Civilization and Culture from 1700 to 1919  
100C. German Civilization and Culture in the 20th Century  
**History** \*9A. Introduction to Asian Civilizations: History of India  
\*9C. Introduction to Asian Civilizations: History of Japan  
\*9D. Introduction to Asian Civilizations: History of the Near and Middle East  
\*10A, \*10B. Introduction to Civilizations of Africa  
\*11A, \*11B. History of China  
**Italian** 46. Italian Cinema and Culture  
**Japanese (East Asian Languages)** 50. Japanese Civilization  
**Jewish Studies (Near Eastern Languages)** 10. Social, Cultural, and Religious Institutions of Judaism  
**Korean (East Asian Languages)** 50. Korean Civilization  
**Near Eastern Languages** 50A. Introduction to Near Eastern Languages and Cultures: Ancient Near East  
50B. Introduction to Near Eastern Languages and Cultures: Medieval Near East  
50C. Introduction to Near Eastern Languages and Cultures: Modern Near East  
**Russian (Slavic Languages)** 99A. Introduction to Russian Civilization  
99B. Soviet Civilization  
**Spanish and Portuguese** M42. Civilization of Spain and Portugal  
M44. Civilization of Spanish America and Brazil

#### (5) The Arts

- Art History** 50. Ancient Art  
51. Medieval Art  
54. Modern Art  
55A. Africa, Oceania, and Native America  
55B. Arts of Pre-Columbian America  
56A. Art of India and Southeast Asia  
56B. Introduction to Chinese Art  
57. Renaissance and Baroque Art  
**Dance** 134A. History of Dance in Western Culture, Origins to 1600  
134B. History of Dance in Western Culture, 1600 to the Present  
181A. Dance Cultures of Asia  
182. Dance in Africa and the African Diaspora  
C187. Dance in Native American Cultures  
**Design** 30A. Nature of Design  
**Ethnomusicology and Systematic Musicology** 20A, 20B, 20C. Musical Cultures of the World  
108A, 108B. Music of Latin America  
M110A, M110B. The Afro-American Musical Heritage  
113. Music of Brazil  
136A, 136B. Music of Africa  
147. Survey of Classical Music in India  
174. Aesthetics of Music  
**Film and Television** 106A. History of the American Motion Picture  
106B. History of the European Motion Picture  
106C. History of African, Asian, and Latin American Film  
106D. Development of Film in Europe and the U.S. from WWI through the Depression  
106E. Development of Film in Europe and the U.S. from WWII to the Present  
108. History of Documentary Film  
112. Film and Social Change  
**Music** 15. Art of Listening  
**Musicology** 2A, 2B. Introduction to the Literature of Music  
13. 20th-Century Music of the Western World  
133. Bach  
134. Beethoven  
135A, 135B, 135C. History of Opera  
**Theater** 5A. History and Drama of Theater: Primitive Times to 1640  
5B. History and Drama of Theater: 1640 to 1900  
5C. History and Drama of Theater: 1900 to the Present  
102E. Theater of Non-European World  
104C. History of American Theater: WWI to the Present

(continued on page 86)

## Courses to Fulfill GE Requirements (continued)

### (B) Physical Sciences

Three courses from the following, two of which must be complementary and one of which must have a laboratory and/or demonstration component:

- Astronomy** 2A, 2B. Introduction to the Physical Universe
- 3. Astronomy: Nature of the Universe
- 4. Universe of Stars and Stellar Systems
- 5. Life in the Universe
- 6. Cosmology: Our Changing Concepts of the Universe
- 81. Astrophysics I: Stars and Nebulae
- 82. Astrophysics II: Stellar Evolution, Galaxies, and Cosmology
- Atmospheric Sciences** 2. Air Pollution
- 3. Introduction to the Atmospheric Environment
- 4. California Weather and Climate
- 5. Climates of Other Worlds
- 6. Climate and Climatic Change
- Chemical Engineering** 2. Technology and the Environment
- Chemistry and Biochemistry** 2. Introductory Chemistry
- 11A, 11B. General Chemistry
- 11BL. General Chemistry Laboratory
- 15. Survey of Organic Chemistry and Biochemistry
- 15L. Laboratory in Elementary Organic Chemistry and Biochemistry
- Earth and Space Sciences** 1. Introduction to Earth Science
- 2. Earth History
- 5. Earth Science and Society: Geological Ecological Interactions
- 8. Earthquakes
- 9. Origin and Evolution of Solar System
- \*15. Introduction to Oceanography
- Geography** 1. Physical Environment
- Mathematics** 2. Finite Mathematics
- 3A, 3B. Calculus for Life Sciences Students
- 5. Calculus for Liberal Arts Students
- 31A, 31B. Calculus and Analytic Geometry
- 31AQ, 31BQ. Calculus and Analytic Geometry with Computer Laboratory
- 31E. Calculus for Economics Students
- Mechanical, Aerospace, and Nuclear Engineering** 1. Energy: Resources, Conversion, Utilization, and the Environment
- 2. Toxic Waste Control
- Physics** 3A. General Physics: Mechanics of Solids and Fluids
- 3B. General Physics: Heat, Sound, Electricity and Magnetism
- 3C. General Physics: Light, Relativity, and Modern Physics
- 6A. Physics for Life Sciences Majors: Mechanics
- 6B. Physics for Life Sciences Majors: Electricity and Magnetism
- 6C. Physics for Life Sciences Majors: Light and Modern Physics
- 8A. Physics for Scientists and Engineers: Mechanics
- 8B. Physics for Scientists and Engineers: Waves, Sound, Heat
- 8C. Physics for Scientists and Engineers: Electricity and Magnetism
- 10. Physics

Complementary courses include Astronomy 2A/2B, 3/4, 3/5, 3/6, 81/82; Atmospheric Sciences 2/3, 3/4, 3/5, 3/6, 5/6; Chemistry and Biochemistry 11A/11B, 11A/15; Earth and Space Sciences 1/2, 1/9, 1/15, 1/Geography 1; Mathematics 3A/3B, 3A/31B, 3A/31E, 3B/31A, 31A/31B, 31A/31E; Mechanical, Aerospace, and Nuclear Engineering 1/2, 2/Chemistry and Biochemistry 2; Physics 3A/3B, 6A/6B, 6A/8B, 6A/8C, 6B/8A, 8A/8B, 8A/8C.

Courses with a laboratory and/or demonstration component include Astronomy 2A, 2B, 3, 81, 82, Atmospheric Sciences 2, 3, Chemistry and Biochemistry 11BL, 15L, Earth and Space Sciences 1, 2, 15, Geography 1, Mathematics 31AQ, 31BQ, Mechanical, Aerospace, and Nuclear Engineering 1, 2, Physics 3A, 3B, 3C, 6A, 6B, 6C, 8A, 8B, 8C, 10.

### (C) Social Sciences

Four courses (two each from Groups 1 and 2):

#### (1) Historical Analysis

Two courses from a single sequence are recommended:

- Classics** 10. Survey of Classical Greek Culture
- 20. Survey of Roman Civilization
- History** 1A, 1B, 1C. Introduction to Western Civilization
- 3A, 3B, 3C. Introduction to History of Science
- 3D. Themes in History of Medicine
- 4. Introduction to History of Religions
- 5A, 5B. Survey of British History
- 6A, 6B, 6C. History of the American Peoples
- 7A, 7B. Survey of Political History of the U.S.

- 8B. Latin America: Reform and Revolution
- 8C. Latin American Social History
- \*9A. Introduction to Asian Civilizations: History of India
- \*9C. Introduction to Asian Civilizations: History of Japan
- \*9D. Introduction to Asian Civilizations: History of the Near and Middle East
- \*10A, \*10B. Introduction to Civilizations of Africa
- \*11A, \*11B. History of China
- Political Science** 10. Introduction to Political Theory

#### (2) Social Analysis

- Afro-American Studies** M5. Social Organization of Black Communities
- Anthropology** 8. Archaeology: An Introduction
- 9. Sociocultural Anthropology
- 33. Culture and Communication
- Chicano and Chicano Studies** 10B. Chicanos in American Society
- Communication Studies** 10. Introduction to Communication Studies
- Economics** 1, 2. Principles of Economics
- 5. Introductory Economics
- Geography** 3. Cultural Geography
- 4. Introduction to Economic Geography
- Political Science** 20. World Politics
- 30. Introduction to Political Economy
- 40. Introduction to Politics
- 50. Introduction to Comparative Politics
- Psychology** 10 (Introductory Psychology) or 11 (Principles of Psychology)
- Social Sciences** 20. Racial Minorities in the U.S.
- Sociology** 1. Introductory Sociology
- 2. Changing Society and Making History
- 3. Sociology of Everyday Life
- 4. Jobs and Careers: Sociological Approach
- M5. Social Organization of Black Communities
- 31. Dilemmas of Third World Development
- Women's Studies** 10. Introduction to Women's Studies: Feminist Perspectives on Women and Society

### (D) Life Sciences

Three courses from the following, one of which must have a laboratory and/or demonstration component:

- Anthropology** 7 (Human Evolution) or 12 (Principles of Human Evolution: Comparative Analysis)
- 10. Principles of Human Evolution: Genetic Basis
- 15. Human Biology and Behavior
- Biology** 2. Principles of Modern Biology
- 5. Biology of Organisms
- 5L. Organismic and Environmental Biology Laboratory
- 6. Ecology, Evolution, and Behavior
- 9. Introduction to Cell and Molecular Biology
- 10. Plants and Civilization
- 13. Evolution of Life
- 20. Introduction to Human Heredity
- 21. Field Biology
- 25. Oceans
- 30. Biology of Cancer
- 40. AIDS and Other Sexually Transmitted Diseases
- 70. Genetic Engineering and Society
- Earth and Space Sciences** \*15. Introduction to Oceanography
- 16. Principles of Paleontology
- 17. Dinosaurs and Their Relatives
- Geography** 2. Biogeography
- 5. People and the Earth's Ecosystems
- Microbiology and Molecular Genetics** 6. Introduction to Microbiology
- 7. Developments in Biotechnology
- Physiological Science** 5. Issues in Human Physiology: Diet and Exercise
- 6. The Human Machine: Physiological Processes
- 13. Introduction to Human Anatomy
- Psychology** 15. Introductory Psychobiology

Courses with a laboratory and/or demonstration component include Biology 2, 5, 5L, 6, 10, 20, 21, Earth and Space Sciences 15, 16, 17, Geography 2, 5, Physiological Science 5, 13.

All honors sections of the above courses also fulfill GE requirements.

**Honors Collegium:** Inquire at the Honors Programs Office (A311 Murphy Hall) for information on courses which satisfy any of the areas of the general education requirements.

and one must include a laboratory and/or demonstration component. In the life sciences, one course must include a laboratory and/or demonstration component.

All students entering UCLA in Fall Quarter 1993 with 45 or more quarter units are not required to complete the complementary course requirement in physical sciences.

Courses required to satisfy the major or other courses taken in the major department may not be used to satisfy the general education requirements. However, courses outside the major which are required as preparation for a major may be used to satisfy these requirements.

**Course Exemptions** — Students majoring in the humanities are exempt from two courses, one in their major subgroup and one other humanities course. Students majoring in the physical sciences are exempt from two courses in the physical sciences group. Students in the social sciences are exempt from two courses in the subgroup of their major, and students in life sciences are exempt from two courses in the life sciences grouping. At least 14 courses (12, with exemptions) must be completed.

**Course Substitutions** — Two lower division seminars which have been approved for GE credit may be substituted for courses on the "Courses to Fulfill GE Requirements" list. You may make no more than one such substitution per group (humanities, physical sciences, social sciences, life sciences). An annual list of

GE seminars is published in the *General Education Handbook*, and descriptions are listed in the quarterly *Schedule of Classes* under "Seminars and Special Programs for Undergraduates."

**Advanced Placement Credit** — For application of advanced placement (AP) credit on the general education requirements, see the AP chart below or consult the College Counseling Service.

**Reciprocity with Other UC Campuses** — Students who transfer to UCLA from other UC campuses and have met all general education requirements prior to enrolling at UCLA are not required to complete the college's GE requirements at UCLA. Written verification from the college dean at the other UC campus is required. Consult a Letters and Science counselor regarding your eligibility for this option.

**Intersegmental General Education Transfer Curriculum (IGETC)** — Transfer students from non-UC schools have the option to fulfill UCLA's lower division general education requirements by completing the Intersegmental General Education Transfer Curriculum prior to transfer. The curriculum consists of a series of subject areas and types of courses which have been agreed on by the University of California and the California community colleges. Although general education or transfer core courses are graduation requirements rather than admission requirements, you are advised to fulfill them prior to transfer. The IGETC sig-

nificantly eases the transfer process, as all of UCLA's general education requirements are fulfilled when you complete it. If you select the IGETC, you must complete it entirely before enrolling at UCLA. Otherwise, you must fulfill the College of Letters and Science general education requirements. The Office of Undergraduate Admissions and Relations with Schools determines, at the point of admission, your completion of the IGETC.

### General Education Groupings by Major

For the purpose of these requirements, departmental and interdepartmental majors are classified in the divisions listed below. Not all courses within a department apply on GE requirements in the division of the major (e.g., psychology is listed as a life science; however, Psychology 10 appears as a social science under social analysis).

#### (A) Humanities

A1: *Literature*

African Languages  
Arabic  
Chinese  
English  
English/Greek  
English/Latin  
French  
German  
Greek

(continued on page 89)

## Credit for Advanced Placement Tests

Test	UCLA Course Equivalents*	Credit Allowed on GE Requirements
Art		No application for art
Art History	8 units	
Art Studio: General Portfolio or Drawing Portfolio	8 units for either general or drawing portfolio	
Biology	Biology 2 (4 units) plus 4 unassigned units	4 units toward life sciences requirement
Chemistry	8 units	No application for chemistry
Computer Science A Test	2 unassigned units	No application for computer science
Computer Science AB Test	4 unassigned units	Satisfies quantitative reasoning requirement
Economics, Macroeconomics	Score 3 — 4 unassigned units Score 4 or 5 — Economics 2 (4 units)	Score 3 — No application for economics Score 4 or 5 — 4 units toward social analysis requirement
Economics, Microeconomics	Score 3 — 4 unassigned units Score 4 or 5 — Economics 1 (4 units)	Score 3 — No application for economics Score 4 or 5 — 4 units toward social analysis requirement

**Note:** You may not repeat for units or grade points any AP Test credit that has been given UCLA course number equivalency (e.g., History 7A-7B).

(continued on page 88)

\*All UCLA course equivalents consist of lower division advanced placement units.

## Credit for Advanced Placement Tests (continued)

Test	UCLA Course Equivalents*	Credit Allowed on GE Requirements
English Language and Composition or Composition and Literature**	Score 3 — 8 unassigned units Score 4 — English 3 (8 units) Score 5 — English 3 and 4 (8 units)	Score 3 — Satisfies Subject A requirement Score 4 or 5 — Satisfies Subject A and English composition requirements
Government and Politics, U.S.	Political Science 1 (4 units)	4 units toward social analysis requirement; satisfies American History and Institutions requirement
Government and Politics, Comparative	Political Science 50 (4 units)	4 units toward social analysis requirement
History, U.S.	Score 3 — 8 units Score 4 or 5 — History 7A-7B (8 units) Score 3, 4, or 5 — Satisfies American History and Institutions requirement	Score 3 — No application for U.S. history Score 4 or 5 — 8 units toward historical analysis requirement
History, European	History 1C (4 units) plus 4 units	4 units toward historical analysis requirement
Language, French French Language	Score 3 — French 4 (8 units total) Score 4 — French 5 (8 units total) Score 5 — French 6 (8 units total)	4 units toward language and linguistics requirement
French Literature	8 units	No application for French literature
Language, German	Score 3 — German 3 (8 units) Score 4 — German 4 (8 units) Score 5 — German 5 (8 units)	Score 3 — No application for German Score 4 or 5 — 4 units toward language and linguistics requirement
Latin (Vergil, Catullus/ Horace)	Score 3 — Latin 1 Score 4 or 5 — Latin 3	Score 4 or 5 — Satisfies foreign language requirement
Language, Spanish Spanish Language	Score 3 — Spanish 4 (8 units) Score 4 — Spanish 5 (8 units) Score 5 — Spanish 6 (8 units)	4 units toward language and linguistics requirement
Spanish Literature	8 units	No application for Spanish literature
Mathematics (AB Test)** Calculus	Score 3 — 4 units Score 4 or 5 — Mathematics 31A (4 units)	4 units toward physical sciences requirement 4 units toward physical sciences requirement
Mathematics (BC Test)** Calculus	Score 3 — 8 units Score 4 or 5 — Mathematics 31A, 31B (8 units)	8 units toward physical sciences requirement 8 units toward physical sciences requirement
Music Music Literature** Music Theory**	8 units 8 units	No application for music
Physics B Test ** C Test**	8 units 4 or 8 units	No application for physics
Psychology	4 unassigned units	No application for psychology

**Note: You may not repeat for units or grade points any AP Test credit that has been given UCLA course number equivalency (e.g., History 7A-7B).**

\*All UCLA course equivalents consist of lower division advanced placement units.  
\*\*Students who take both tests receive a maximum of eight units of credit.



Greek and Latin  
 Hebrew  
 Italian (including Italian and Special Fields)  
 Japanese  
 Latin  
 Portuguese  
 Russian Language and Literature  
 Scandinavian Languages  
 Slavic Languages and Literatures  
 Spanish  
 Spanish and Portuguese

*A2: Philosophy*

Philosophy

*A3: Language and Linguistics*

French and Linguistics  
 Linguistics (including all Linguistics and special fields majors)  
 Spanish and Linguistics

*A4: Culture and Civilization*

Ancient Near Eastern Civilizations  
 Classical Civilization  
 Iranian Studies  
 Jewish Studies  
 Near Eastern Studies  
 Religion, Study of  
 Russian Studies

*A5: The Arts*

Art History  
 Musicology  
 World Arts and Cultures

**(B) Physical Sciences**

Applied Mathematics  
 Astrophysics  
 Atmospheric Sciences  
 Biochemistry  
 Chemistry  
 Chemistry/Materials Science  
 Cybernetics  
 Earth Sciences  
 Economics/System Science  
 General Chemistry  
 General Mathematics  
 General Physics  
 Geology (including all specialization options)  
 Geophysics (including all specialization options)  
 Mathematics  
 Mathematics/Applied Science  
 Mathematics of Computation  
 Physics

**(C) Social Sciences**

*C1: Historical Analysis*

History  
 History/Art History

*C2: Social Analysis*

Afro-American Studies  
 Anthropology  
 Chicana and Chicano Studies  
 Communication Studies  
 Development Studies  
 East Asian Studies  
 Economics (including all specialization options except Economics/System Science)

Geography  
 Geography/Environmental Studies  
 Latin American Studies  
 Political Science  
 Sociology  
 Women's Studies

**(D) Life Sciences**

Biology  
 Cell and Molecular Biology  
 Cognitive Science  
 Microbiology and Molecular Genetics  
 Neuroscience  
 Physiological Science  
 Psychobiology  
 Psychology

**Credit Limitations**

**Note:** Transfer students with credit from other institutions (advanced standing credit) receive a Degree Progress Report (DPR) from the Office of Undergraduate Admissions and Relations with Schools indicating the transferable units from their former institution(s); however, the following credit limitations may reduce the total number of transferred units which will apply toward the degree in the College of Letters and Science. Consult with a counselor in the College Counseling Service regarding these limitations.

The following credit limitations apply for all students enrolled in the college. In most cases units are not deducted until the final term before graduation. Consult a counselor in the College Counseling Service if you have questions.

**Subject A**

If you do not satisfy the Subject A requirement prior to enrolling at UC, you must pass an approved course or other program prescribed by your UC campus of residence. Only after satisfying the Subject A requirement can you take for transfer credit an English composition course *after* enrolling at UCLA. Consult a college counselor regarding Subject A equivalent courses from other UC campuses.

**Community College**

After completing 105 quarter units (26¼ courses) toward the degree in all institutions attended, you are allowed no further unit credit for courses completed at a community college.

**Physical Education**

No more than four units in physical education activities courses may be applied toward the bachelor's degree.

**300- and 400-Level Courses**

No more than two courses (eight units) in the 300 and 400 series of courses may be applied toward the bachelor's degree. Credit is not granted for X300 and X400 courses taken in UCLA Extension.

**Performance Courses**

No more than 12 units of music and/or dance performance courses (Dance 71B through 79Z, C171B through C179Z, Ethnomusicology and Systematic Musicology 91A-91Z, and Music 90A through 90N) may be applied toward the bachelor's degree whether taken at UCLA or another institution.

**Foreign Language**

Credit will not be allowed for completing a less advanced course in grammar and/or composition after you have completed a more advanced course. College credit for an international student's native language and literature is allowed for (1) courses taken in native colleges and universities or (2) upper division (advanced language courses only) and graduate courses taken at the University of California or another English-speaking institution of approved standing (no credit is allowed for lower division courses).

**College Level Examination Programs**

Credit earned through the College Level Examination Program (CLEP) and through the California State University English Equivalency Examination may not be applied toward the bachelor's degree.

**Advanced Placement (AP) Tests**

Advanced Placement (AP) Test credit may not be applied toward a degree unless you had less than 36 units of credit at the time of the examination(s).

**ROTC Courses**

For students contracted in the Aerospace Studies Department, 36 units of aerospace studies credit may be applied toward the 180-unit minimum required for the degree; for students contracted in the Military Science Department, 26 units of military science credit may be applied; for students contracted in the Naval Science Department, 26 units of naval science credit may be applied.

**Independent Study Courses**

No more than two courses (eight units) of credit may be taken per term in special independent study courses. The total number of units allowed in such courses for a letter grade is 16; see specific restrictions under each departmental listing.

**Physics 3A, 6A, 8A, 10**

Any two or more courses from Physics 3A, 6A, 8A, and 10 are limited to a total of six units of credit.

**Statistics**

No credit is allowed for more than one lower division course in statistics (Anthropology 80, Economics 40, Geography 40, Political Science 6, Psychology 41, Sociology 18, Statistics 50) or for more than one sequence of such courses whether taken at UCLA or another institution.

## Education Abroad Program

Students participating in the Education Abroad Program may receive a maximum of 48 units of credit toward the degree in addition to the eight units maximum allowable for the Intensive Language Program.

## Credit by Examination

Within the College of Letters and Science, eligibility for credit by examination is usually limited to students who have been approved as Departmental Scholars or who are admitted to a departmental honors program or UCLA Honors Programs.

You may petition for credit by examination for one course at a time. The examination for that course must be taken successfully before you may petition for credit by examination in another course. Petitions for credit by examination (with fee) are available only through an appointment with a counselor in the Honors Programs Office. Approval is given or withheld by the dean of the Division of Honors and Undergraduate Programs who may limit the number of such petitions you present.

## Honors

### College Honors

College Honors is the highest academic recognition the College of Letters and Science confers on its undergraduates. The College Honors program provides the exceptional Letters and Science undergraduate an opportunity to pursue individual excellence.

College Honors is awarded to graduating seniors with an overall University of California grade-point average of 3.5 or better who have completed either 44 units of honors coursework or 36 units of honors coursework that include a senior research project/thesis based on original research. With the assistance of Honors Programs counselors, you integrate this coursework throughout your undergraduate education with other University, college, and major requirements for the bachelor's degree. In this way, these units need not be above and beyond your other academic commitments.

Students in the College Honors program are entitled to specialized counseling within the division, some preferential preenrollment in classes each term, access to specially designed honors classes, eligibility for unique scholarships and research stipends, attendance at special forums, speeches, and events, counseling on graduate and preprofessional programs, graduate library privileges, and a filing and mailing service for letters of recommendation. Incoming freshmen who are eligible for College Honors based on SAT scores and GPA are also offered preferred on-campus student housing for the first year.

To qualify for College Honors, entering freshmen must (1) have an overall GPA of 3.85 or better and an SAT score of 1,300 or better (on

one test date) or an ACT score of 31 or better or (2) graduate in the top three percent of their high school class or (3) qualify through the Honors Programs Educational Enhancement Program (see below). Certain entering transfer students may be admitted with a transfer GPA of 3.85. Continuing UCLA and transfer students with at least 12 or more graded units at UCLA and a cumulative UC GPA of 3.5 or better who can complete the honors course requirements prior to graduation are encouraged to participate, as are both regularly qualified and potentially successful underrepresented minority students.

The Educational Enhancement Program offers low-income, minority, disabled, and other nontraditional students who might not otherwise be able to participate an opportunity to qualify for UCLA's College Honors program. Contact the Honors Programs Office for more information.

You may apply for admission to College Honors at A311 Murphy Hall. For further information, attend one of the group meetings offered regularly by the Honors Programs Office.

### Honors at Graduation

Honors are awarded according to your overall grade-point average at graduation. **To be eligible, you must have completed at least 90 University of California units for a letter grade.** Coursework taken on the Education Abroad Program also is applied toward honors at graduation. The levels of honors and the requirements for each level are: *cum laude*, an overall average of 3.5; *magna cum laude*, 3.65; *summa cum laude*, 3.85.

### Dean's Honors List

The Dean's Honors List recognizes high scholastic achievement in any one term. The following criteria are used to note Dean's Honors List on the student records: (1) a 3.75 GPA in any one term with at least 12 graded units and no grade of NP or I or (2) a 3.66 GPA and at least 56 grade points during the term, with no grade of NP or I. Dean's Honors List is automatically recorded on your transcript.

### Departmental Scholar Program

Departments may nominate exceptionally promising undergraduate students (juniors and seniors) as UCLA Departmental Scholars to pursue bachelor's and master's degrees simultaneously.

Qualifications include completion of 24 courses (96 quarter units) at UCLA or the equivalent at a similar institution, the requirements in preparation for the major, and a UC cumulative GPA of 3.5 or better. You must also have at least one term's coursework remaining at UCLA. To obtain both the bachelor's and master's degrees you must be provisionally admitted to the Graduate Division, fulfill requirements for each program, and maintain a minimum B average. No course may be used to

fulfill requirements for both degrees. If you are interested in becoming a Departmental Scholar, consult your department well in advance of application dates for graduate admission (see the Calendar at the beginning of this catalog). For further information, consult the Honors Programs Office.

### Honors Collegium

The Honors Collegium is a unique and innovative educational alternative designed primarily for students in their freshman and sophomore years. Some upper division courses are also offered. Refer to Honors Collegium later in this chapter for a complete description of the program.

### Honors Programs Office

The Honors Programs Office, located in A311 Murphy Hall (310-825-1553, 825-3786), provides academic counseling and services for College Honors students, Departmental Scholars, Education Abroad Program students, students pursuing individual majors, and students participating in the High School Scholars program. The division also provides counseling for Regents Scholars, National Merit Scholars, and Alumni Scholars during their first year of attendance. Services offered include academic counseling, degree checks, assistance with petitions and, for College Honors students only, letters describing the program to graduate and professional schools.

A variety of scholarships and awards for qualified continuing students and graduating seniors is also available.

In addition, the Honors Programs Office administers Phi Beta Kappa (national honor society).

## Preparing for a Professional School

The programs that follow are not degree programs in the College of Letters and Science. The purpose of each grouping of courses is to assist you if you plan to apply to a professional school at the end of your sophomore (90 units) or junior (135 units) year.

If you are not accepted by a professional school, you must declare a major in the College of Letters and Science and complete the requirements for a degree without exceeding 216 units.

New students entering these curricula are listed as "undeclared" majors and are advised in the college unless an adviser is named below in the presentation of the curriculum.

### Preprofessional/Pregraduate Advising Office

Information and counseling on preparing for professional schools and assistance in filing applications and preparing for interviews are available through the Preprofessional/Pre-

graduate Advising Office, A316 Murphy Hall. Workshops, reference letter services, and MCAT, DAT, AMCAS, LSAT, GRE, GMAT, and other applications are available. For more information, call (310) 825-1817.

### Predental Curriculum: Three Years

The College of Letters and Science offers a predental curriculum designed to fulfill the basic educational requirements for admission to several dental schools and the general educational requirements of the College of Letters and Science. You should determine and satisfy the specific requirements of the dental schools to which you expect to apply.

To be adequately prepared for the predental curriculum, you should take the following subjects in high school: English, history, mathematics (algebra, geometry, and trigonometry), chemistry, physics, and foreign language.

The 135 quarter units of work required for admission to the UCLA School of Dentistry in this curriculum include the following:

**General University Requirements:** (1) Subject A; (2) American History and Institutions.

**Specific UCLA School of Dentistry Requirements:** (1) Biology 5, 5L, 9, 108; (2) Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL, 132A and 132B/132BL and 153A/153L (or the former 21 and 23 and 25); (3) English 3, 4; (4) Physics 3A, 3B, and 3C, or 6A, 6B, and 6C, or 8A, 8B, and 8C; (5) Psychology 10.

Social sciences and humanities courses such as anthropology, history, economics, psychology, political science, appreciation of art and/or music, and philosophy should also be included.

For further information, consult *Admissions Requirements of U.S. and Canadian Dental Schools*, AADS, 1625 Massachusetts Avenue NW, Suite 101, Washington, DC 20036. Sample copies of the Dental Admission Test (DAT) are available in the Preprofessional/Pregraduate Advising Office (310-825-1817).

### Predental Hygiene Curriculum: Two Years\*

The University offers a four-year program in dental hygiene leading to the degree of Bachelor of Science. The first two years may be taken at Los Angeles; the last two years must be taken at the School of Dentistry at the University of California, San Francisco. Admission to UCSF is by competitive application.

The 90 quarter units of work required for admission to the School of Dentistry at UCSF include specific requirements as follows (the courses referred to are UCLA courses which fulfill the requirements):

**Curriculum Requirements:** (1) Subject A; (2) American History and Institutions (the examination in American History and Institutions may be taken at the UCSF School of Dentistry, but it is preferable to satisfy the requirements in the predental program); (3) Biology 5, 5L, 9, 108; (4) Chemistry and Biochemistry 11A, 11B/11BL, 132A and 132B/132BL and 153A/153L (or former 21 and 23 and 25); (5) one year of English which includes English 3; (6) Psychology 10 and one additional psychology course; (7) 16 units in social sciences and humanities, including foreign language (one course in speech and one in sociology are required). Courses in anatomy and physiology are strongly recommended. For more information, call the Preprofessional/Pregraduate Advising Office at (310) 825-1817.

### Premedical Studies: Four Years

If you intend to apply for admission to a medical school and wish to complete the requirements for a bachelor's degree before such admission, you should select a major within the College of Letters and Science. *Medical schools have no preference as to major. You should choose the major in which you are most interested and can do best.* In addition to fulfilling the requirements of the selected major, you should satisfy the specific requirements for medical schools to which you expect to apply.

High school preparation for premedical studies at the University should include English, three units; U.S. history, one unit; mathematics, three and one-half units; chemistry, one unit; physics, one unit; biology, one unit; foreign language (preferably French or German), two units. It is desirable that a course in freehand drawing be taken in high school.

The following courses are usually required for admission to the UCLA Medical School: (1) two years of college biology to include the study of organismic, cellular, molecular, developmental, and genetic biology, including at least one year of laboratory courses and one year of upper division courses (Biology 5 and 9, plus additional lower and upper division life sciences courses equivalent to the general requirements, are required; note that Biology 5L is a prerequisite to upper division biology laboratory courses); (2) Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL, 132A and 132B/132BL and 153A/153L (or former 21 and 23 and 25); (3) 12 quarter units of English, including at least one course in English composition; (4) Physics 3A, 3B, and 3C, or 6A, 6B, and 6C, or 8A, 8B, and 8C. Courses in physical chemistry and calculus are strongly recommended. Course requirements for admission to other University of California medical schools vary slightly.

Because requirements for admission to medical schools outside the University of California also vary somewhat, you should consult the following publications: *Medical School Admission Requirements, U.S. and Canada*, Association of American Medical Colleges, 2450 N

Street NW, Washington, DC 20037-1126; *The Education of Osteopathic Physicians*, AACOM, 6110 Executive Boulevard, Suite 405, Rockville, MD 20852; and *The New MCAT Student Manual* (also an AAMC publication available at the above AAMC address). For more information, call the Preprofessional/Pregraduate Advising Office at (310) 825-1817.

### Prenursing Curriculum: Two Years

The University offers a four-year course of study leading to the Bachelor of Science degree in Nursing. The prenursing curriculum in the College of Letters and Science is designed to prepare you for the program in the UCLA School of Nursing. You should apply to the School of Nursing when you have completed or have in progress 84 quarter credits, including the prenursing courses listed below with grades of C or better, and a cumulative grade-point average of at least 2.8. Since you must apply during the Fall Quarter of the year prior to the year in which you wish to be enrolled, you must present your proposed curriculum for the remaining terms.

Because enrollment in the UCLA School of Nursing is limited, you should become familiar with the admission requirements as early as possible. Attend **open counseling sessions** in the UCLA School of Nursing (times are posted in the Office of Student Affairs, 2-200 Factor Building, 310-825-7181) and those given by the Preprofessional/Pregraduate Advising Office (posted outside A316 Murphy Hall, 310-825-1817).

New students admitted to the college in this curriculum should declare prenursing as their major. Weekly open counseling sessions are available. Students in the college who do not transfer to the UCLA School of Nursing must declare a major and be able to complete all degree requirements within 216 units.

**Prenursing Requirements for the UCLA School of Nursing:** (1) Anthropology 9; (2) Biology 5, 9; (3) Chemistry and Biochemistry 11A, 15, 15L; (4) Community Health Sciences 130; (5) English 3; (6) Microbiology and Molecular Genetics 6/6L or 101; (7) Physics 10 or one year of high school physics; (8) Physiological Science 13; (9) Psychology 10, 15; (10) Sociology 1; (11) one four-unit humanities course from literature, philosophy, language and linguistics, culture and civilization, or the arts; (12) recommended electives in the social and life sciences. All required prenursing courses must be completed for a letter grade.

### Preoptometry Curriculum: Three Years

A three-year program designed to prepare you for admission to optometric schools may be completed in the College of Letters and Science. If you are planning to transfer to the School of Optometry at Berkeley, you should contact Assistant Dean Carter of the School of Optometry, University of California, Berkeley,

\*The UCSF School of Dentistry reserves the right to limit enrollment if applications exceed available facilities and to require interviews and aptitude tests if they are necessary in the selection of the class. For further information, see the *Announcement of the School of Dentistry, UC San Francisco*.

CA 94720, (510) 642-9537, as early in your preprofessional studies as possible.

You will be adequately prepared for preoptometric studies if you have taken the following subjects in high school: English, history, mathematics (algebra, geometry, and trigonometry), chemistry, physics, and two years of one foreign language.

The 135 quarter units of work required for admission to the School of Optometry, UC Berkeley, include the following: (1) Subject A; (2) American History and Institutions.

**Specific UC Berkeley School of Optometry Requirements:** (1) Biology 5, 5L, 9, 108; (2) Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL, 132A and 132B (or former 21 and 23); (3) English 3, and 4 or 129; (4) Mathematics 3A, 3B, and 3C, or 31A, 31B, and Statistics 50 or Psychology 41; (5) Microbiology and Molecular Genetics 6 or 101; (6) Physics 6A, 6B, and 6C, or 8A, 8B, and 8C; (7) introductory anatomy (Physiological Science 13) and physiology (Biology 166); (8) Psychology 10. Recommended: two upper division biological sciences courses, preferably in neuroanatomy and neurophysiology.

The balance of the 135 quarter units required for admission may be selected from social sciences, foreign languages, and humanities.

For further information, obtain the booklet *Information for Applicants to Schools and Colleges of Optometry* from the American Optometric Association, 243 Lindbergh Boulevard, St. Louis, MO 63141, or call the Preprofessional/Pregraduate Advising Office at (310) 825-1817.

### Prepharmacy Curriculum: Two Years

The School of Pharmacy on the San Francisco campus of the University offers a four-year curriculum leading to the degree of Doctor of Pharmacy. To be admitted to this curriculum you must have met all requirements for admission to the University and have completed, with an average grade of C (2.0) or better, at least 90 quarter units of the program below. Students taking prepharmacy work at the University of California are normally enrolled in the College of Letters and Science. If taken elsewhere, the courses elected must be equivalent to those offered at the University. To complete prepharmacy studies in the minimum time, you should take elementary chemistry, trigonometry, and a full year of intermediate algebra in high school.\*

\*Students who have completed the prepharmacy curriculum at Los Angeles cannot be assured of admission to the School of Pharmacy on the San Francisco campus. A personal interview may be required. Applicants should contact the school in early fall of the year preceding the September of proposed admission. Contact the Office of Student Affairs, School of Pharmacy. Applications may be obtained from the office of the Director of Admissions, University of California Medical Center, San Francisco, CA 94143-0446, (510) 476-2732. For further information, see the *Announcement of the School of Pharmacy, UC San Francisco*, which may be obtained from the Dean, School of Pharmacy, University of California Medical Center, San Francisco, CA 94143-0446.

**Curriculum Requirements:** (1) Subject A; (2) American History and Institutions; (3) Biology 5, 9, 108; (4) Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL, 132A and 132B/132BL (or former 21 and 23); (5) English 3, 4; (6) intermediate algebra and trigonometry (if not completed in high school), Mathematics 3A and 3B, or 31A and 31B; (7) Physics 3A and 3B, or 6A and 6B, or 8A and 8B; (8) 28 quarter units of electives selected from courses in foreign language, social sciences, and humanities.

For further information, call the Preprofessional/Pregraduate Advising Office at (310) 825-1817.

### Prephysical Therapy Curriculum: Three or Four Years

Students who intend to apply for admission to a physical therapy school should select a major (physiological science and psychology are commonly selected) and complete the following prerequisite courses: (1) Biology 5, 9; (2) Chemistry and Biochemistry 11A, 11B/11BL, 15, 15L; (3) Physics 3A, 3B, 3C; (4) introductory anatomy (Physiological Science 13) and physiology (Biology 166); (5) Psychology 10, 115, 127, 130. Recommended: one course in statistics and one in computing. The prerequisite courses should be taken for a letter grade; GPAs for these courses should not be lower than 3.0, with no grade lower than a C.

You should write to schools with physical therapy programs early in your sophomore year for specific admission requirements and application deadlines. Information concerning in-state and out-of-state programs may be obtained from the American Physical Therapy Association, 1156 15th Street NW, Washington, DC 20005, and the Preprofessional/Pregraduate Advising Office (310-825-1817).

### Prepublic Health Studies

The professional and academic fields of public health need individuals from many disciplines. Candidates for graduate study may come from a wide variety of academic backgrounds and training, including mathematics and the physical, biological, and social sciences. Preparation typically includes a minimum of two courses each in mathematics, biological sciences, and social sciences, and one course in physical sciences.

Interested students and those who wish to apply to the UCLA School of Public Health should review the school's announcement booklet for additional requirements or recommendations for entry into the various programs of study. Information is available at the Preprofessional/Pregraduate Advising Office (310-825-1817).

### Prerespiratory Therapy Curriculum: One Year

Santa Monica College (SMC) and the UCLA Medical Center offer a two-year program in respiratory therapy accredited by the American Medical Association (AMA) through which you may obtain a Certificate of Completion.

The first year of the curriculum may be taken at UCLA or any other two- or four-year college/university. Many UCLA students opt to incorporate the first-year respiratory therapy curriculum into their UCLA science or premedical B.S./B.A. degree prerequisites and, after completing their UCLA degree, enter the second year at the SMC/UCLA Medical Center School of Respiratory Therapy. The only first-year course that must be taken at Santa Monica College is an introductory course on respiratory therapy as a profession (Respiratory Therapy 1).

The second year of the program (the formal respiratory therapy curriculum) is taken through Santa Monica College. It is a lecture, laboratory, and clinical program conducted at the UCLA Medical Center, beginning with summer school each year. Admission to the second year is by competitive application. Because enrollment in the second year is limited, you should become familiar with the admission requirements as early as possible.

**Curriculum Requirements (First Year):** (1) Respiratory Therapy 1 (taken at SMC in Fall/Spring Quarter); (2) general human anatomy with laboratory; (3) general chemistry with laboratory; (4) basic lower division English; (5) U.S. history or general political science; (6) any general humanities course (art, music, foreign languages, etc.); (7) microbiology with laboratory; (8) human physiology with laboratory; (9) general psychology; (10) speech or advanced English composition.

For further information and/or a counseling appointment, contact the SMC/UCLA Medical Center School of Respiratory Therapy at (310) 825-7222.

### Prelaw Studies

Law schools have no preference with regard to specific majors or particular courses. Admission to law school is based on the quality of your academic work, LSAT scores, and other qualities as reflected in letters of recommendation, in the written application, and in interviews. The College of Letters and Science offers advising on preparing for and applying to law schools through **daily drop-in counseling sessions** (for information, call the Preprofessional/Pregraduate Advising Office at 310-825-1817).

For additional information, see the *Law School Admission Bulletin* within the "Law School Admission Service Packet" (available at the Admissions Office, UCLA School of Law, 71 Dodd Hall).

## Graduate Study

The College of Letters and Science provides graduate students virtually unlimited opportunities for academic pursuit, faculty-sponsored research, and fieldwork relative to specific programs and career goals.

With Graduate Division approval and subject to University minimum requirements, each department sets its own standards for admission and other requirements for the award of the master's and doctoral degrees. See the departmental listings which follow for specific requirements and procedures.

For information on the proficiency in English requirements for international graduate students, refer to "Graduate Admission" in Chapter 3.

## African Area Studies (Interdepartmental)

10244 Bunche Hall, (310) 825-3686

### Professors

Richard L. Abel, LL.B., Ph.D. (*Law*)  
Edward A. Alpers, Ph.D. (*History*)  
Robert B. Edgerton, Ph.D. (*Anthropology; Distinguished Teaching Award*)  
Christopher Ehret, Ph.D. (*History*)  
John Friedmann, Ph.D. (*Urban Planning*)  
Peter B. Hammond, Ph.D. (*Anthropology*)  
Thomas J. Hinnebusch, Ph.D. (*Linguistics, African Languages*)  
Dean T. Jamison, Ph.D. (*Community Health Sciences, Education*)  
Edmond Keller, Ph.D. (*Political Science*)  
Robert S. Kirsner, Ph.D. (*Germanic Languages*)  
Deepak K. Lal, D.Phil. (*Economics*)  
Michael F. Lofchie, Ph.D. (*Political Science*)  
Alfred K. Neumann, M.D. (*Community Health Sciences*)  
Charlotte G. Neumann, M.D. (*Community Health Sciences*)  
Boniface I. Obichere, D.Phil. (*History*)  
Merrick Posnansky, Ph.D. (*History, Anthropology*)  
Russell G. Schuh, Ph.D. (*Linguistics, African Languages*)  
Richard L. Sklar, Ph.D. (*Political Science; Distinguished Teaching Award*)  
Edward W. Soja, Ph.D. (*Urban Planning*)  
Hartmut Walter, Ph.D. (*Geography*)  
Thomas S. Weisner, Ph.D. (*Anthropology*)

### Professors Emeriti

Hassan el Nouty, Docteur ès Lettres (*French*)  
Victoria A. Fromkin, Ph.D. (*Linguistics; Distinguished Teaching Award*)  
Walter R. Goldschmidt, Ph.D. (*Anthropology*)  
Richard C. Hawkins, M.A. (*Film and Television*)  
Frederick C. Kintzer, Ed.D. (*Education*)  
Mazisi R. Kunene, M.A. (*Linguistics*)  
Leo J. Kuper, Ph.D. (*Sociology*)  
Wolf Leslau, Docteur ès Lettres (*Hebrew, Semitic Languages*)  
Jacques Maquet, Ph.D. (*Anthropology*)  
Georges Sabagh, Ph.D. (*Sociology*)  
Nathan Shapira, Dottore in Architettura (*Design*)  
Allegra Fuller Snyder, M.A. (*Dance*)  
Benjamin E. Thomas, Ph.D. (*Geography*)

### Associate Professors

Robert C. Bailey, Ph.D. (*Anthropology*)  
Donald J. Cosentino, Ph.D. (*English, Folklore and Mythology*)  
Jacqueline C. DjeDje, Ph.D. (*Ethnomusicology and Systematic Musicology*)  
Teshome H. Gabriel, Ph.D. (*Film and Television*)  
Gerry A. Hale, Ph.D. (*Geography*), Chair  
Susanna B. Hecht, Ph.D. (*Urban Planning*)  
Robert A. Hill, M.Sc. (*History*)  
Gail E. Kennedy, Ph.D. (*Anthropology*)  
Hilda J. Koopman, Ph.D. (*Linguistics, African Languages*)  
Mary Niles Maack, D.L.S. (*Library and Information Science*)  
Beverly J. Robinson, Ph.D. (*Theater*)  
Hans Schöllhammer, D.B.A. (*Management*)

### Assistant Professors

Judith A. Carney, Ph.D. (*Geography*)  
Johannes J. Feddema, Ph.D. (*Geography*)  
Nadine R. Peacock, Ph.D. (*Anthropology*)  
Anna Simons, Ph.D. (*Anthropology*)

### Lecturers

Patrice E.F. Jelliffe, R.N., M.P.H. (*Community Health Sciences*)  
Kobla Ladzekpo, M.A. (*Ethnomusicology and Systematic Musicology*)

## Scope and Objectives

The basic objective of the African Area Studies Program is an intellectual one — to provide interested students with the opportunity to engage in intensive study and research on Africa on an interdisciplinary basis. The program offers high quality African area courses in a wide range of fields, including the social sciences, humanities, and professional fields. The Master of Arts is not a professional degree, but students are encouraged to enroll in courses in several professional schools on campus. Articulated degree programs are also offered.

Academic flexibility draws many students to the program. Because there are more than 30 active faculty members on campus with African interest and experience in many disciplines, students have multiple options to design individualized programs.

According to a recent survey, 45 percent of the program's graduates are continuing study at the postgraduate level, 25 percent are employed in higher education, and 30 percent work with international or foreign organizations in 20 countries.

## Master of Arts Degree

### Admission

In addition to the University minimum requirements, applicants are required to (1) submit three letters of recommendation from academic referees, one of which may be from an employer if the applicant has been away from school for some time, (2) present a résumé describing both academic and professional experience, and (3) submit a research paper.

In addition to meeting the requirements of the Graduate Division, you must have adequate preparation in undergraduate fields related to the program. Normally, the required preparation for the M.A. degree in African Area Studies is a Bachelor of Arts in the social sciences or arts and humanities.

### Major Fields or Subdisciplines

You must select a major field of concentration in one discipline, professional school, or approved interdisciplinary grouping. For more information and a brochure describing the program, contact the Assistant Graduate Adviser, African Studies Center, 10244 Bunche Hall, UCLA, Los Angeles, CA 90024-1310.

### Foreign Language Requirement

You are required to satisfy the language requirement by one of the following methods: (1) taking three courses (12 units) in an African language with an average grade of B or better (these courses may not be applied toward the

nine courses required for the degree), (2) passing a Linguistics Department examination in an African language not regularly offered, (3) proving that you are a native speaker of an African language, (4) proving that you have a Foreign Service Institute rating of three or above in an African language, or (5) petitioning for the substitution of an appropriate non-African language.

### Course Requirements

A minimum of nine courses is required for the M.A., at least five of which must be at the graduate level. The courses must be distributed between disciplines as follows: (1) major discipline — a minimum of five courses, of which three must be at the graduate level. Sociology and anthropology may be taken as a combined major. Other combined majors must be approved by the graduate adviser; (2) minor discipline — a minimum of three courses, of which two must be at the graduate level; (3) third discipline — a course on Africa, preferably of the survey or methodology type. In addition, African Area Studies M229B and/or History 275 are strongly recommended for all students in the program.

No more than one course graded on an S/U basis may be applied toward the minimum of nine courses required for the degree, except with consent of the graduate adviser. One course in the 500 series may be applied toward the total course requirement and toward the minimum graduate course requirement. With consent of the graduate adviser, another 500-level course may be allowed but may not be applied toward the minimum graduate course requirement.

### Thesis Plan

The program normally requires a written comprehensive examination for the M.A. degree; however, a thesis option is available but must be approved by the program chair and your faculty adviser. If approved, you should select, in consultation with the graduate adviser, a faculty committee to supervise your thesis. The thesis must reflect the major area of emphasis. Normally the thesis should be submitted to the committee at the beginning of your fourth term in residence and should be approved before the end of that term. If the committee does not approve the thesis, you will have failed the requirement and are not allowed to resubmit the thesis.

### Comprehensive Examination Plan

If you select the comprehensive examination plan, you are required to take a written examination administered by a three-person committee. It is your responsibility to make arrangements for this examination with faculty members in appropriate departments. Exceptions are granted only with consent of the graduate adviser. The examination normally is three to six hours in length.

An oral examination may be held at the discretion of the examining committee after it has read the written examination. If you fail the comprehensive examination, you may retake it only once with consent of the graduate adviser.

### African Development Studies within the M.A. in African Area Studies

Students interested in an interdisciplinary program in African development studies within the existing master's program should consult the graduate adviser. Coursework focuses on planning and development.

### Cooperative Degree Programs

In the articulated degree programs described below, no course may be used for credit toward more than one degree. Thus, courses that have been applied toward the completion of the M.A. degree in African Area Studies may not also be applied toward any other degree.

For more information on either of the cooperative degree programs, contact the Graduate Adviser or Assistant Graduate Adviser, M.A. Program in African Area Studies.

### M.F.A.-Film and Television/M.A.-African Area Studies

The African Area Studies Program and the Department of Film and Television have an articulated degree program which allows students to combine study for the M.A. in African Area Studies and the M.F.A. in Film and Television. You must be accepted by both areas to pursue this degree program. Additional information is available from the Graduate Adviser, Student Services Office, UCLA School of Theater, Film, and Television.

### M.P.H./M.A.-African Area Studies

The African Area Studies Program and the School of Public Health have an articulated degree program whereby you can work sequentially for the master's degree in African area studies and the Master of Public Health. By planning the major field emphasis in public health while working toward the M.A. in African Area Studies, it may be possible to shorten the amount of time it would normally take to complete both degrees. Potential applicants may also contact the Office of Student Affairs, UCLA School of Public Health.

### Graduate Courses

**M229B. *Africana Bibliography and Research Methods.*** (Same as Library and Information Science M229B.) Problems and techniques of research methodologies related to Africana studies. Emphasis on relevant basic and specialized reference materials, using full range of available information resources, including library collections of books, serials, and computerized data bases.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

### African Area Studies Course List

All courses are not offered every academic year. You should verify courses with the respective departments.

**African Languages (Linguistics)** 1A-1B-1C. Elementary Swahili  
2A-2B-2C. Intermediate Swahili  
7A-7B-7C. Elementary Zulu  
8A-8B-8C. Intermediate Zulu  
11A-11B-11C. Elementary Yoruba  
12A-12B-12C. Intermediate Yoruba  
41A-41B-41C. Elementary Hausa  
42A-42B-42C. Intermediate Hausa  
97. Elementary and Intermediate Studies in African Languages  
103A-103B-103C. Advanced Swahili  
123A-123B-123C. Advanced Yoruba  
143A-143B-143C. Advanced Hausa  
M190. Survey of African Languages  
199. Special Studies in African Languages  
202A-202B-202C. Comparative Bantu  
**Afrikaans (Germanic Languages)** 105A. Elementary Afrikaans  
105B. Intermediate Afrikaans  
114. Afrikaans Literature in Translation  
135. Introduction to Afrikaans Literature  
199. Special Studies in Afrikaans  
**Afro-American Studies** \*M102. Culture, Media, and Los Angeles  
**Anthropology** \*112. Old Stone Age Archaeology  
\*M115S. Historical Archaeology  
\*118A, 118B. Museum Studies  
\*121A. Primate Fossil Record  
\*121B. The Australopithecines  
\*121C. Evolution of the Genus *Homo*  
\*133R. Aesthetic Systems  
\*137. Ethnography on Film  
\*150. Study of Social Systems  
\*156. Comparative Religion  
\*158. Hunting and Gathering Societies  
\*161. Development Anthropology  
\*165. Demographic Problems in Nonindustrial Societies  
\*M168. Health in Culture and Society  
171. Civilization of Sub-Saharan Africa  
\*212P. Selected Topics in Hunter/Gatherer Archaeology  
\*221A-221B. Fossil Evidence for Human Evolution  
\*230Q. Cultural Anthropology  
\*233Q. Aesthetic Anthropology  
\*250. Selected Topics in Social Anthropology  
\*252P. Comparative Systems of Social Inequality  
\*254. Kinship  
\*255. Comparative Political Institutions  
\*M262P. Culture and Human Reproduction  
\*M266. Medical Anthropology in Public Health  
**Architecture and Urban Planning** \*232B. Spatial Planning: Regional and International Development  
\*235A-235B. Urbanization and Rural Development in Third World Countries

\*239. Special Topics in Urban and Regional Development Policy

\*266. City and Countryside in the Third World

\*267A. Resource-Based Development Planning

\*267B. Rural Development Issues

**Art History** \*55A. Africa, Oceania, and Native America

\*101A. Egyptian Art and Archaeology

\*101B. Egyptian Art and Archaeology of the Middle and New Kingdoms

118C. Arts of Sub-Saharan Africa

C119A. Advanced Studies in African Art: Western Africa

C119B. Advanced Studies in African Art: Central Africa

\*201. Topics in Historiography of Art History

\*203. Museum Studies

C216A. Advanced Studies in African Art: Western Africa

C216B. Advanced Studies in African Art: Central Africa

219C. African Art

\*220. Oceanic, Pre-Columbian, African, and Native North American Art

**Berber (Near Eastern Languages)** \*101A-101B-101C. Elementary Berber

\*102A-102B-102C. Advanced Berber

\*130. The Berbers

\*199. Special Studies in Berber Languages

**Community Health Sciences** \*200. Global Health Problems

\*217. Introduction to Research and Program Evaluation

\*231. Maternal and Child Nutrition

\*233. Seminar: Current Issues in Maternal and Child Health

\*M236. Human Resources and Economic Development

\*M240. Culture and Human Reproduction

\*M241. Seminar: Reproduction and Women's Health

\*294. Social and Behavioral Factors of AIDS/HIV: A Global Perspective

\*430A. International Health Agencies and Programs

\*430B. Advanced Issues in International Health

\*434A. Maternal and Child Health in Developing Areas

\*434B. Recent Developments in Maternal and Child Health in Disadvantaged Countries

\*441. Planning and Development of Family Health Programs

\*443. Assessment of Family Nutrition

\*445. Food and Nutrition Planning: Policies and Programs in World Context

\*446. Nutrition Education and Training: Third World Considerations

**Dance** 72B. Dance of West Africa

C172B. Dance of West Africa

182. Dance in Africa and the African Diaspora

C472B. Dance of West Africa

**Economics** \*110. Economic Problems of Underdeveloped Countries

\*111. Theories of Economic Growth and Development

\*112. Policies for Economic Development

\*190. International Economics

\*191. International Trade Theory

\*192. International Finance

\*281A. International Trade Theory

\*281B. International Finance

\*281C. International Economics

\*282A-282Z. Topics in International Economics

\*286A. Economic Development

\*286B. Analysis and Appraisal of Development Projects

\*287A-287Z. Topics in Development Economics

**Education** \*204B. Introduction to Comparative Education

\*204C. Education and National Development

\*204E. International Efforts in Education

\*238. Cross-National Analysis of Higher Education

253B. Seminar: African Education

\*253F. Seminar: Education in Revolutionary Societies

**English** M111G. Oral Traditions in Africa

\*114. World Literatures in English

M235. African Myth and Ritual

**Epidemiology** \*281. Epidemiology for Developing Countries

\*282. Rapid Epidemiologic Surveys in Developing Countries

\*290. Seminar: Epidemiology — Infectious and Tropical Disease

**Ethnomusicology and Systematic Musicology**

20B. Musical Cultures of the World: Near East and Africa

91E. Music and Dance of Ghana

M110A-M110B. The Afro-American Musical Heritage

136A-136B. Music of Africa

\*C201A-C201B. Proseminars: Ethnomusicology

237. Seminar: African Music

\*290. Seminar: Ethnomusicology

**Film and Television** 106C. History of African, Asian, and Latin American Film

\*108. History of Documentary Film

\*112. Film and Social Change

\*218. Culture, Media, and Society

\*219. Seminar: Film and Society

\*221. Seminar: Film Authors

276. Seminar: Non-Western Films

**Folklore and Mythology** M154A-M154B. The Afro-American Musical Heritage

M155. Oral Traditions in Africa

M235. African Myth and Ritual

259. Seminar: Folklore (Africa)

**French** 121A. Contemporary Francophone Literature: French-African Literature

221A. French-African Literature: Introduction to Study of French-African Literatures

221B. French-African Literature: French-African Literature of Madagascar and Bantu Africa

221C. French-African Literature: French-African Literature of Berbero-Sudanese and Arabo-Islamic Africa

257A-257B. Studies in French-African Literature

**Geography** \*119. Agricultural and Pastoral Ecosystems

\*121. Conservation of Resources: Underdeveloped World

122. Wildlife Conservation in Eastern Africa

\*M128. Global Environment: Problems and Issues

\*133. Cultural Geography of the Modern World

135. African Ecology and Development

\*140. Political Geography

188. Northern Africa

189. Middle and Southern Africa

\*229. Seminar: People and Environment

\*232. Advanced Cultural Geography

\*233. Seminar: Cultural Geography

\*234. Environment and Subsistence in Indigenous Cultures

\*240. Advanced Political Geography

\*241. Seminar: Political Geography

\*242. Advanced Population Geography

288. Northern Africa

289. Middle and Southern Africa

\*291. Arid Lands

**Health Services** \*240. Health Care Issues in International Perspective

**History** 10A-10B. Introduction to Civilizations of Africa

88N. Lower Division Seminar: Africa

\*M103. Historical Archaeology

109A-109B. History of North Africa from the Moslem Conquest

\*M158B-M158C. Introduction to Afro-American History

175A. Topics in African History: Prehistoric Africa — Technological and Cultural Traditions

175B. Topics in African History: Africa and the Slave Trade

175C. Topics in African History: Africa in the Age of Imperialism

175E. Topics in African History: Africa from 1945 to the Present

176A-176B. History of West Africa

176C. Social and Economic History of West Africa since 1600

177. Ethiopia and the Horn of Africa

178A-178B. History of Eastern Africa

179A-179B. History of Southern Africa

200N. Advanced Historiography: Africa

201N. Topics in History: Africa

275. Introduction to Professional Study of African History

276. African Archaeology: Field Techniques

277. African Archaeology: Data Analysis

278A-278B. Seminars: African History

**Political Science** 133. International Relations of Sub-Saharan Africa

\*139A-139Z. Special Studies in International Relations

165. Government and Politics in North Africa

166A-166B-166C. Government and Politics in Sub-Saharan Africa

\*167. Ideology and Development in World Politics

C197D. Seminar for Majors: South African Politics

C241. African Studies

\*255. Seminar: Political Change

**Sociology** \*31. Dilemmas of Third World Development

\*M287A-M287B. Population Policy and Fertility

\*M287C. Seminar: Population Policy and Fertility

**Teaching English as a Second Language and Applied Linguistics** 109. Literature in the ESL Context

**Theater** 102E. Theater of Non-European World

202P. Seminar: Traditions of African Theater

\*Special courses which may be applied toward the M.A. degree requirements with prior approval of the graduate adviser. These courses either do not exclusively focus on Africa or focus on Africa only in certain years.

## African Studies (Interdepartmental)

10244 Bunche Hall, (310) 825-2944

### Professors

Christopher Ehret, Ph.D. (*History*), Chair

Thomas J. Hinnebusch, Ph.D. (*Linguistics, African Languages*)

Richard L. Sklar, Ph.D. (*Political Science*;  
*Distinguished Teaching Award*)

## Scope and Objectives

This special undergraduate program is designed primarily for (1) students who plan to live and work in Africa or who are interested in government and public service careers involving African affairs and (2) students who plan to pursue graduate work in one of the social sciences or Near Eastern and African languages, with primary concentration on the African field.

The philosophy of the specialization is that people with a solid background in one of the established disciplines can make the best contribution to an understanding of Africa and its problems. Thus, the specialization can be taken only jointly with work toward a bachelor's degree, normally in one of the following fields: anthropology, economics, geography, history, linguistics, political science, or sociology. Students completing this special program receive a degree with a major in a selected discipline and specialization in African studies. The chair of the committee in charge certifies completion of the program.

## Special Undergraduate Program

### Preparation for the Specialization

*Required:* History 10A-10B and either African Languages M190 or a three-term sequence in any African language.

### Upper Division

Students are required to take a departmental major in the social sciences or, by special arrangement with the committee chair, in the humanities or arts. In addition, you are required to take an upper division course related to Africa in each of four departments.

For more information, contact the Assistant Graduate Adviser, African Studies Center, 10244 Bunche Hall (310-825-2944) or Professor Christopher Ehret, History, 6265 Bunche Hall (310-825-4093, 825-4601).

## Afro-American Studies (Interdepartmental)

160 Haines Hall, (310) 825-7403

### Professors

Walter Allen, Ph.D. (*Sociology*)  
Gordon L. Berry, Ed.D. (*Education*)  
Lawrence Bobo, Ph.D. (*Sociology*)  
Kimberle W. Crenshaw, J.D., LL.M. (*Law*)  
Sandra Graham, Ph.D. (*Education*)  
James H. Johnson, Ph.D. (*Geography*)  
Claudia Mitchell-Kernan, Ph.D. (*Anthropology*)  
Hector F. Myers, Ph.D. (*Psychology*)  
Melvin Oliver, Ph.D. (*Sociology*)  
Gail E. Wyatt, Ph.D., in *Residence (Psychiatry and Biobehavioral Sciences)*

### Associate Professors

Jacqueline C. DjeDje, Ph.D. (*Ethnomusicology and Systematic Musicology*)  
Teshome H. Gabriel, Ph.D. (*Film and Television*)  
Franklin D. Gilliam, Jr., Ph.D. (*Political Science*)  
Robert A. Hill, M.Sc. (*History*)  
Vickie M. Mays, Ph.D. (*Psychology*)  
Beverly J. Robinson, Ph.D. (*Theater*)  
Valerie A. Smith, Ph.D. (*English*)  
Belinda Tucker, Ph.D., in *Residence (Psychiatry and Biobehavioral Sciences)*  
Richard A. Yarborough, Ph.D. (*English; Distinguished Teaching Award*)

### Assistant Professors

Marcyliena H. Morgan, Ph.D. (*Anthropology*)  
Brenda Stevenson, Ph.D. (*History*)

### Lecturer

Kenny Burrell, B.A.

## Scope and Objectives

Originally born during the late 1960s and early 1970s, the Afro-American studies major was designed to fill a void that existed at UCLA in terms of scholarly and curricular material relevant to the African American experience. Students and faculty currently associated with the program see the major as meeting a number of academic, personal, and social needs.

The program offers both a Bachelor of Arts and a Master of Arts degree. While it is important that students become expert within a traditional discipline, it is even more important that students examine both the truth and the fiction regarding the African American experience in the U.S. For African American students, this leads to a heightening of self-awareness and self-pride. For non-African American students, such a major provides a broadening of perspectives to take into account more than a singular cultural view.

The fundamental goal of the curriculum is to provide students with a comprehensive and multidisciplinary introduction to the crucial life experiences of African Americans. This goal is achieved in two primary ways. First, it provides an interdisciplinary exposure to particular features of the African American experience. Majors gain an in-depth understanding of the historical, anthropological, sociological, psychological, economic, and political aspects of African America. The curriculum also provides opportunities to study the literary, musical, and artistic heritage of peoples of African descent. Second, students gain expertise in the concepts, theories, and methods of a traditional academic discipline. Majors are required to select an area of concentration in one of the following fields: anthropology, economics, English, history, philosophy, political science, psychology, or sociology (concentrations in departments not listed must be approved by the program adviser).

## Bachelor of Arts Degree

The B.A. program in Afro-American Studies is periodically revised; check with the program

office for changes and/or updates. Majors should also closely consult the 1993-94 *Afro-American Studies Catalog and Directory*, available from the program office.

## Preparation for the Major

*Required:* History 10A and the lower division courses listed in one of the following concentrations, plus three courses from at least two additional concentrations (prerequisites for the courses listed must be completed before enrolling in a given course; this is especially important for the quantitative courses in economics and psychology): *anthropology* — Anthropology 8, 9, 10 (or 7), 12; *economics* — Economics 1, 2, 40, Mathematics 3A, 31E (or 3A and 3B, or 31A and 31B); *English* — English 3, 4, 10A, 10B, 10C (all must be taken in sequence); *history* — History 1A-1B-1C, 6A-6B-6C, 10B, and 100A or 101; *philosophy* — Philosophy 4, 21, 22, 31; *political science* — Political Science 1, 6, 20, Sociology 1, Economics 1; *psychology* — Mathematics 2, Psychology 10, 41, 42, Biology 2, Anthropology 7, Physics 10 (or 3A or 6A or 8A), one year of high school chemistry (or Chemistry and Biochemistry 2 or 11A); *sociology* — Mathematics 2, Sociology 1, 18, Linguistics 1, Anthropology 9. You are strongly urged to complete the required lower division courses within the first two years of the major.

## The Major

*Required:* (1) Anthropology M164, English M104A or M104B or M104C, History M158B-M158C; (2) four upper division and/or graduate courses in Afro-American studies (or four departmental courses that are multiple-listed with Afro-American Studies); (3) six upper division electives within the department of concentration selected from the approved courses listed below; (4) two upper division electives outside the department of concentration selected from the approved courses list. Note: You may petition the committee which administers the degree program to have a course not on the approved list accepted for the major. In arranging a course of study, you should select a combination of courses that best meets your current and future educational and career goals.

**Approved courses** (recommended courses are in bold):

Afro-American Studies **100B, C101A through C101Z, M104A, M104B, M104C, M145, M147, M158A, M158B, M158C, M164, M172, M197, 197B, 199**

Anthropology 110, **111**, 115P, 120, 122, 123, 124, **125, 130**, 135A, 135B, M136Q, 137, 138, **M140**, 142A, 142B, **145, 150, 151, 152, 153**, M154, 158, 161, **M164, 167**, M168, 171, 182, 186A, 186B, 199

Economics **101A, 101B, 102, 103A through 103Z**, 107, 110, 111, 112, **120, 121**, 130, 133, M135, M136, 141, 144, 147A, 147B, 150, **151**, 160, 161, **180**, 183, 190, 191, 192, **199**



English 80, 85, 95A, 95B, 95C, 100, **M104A, M104B, M104C**, M105, 106, M107A, M107B, M107C, 108A, 108B, **109, M111A**, 114, 115A, 118, 131A through 131J, 136A, 136B, 136C, 140A, 140B, 141A, 141B, 142A, 142B, 143, 171, 172, 173, 174, **178, 188, 189, 190, M197, 199**

History 100A, 101, M104A, M104B, 107A, 107B, 109A, 109B, 135A, 135B, **145A, 145B, 146A, 146B, 147A**, 147B, 148A, 148B, 148C, 149A, 149B, **154A, 154B, 156A, 156B**, 156C, 156D, 156E, **M158A through 158E**, M159A, M159B, 160, 161, 166, **175A, 175B, 175C**, 176A, 176B, 177, 178A, 178B, 179A, 179B, 193A, **199**

Philosophy 100A, 100B, 101A, 101B, 102, **104**, 126A, 126B, **126C**, 129, **150**, 151A, 151B, 153A, 156, 166, **172, 178, 182, M192, 199**

Political Science **102, 104A, 104B, M105, M106**, 111A, 111B, 111C, 113, **114A, 114B**, 115, **116**, 119A through 119Z, 120, 124, 125, 126, 131, **137A, 137B**, M139A, **M140**, 141, **142, 145, 146, M147B, 165, 166A, 166B, 166C, 167, 168**, 170, 172A, 172B, 173, 174, 175A, 175B, 181, 182A through 182D, 183A, 183B, **183C, 185, 199**

Psychology **42, 110, 111, 112B, 115, 116**, 119D, M119K, **120**, 121, 123, **127, 129A, 129B, 130, 132, 135, 136A**, 136B, 137C, 137D, M138, **M142, 150, 151, M163, M165, 170A, 170B, M172, 175, 177, 179A, 192, 193, 194, 197, 199** (note: courses 110, 115, 120, 125, 127, 135, M142, and 151 should be taken by students planning to pursue graduate study in psychology)

Sociology **101, 102, 103, 104**, 105, **113, 116, 132, 133, 134, 135, 136, M138, M144, 145, 147A, 147B, 148, 149, 156, 157, 158, 160, 169, 170, 171, 174, M175, M176, 182, 183, 184, 185, 186, 195A through 195Z, 197, 199**

### Honors Option

Students participating in the honors option are required to complete an independent research paper or project undertaken with the guidance of a faculty member. If you are an Afro-American studies major with a grade-point average of 3.5 or better, you complete the honors option by writing an undergraduate thesis. For more information, contact the curriculum coordinator of the Afro-American Studies Program.

### Double Major Option

Some students elect to complete the requirements of two majors (Afro-American studies and another). If you are interested in this option, you must maintain good academic standing and complete both majors within the 228-unit maximum imposed by the college. Courses used to satisfy the requirements for the principal major may also be used to satisfy the requirements for the secondary one, but no more than five courses may be common to both majors. Because of the complexity of the double major, you are encouraged to plan your curriculum early and to do so in consultation with the college counselors and/or the Afro-

American Studies Program adviser or curriculum coordinator.

## Master of Arts Degree

The Master of Arts program in Afro-American Studies is international in scope, focusing on African American cultures in the U.S., the Caribbean, and South America. The program prepares students for positions in the job market, as well as further graduate study (i.e., Ph.D. level) in their traditional disciplines.

### Admission

Applicants for admission must possess a bachelor's degree in the social sciences or humanities and demonstrate an interest in Afro-American studies either through their previous course of study or in their future plans. Students are selected on the basis of the following criteria: (1) an official transcript; (2) three academic letters of recommendation; (3) a minimum 3.0 (B) average in the junior/senior years of college; (4) a statement of purpose describing the applicant's background in Afro-American studies, proposed program of study, and future career goals; (5) scores on the verbal and quantitative sections of the Graduate Record Examination (GRE); (6) an original term paper or research paper which best expresses the applicant's interests and abilities; (7) other evidence of promise deemed relevant such as work experience, accomplishments, or community and public service.

Admission to the program is limited to Fall Quarter. The application deadline for the 1994-95 academic year is December 15, 1993 (earlier for international students). Prospective students may request applications from the M.A. Degree Program in Afro-American Studies, Center for Afro-American Studies, 160 Haines Hall, UCLA, Los Angeles, CA 90024-1545.

### Major Fields

The M.A. in Afro-American Studies is interdepartmental, with formal support linkages to nine disciplinary departments: Anthropology, English, History, Linguistics, Music, Philosophy, Political Science, Psychology, and Sociology. Related courses are also offered in the following schools and departments: African Studies, Art, Dance, Economics, Education, Film and Television, Folklore and Mythology, Geography, Latin American Studies, Library and Information Science, Management, Psychiatry and Biobehavioral Sciences, Public Health, Social Welfare, and Theater.

### Foreign Language Requirement

You are required to satisfy the language requirement by one of the following methods: (1) successfully completing two years of coursework in a foreign language at the college level or (2) passing a foreign language proficiency examination approved by your guidance committee and deemed appropriate by the program committee.

## Course Requirements

A total of 12 upper division and graduate courses are required for the degree. Of that number, only four may be selected from upper division listings. The program has a structured core of six required courses. You are required to take Afro-American Studies M200A, three courses from 200B through 200F, and 270A. These courses should normally be taken in your first year of study. The second year is devoted to acquiring disciplinary competence in your cognate field, and six courses must be selected from that discipline, including one graduate-level course in research methods (for social sciences students) or critical theory (for humanities students). The methods course should be selected from the list approved by the interdepartmental degree committee (you may petition to substitute an appropriate upper division course if your outside department's methods course is closed to nonmajors).

Eight units of 500-series courses (excluding courses 597 and 598) may be applied toward either the total course requirement or the minimum graduate course requirement.

### Thesis Plan

The thesis is the final report on the results of your original investigation. Before beginning work on the thesis, you should consult closely with your academic adviser and the thesis committee. See the 1993-94 *Afro-American Studies Catalog and Directory* for details concerning thesis requirements.

### Comprehensive Examination Option

You may elect to complete the M.A. degree through the comprehensive examination option. The written examination is administered by an appointed faculty committee and is offered on a regular basis.

## Lower Division Course

**M5. Social Organization of Black Communities.** (Same as Sociology M5.) Lecture, three hours; discussion, one hour. Analysis and interpretation of social organization of black communities, with focus on origins and development of black communities, competing theories and research findings, defining characteristics and contemporary issues.

Mr. Allen, Mr. Oliver (Sp)

**6. Trends in Black Intellectual Thought.** Overview of major intellectual trends that have shaped ways in which Afro-American thinkers have interpreted experiences of blacks in the U.S., drawing from such fields as history, philosophy, and literature. (F,W,Sp)

## Upper Division Courses

**100B. Psychology from an Afro-American Perspective.** Survey of psychological literature relevant to Afro-Americans, with emphasis on contributions of Afro-American psychologists. Topics include history of psychology, testing and intelligence, the family, personality and motivation, racism and race relations, education, community psychology, and future of Afro-American psychology.

**C101A-C101Z. Special Topics in Afro-American Studies.** Prerequisite: consent of instructor. Variable topics. May be repeated for credit. Concurrently scheduled with courses C201A-C201Z.

**M102. Culture, Media, and Los Angeles (6 units).** (Same as Asian American Studies M197H and Honors Collegium M102.) Lecture, four hours; screenings, two hours. Prerequisite: upper division standing. Role of media in society and its influence on contemporary cultural environment, specifically in Los Angeles; issues of representation as they pertain to race, ethnicity, gender, and sexuality. P/NP or letter grading.  
Mr. Gabriel (Sp)

**M103A. African American Theater History: Slavery to Mid-1800s.** (Same as Theater M103A.) Lecture, three hours. Prerequisite: upper division standing. Exploration of extant materials on history and literature of theater as developed and performed by African American artists in America from slavery to the mid-1800s.  
Ms. Robinson (F)

**M103B. African American Theater History: Minstrel Stage to Rise of the American Musical.** (Same as Theater M103B.) Lecture, three hours. Prerequisite: upper division standing. Exploration of extant materials on history and literature of theater as developed and performed by African American artists in America from the minstrel stage to the rise of the American musical.  
Ms. Robinson (W)

**M103E. African American Theater History: The Depression to the Present.** (Same as Theater M103E.) Lecture, three hours. Prerequisite: upper division standing. Exploration of extant materials on history and literature of theater as developed and performed by African American artists in America from the Depression to the present.  
Ms. Robinson (Sp)

**M104A. Early Afro-American Literature.** (Same as English M104A.) Prerequisite: satisfaction of Subject A requirement. Introductory survey of black American literature from the 18th century through World War I, including oral and written forms (folktales, spirituals, sermons; fiction, poetry, essays), by authors such as Phillis Wheatley, David Walker, Frances Harper, Frederick Douglass, Harriet Jacobs, Paul Laurence Dunbar, Charles W. Chesnut, Booker T. Washington, and Pauline Hopkins.  
Ms. Smith, Mr. Yarborough

**M104B. Afro-American Literature from the Harlem Renaissance to the 1960s.** (Same as English M104B.) Prerequisite: satisfaction of Subject A requirement. Introductory survey of 20th-century black American literature from New Negro Movement of post-World War I period to the 1960s, including oral materials (ballads, blues, speeches) and fiction, poetry, and essays by authors such as Jean Toomer, Claude McKay, Langston Hughes, Sterling Brown, Nella Larsen, Zora Neale Hurston, Richard Wright, Ann Petry, James Baldwin, and Ralph Ellison.  
Ms. Smith, Mr. Yarborough

**M104C. Afro-American Literature since the 1960s.** (Same as English M104C.) Prerequisite: satisfaction of Subject A requirement. Introductory survey of diverse forms of Afro-American literary expression produced from rise of Black Arts Movement of the 1960s to the present by writers such as Amiri Baraka, Nikki Giovanni, Alice Walker, Etheridge Knight, Toni Morrison, Martin Luther King, Jr., Paule Marshall, Ernest Gaines, Ishmael Reed, and Audre Lorde. P/NP or letter grading.  
Ms. Smith, Mr. Yarborough

**M145. Ellingtonia.** (Formerly numbered 145.) (Same as Ethnomusicology M111.) Music of Duke Ellington, his life, and far-reaching influence of his efforts. Ellington's music, known as "Ellingtonia," is one of the largest and perhaps most important bodies of music ever produced in the U.S. Covers the many contributions of other artists who worked with Ellington, such as composer Billy Strayhorn and musicians Johnny Hodges, Cootie Williams, and Mercer Ellington.  
Mr. Burrell (W)

**M147. Minority Group Politics.** (Same as Political Science M147B.) Lecture, three hours; discussion, one hour. Prerequisite: one 140-level political science course or one upper division course on race or ethnicity from history, psychology, or sociology, or consent of instructor. Emphasis on dynamics of minority group politics in the U.S., touching on conditions facing racial and ethnic groups, with black Americans being the primary case for analysis. Three primary objectives: (1) to provide descriptive information about social, political, and economic conditions of the black community, (2) to analyze important political issues facing black Americans, (3) to sharpen students' analytical skills.  
Mr. Gilliam

**M158A. Comparative Slavery Systems.** (Same as History M158A.) Lecture, three hours. Examination of the slavery experience in various New World slave societies, with emphasis on outlining similarities and differences among the legal status, treatment, and slave cultures of North American, Caribbean, and Latin American slave societies.

**M158B-M158C. Introduction to Afro-American History.** (Same as History M158B-M158C.) Lecture, three hours. Survey of the Afro-American experience, with emphasis on the three great transitions of Afro-American life: transition from Africa to New World slavery, transition from slavery to freedom, and transition from rural to urban milieu.  
Mr. Hill, Ms. Stevenson

**M164. The Afro-American Experience in the U.S.** (Same as Anthropology M164.) Promotes understanding of contemporary sociocultural forms among Afro-Americans in the U.S. by presenting a comparative and diachronic perspective on the Afro-American experience in the New World. Emphasis on utilization of anthropological concepts and methods in understanding the origins and maintenance of particular patterns of adaptation among black Americans.  
Ms. Morgan

**M172. The Afro-American Woman in the U.S.** (Same as Psychology M172 and Women's Studies M172.) Prerequisite: upper division standing. Impact of social, psychological, political, and economic forces which impact on interpersonal relationships of Afro-American women as members of a large society and as members of their biological and ethnic group.  
Ms. Mays

**M175. Interracial Work, Friendship, and Love Relationships of African American Men and Women.** (Same as Honors Collegium M103 and Women's Studies M103.) Seminar, three hours. Examination of factors that influence development, maintenance, and dissolution of interracial relationships (specifically African Americans in interracial relationships) in the workplace, friendships, and intimate love relationships. P/NP or letter grading.  
Ms. Mays (Sp)

**M195. Investigative Journalism and Communities of Color.** (Same as Asian American Studies M197B.) Lecture, three hours. Impact of investigative journalism on communities of color; exploration of dimensions of power and oppression as these relate to communities of color. Coursework stresses learning by doing, with students required to apply their knowledge through writing for campus and community media. P/NP or letter grading.

**M197. Topics in Afro-American Literature.** (Same as English M197.) Variable specialized studies course in Afro-American literature. Topics include the Harlem Renaissance; Afro-American Literature in the Nadir, 1890-1914; Contemporary Afro-American Fiction. May be repeated for credit.  
Ms. Smith, Mr. Yarborough

**197B. Special Studies in Comparative Literature: Caribbean Literature.** General introduction to literature of the English-speaking Caribbean by reviewing its historical and geographical background. To analyze the historical process toward self-determination in the literature, the following topics are included: (1) alienation and the search for community, (2) "external" relationships (the ancestor, the kinsman, the other), and (3) form and language.

**199. Special Studies in Afro-American Studies (2 to 4 units).** To be arranged with faculty member who will direct the study. Prerequisites: 3.0 GPA in the major, junior or senior standing, consent of instructor. Intensive directed research project. Eight units may be applied toward major requirements.

## Graduate Courses

**M200A. Advanced Historiography: Afro-American.** (Same as History M200V.) Seminar, three hours. May be repeated for credit.  
Ms. Stevenson

**200B. Seminar: Political Economy of Race.** Prerequisite: consent of instructor. Seminar on political economy, with special reference to black political economy and with focus on dynamics of allocation of wealth and power resources among social classes and racial and ethnic groups in the U.S. Presented in a context that is at once comparative and international, seminar emphasizes internationalism and transnationalism as well as the uniqueness of the Afro-American condition. Attempts to relate the black condition in the U.S. to the socioeconomic system of this country and to compare it to political, social, and economic conditions of African peoples elsewhere.

**M200C. Selected Problems in Urban Sociology.** (Same as Sociology M262.) Seminar. Prerequisite: consent of instructor.  
Mr. Allen, Mr. Oliver

**M200D. Afro-American Sociolinguistics: Black English.** (Same as Anthropology M243Q.) Lecture, three hours. Prerequisite: consent of instructor. Basic information on Black American English, an important minority dialect in the U.S. Social implications of minority dialects examined from perspectives of their genesis, maintenance, and social functions. General problems and issues in fields of sociolinguistics examined through a case study approach. Students required to conduct research in consultation with instructor and participate in group discussion.  
Ms. Morgan

**M200E. Studies in Afro-American Literature.** (Same as English M262.) Prerequisite: consent of instructor. Intensive research and study of major themes, issues, and writers in Afro-American literature. Discussions and research on aesthetic, cultural, and social backgrounds of Afro-American writing. May be repeated for credit.  
Ms. Smith, Mr. Yarborough

**200F. African American Psychology.** Seminar. Prerequisite: consent of instructor. Survey of psychological literature as it pertains to persons of African American descent. Critical review of implications of "mainstream" research on African Americans, including discussion of research on the family, academic achievement, and psychological assessment (testing). Emphasis also on theoretical approaches advanced by African American scholars: African philosophy, perspectives on racism in psychology, and research in the black community.

**C201A-C201Z. Special Topics in Afro-American Studies.** Prerequisite: consent of instructor. Variable topics. May be repeated for credit. Concurrently scheduled with courses C101A-C101Z.

**M240. Assessment and Treatment of Afro-American Families.** (Same as Psychiatry M240.) Seminar, three hours. Designed for both mental health trainees and graduate students interested in developing and refining skills in assessment and treatment of African American families within a sociocultural context.  
Ms. Tucker, Ms. Wyatt (Sp)

**241. Special Topics in Afro-American Studies.** Lecture, four hours; discussion, one hour. Intensive research and study of major themes and issues in various areas of Afro-American studies.

**270A. Survey of Afro-American Research.** Seminar, three hours. Overview of research methodologies in humanities and social sciences, with firsthand reports from faculty in various fields. Introduction to research in and related to Afro-American studies and application of such research.

**596. Directed Readings and Tutorials.** Provides students with umbrella under which they can pursue specialized interests from which there is insufficient demand to warrant offering a formal course.

**597. Preparation for M.A. Comprehensive Examination (4 or 8 units).** Prerequisites: graduate standing, consent of instructor. May not be applied toward M.A. course requirements. S/U grading.

**598. Research for and Preparation of M.A. Thesis (4 or 8 units).** Prerequisites: graduate standing, consent of instructor. May not be applied toward M.A. course requirements. S/U grading.

## American Indian Studies (Interdepartmental)

3220 Campbell Hall, (310) 825-7315

### Professors

Richard L. Abel, LL.B., Ph.D. (*Law*)  
 Paula Gunn Allen, Ph.D. (*English*)  
 Robert A. Georges, Ph.D. (*English*)  
 Carole E. Goldberg-Ambrose, J.D. (*Law*)  
 Charlotte A. Heth, Ph.D. (*Ethnomusicology and Systematic Musicology*)  
 James N. Hill, Ph.D. (*Anthropology*)  
 Cecelia F. Klein, Ph.D. (*Art History*)  
 Kenneth R. Lincoln, Ph.D. (*English; Distinguished Teaching Award*)  
 Pamela L. Munro, Ph.D. (*Linguistics*)  
 Gary B. Nash, Ph.D. (*History; Distinguished Teaching Award*)  
 Allegra Fuller Snyder, M.A., Emerita (*Dance*)

### Associate Professors

Duane Champagne, Ph.D. (*Sociology*)  
 Paul V. Kroskrity, Ph.D. (*Anthropology*)

### Assistant Professors

D. Michael Pavel, Ph.D. (*Education*)  
 Greg M. Sarris, Ph.D. (*English*)

### Visiting Associate Professor

Hanay Geigomah, B.F.A. (*Theater*)

## Scope and Objectives

Because UCLA possesses a substantial number of faculty in the humanities and social sciences engaged in teaching and conducting research on American Indians, the nation's first interdisciplinary M.A. program in American Indian Studies was established here.

The program draws primarily on existing courses in the participating departments, where research and research methodologies are of primary concern. Students are exposed to Indian-related research in a number of different disciplines; demonstration of research skills is required. You will graduate with the training you need to teach Native American studies or to serve in an administrative capacity in Indian programs. The M.A. program is coordinated by the American Indian Studies Center and ranks among the top Indian studies programs in the country.

## Master of Arts Degree

### Admission

A bachelor's degree from an accredited undergraduate institution is required for admission to the M.A. program in American Indian Studies. You must demonstrate interest in American Indian studies either by formal coursework, independent study, or practical experience. As part of the application, you must submit a detailed account of your background, potential career plan, and interest in American Indian studies. Preference is given to individuals with undergraduate majors relevant to the proposed areas of concentration within the M.A. degree: American Indian studies, anthropology, English, fine arts, history, linguistics, literature, or sociology.

Entering students must meet the University's minimum admission requirement of a 3.0 grade-point average in all work completed during the last two undergraduate years and in all prior graduate work. The Graduate Record Examination (GRE) is not required, but you are encouraged to take the examination and submit test results as part of the documents supporting your enrollment application. At least three faculty letters of recommendation must be submitted. You may obtain application forms and further information from the Committee to Administer the M.A. Degree in American Indian Studies, American Indian Studies Center, 3220 Campbell Hall, UCLA, Los Angeles, CA 90024-1548.

### Major Fields or Subdisciplines

The American Indian Studies M.A. is an interdepartmental program with 11 participating academic schools and departments: Anthropology, Art History, Education, English, History, Law, Library and Information Science, Linguistics, Music, Sociology, and Theater. The 11 disciplines are grouped into four areas of concentration: history and law; expressive arts; social relations; and language, literature, and folklore. Courses related to the American Indian Studies M.A. are also offered in the following departments and school: Political Science, Psychology, and Social Welfare.

### Linguistics Requirement

Students in the M.A. program must successfully complete one of the following: (1) Linguistics 114, (2) Anthropology 243P, or (3) for native speakers of an American Indian language, an independent study course (approved by the instructor) in either linguistics or anthropology in which a structural knowledge of the student's language is learned. These courses are designed to show how American Indian languages and communicative norms are primary vehicles for understanding American Indian cultures.

### Course Requirements

(1) A minimum of 10 courses is required, at least seven of which must be graduate courses. Four courses are required: American Indian Studies M200A, M200B, M200C (which ordinarily must be taken in the first year), and one of the linguistics requirement options described above, which must be taken by the end of the second year. In addition, one of the remaining six courses must be a graduate course concerned with research methodology.

(2) All M.A. candidates select one of the following areas of concentration: (a) history and law, (b) expressive arts, (c) social relations, (d) language, literature, and folklore. You can petition for optional combinations of interdisciplinary work through the program committee. In addition to the four required courses, you must complete a minimum of four courses in your area of concentration. Three of these must be graduate-level courses. Two additional courses are to be chosen from other areas of concentration. Courses must be selected from an approved list maintained by the program.

(3) Two courses in the 500 series may be applied toward the total course requirement; however, only one 596 course may be applied toward the minimum graduate course requirement.

### Thesis or Comprehensive Examination Plan

You may select either (1) a thesis plan or (2) a comprehensive examination plan to complete the degree program. The committee members supervising the thesis or administering the comprehensive examination are selected by you with the consent of the program committee. Copies of the thesis must be submitted to each committee member by the fifth week of the term in which you expect to graduate. If you choose the comprehensive examination plan, you must demonstrate in a written and/or oral examination your competency in the major and minor areas of study.

### Upper Division Course

**197. Special Topics in American Indian Studies.** Variable topics selected from the following: Myth and Folklore of Indian Societies; Contemporary American Indian Literature; Social Science Perspectives of American Indian Life; Law and the American Indian; History of American Indians (cultural area); Dance and Music of American Indians (cultural area); American Indian Policy. Consult *Schedule of Classes* for topics and instructors. May be repeated twice for credit. (F,W,Sp)

### Graduate Courses

**M200A. Advanced Historiography: American Indian Peoples.** (Same as History M200W.) Seminar, three hours. Designed to familiarize students with major genres of literature related to American Indian history. Subjects include theories of Indian origins, historical demography, Euro-American attitudes toward Indian peoples, studies of U.S. Indian policy, and tribal histories. Standard theoretical approaches, including cultural ecology and dependency theory.

**M200B. Cultural World Views of Native America.** (Same as English M266.) Seminar, three hours. Exploration of written literary texts from oral cultures and other expressive cultural forms — dance, art, song, religious and medicinal ritual — in selected Native American societies, as these traditional and tribal contexts have been translated into contemporary literary texts (fiction, poetry, essay, and drama). Survey, from secondary sources, of interdisciplinary methodological approaches taken from literary analysis, structural anthropology, folklore, linguistics, and ethnomusicology.

Ms. Allen, Mr. Lincoln, Mr. Sarris

**M200C. Contemporary Issues of the American Indian.** (Same as Anthropology M269 and Sociology M275.) Introduction to most important issues facing American Indians as individuals, communities, tribes, and organizations in the contemporary world, building on historical background presented in course M200A and cultural and expressive experience of American Indians presented in course M200B.

Mr. Champagne

**201. Topics in American Indian Studies.** Discussion, three hours. Prerequisite: consent of instructor.

## Anthropology

341 Haines Hall, (310) 825-2055

### Professors

C. Rainer Berger, Ph.D.  
 Nicholas Blurton Jones, Ph.D.  
 Robert Boyd, Ph.D.  
 Francesca Bray, Ph.D.  
 Christopher B. Donnan, Ph.D.  
 Timothy Earle, Ph.D.  
 Robert B. Edgerton, Ph.D. (*Distinguished Teaching Award*)  
 Peter B. Hammond, Ph.D.  
 James N. Hill, Ph.D.  
 Allen W. Johnson, Ph.D.  
 Claudia Mitchell-Kernan, Ph.D.  
 Merrick Posnansky, Ph.D.  
 Dwight Read, Ph.D.  
 James R. Sackett, Ph.D.  
 Karen B. Sacks, Ph.D.  
 Susan C. Scrimshaw, Ph.D.  
 Thomas S. Weisner, Ph.D.

### Professors Emeriti

Joseph B. Birdsell, Ph.D.  
 William O. Bright, Ph.D.  
 Walter R. Goldschmidt, Ph.D.  
 John G. Kennedy, Ph.D.  
 Lewis L. Langness, Ph.D.  
 William A. Lessa, Ph.D.  
 Jacques Maquet, Ph.D.  
 Clement W. Meighan, Ph.D.  
 Michael Moerman, Ph.D.  
 Philip L. Newman, Ph.D.  
 Henry B. Nicholson, Ph.D.  
 Wendell H. Oswalt, Ph.D.  
 Douglass R. Price-Williams, Ph.D.  
 Johannes Wilbert, Ph.D. (*Distinguished Teaching Award*)  
 Bobby Joe Williams, Ph.D.

### Associate Professors

Robert C. Bailey, Ph.D.  
 Carole Browner, Ph.D.  
 Alessandro Duranti, Ph.D.  
 Gail E. Kennedy, Ph.D.  
 Paul V. Kroskrity, Ph.D.  
 Richard Leventhal, Ph.D.  
 Nancy E. Levine, Ph.D.  
 Michael Raleigh, Ph.D.  
 Joan Silk, Ph.D.

### Assistant Professors

Jeanne Arnold, Ph.D., in *Residence*  
 Douglas Hollan, Ph.D.  
 Marcyliena H. Morgan, Ph.D.  
 Kyeyoung Park, Ph.D.  
 Nadine R. Peacock, Ph.D.  
 Anna Simons, Ph.D.  
 Mariko Tamanoi, Ph.D.

### Adjunct Professor

Gerardo Reichel-Dolmatoff, Ph.D.

### Adjunct Associate Professor

Donald Lindburg, Ph.D.

## Scope and Objectives

Anthropology, the broadest of the social sciences, is the study of humankind. One of the strengths of anthropology as a discipline is its "holistic" or integrative approach; it links the life sciences and the humanities and has strong ties with disciplines ranging from biology and psychology to linguistics, political science, and the fine arts. Anthropological study is appropriate for people with a wide variety of interests: human cultures and civilizations both present and past, human and animal behavior, particular regions of the world such as Africa, Asia, Latin America, Oceania, etc.

The department recognizes the following four fields in anthropology:

**Archaeology** is diverse in both methodology and geographic coverage. The greatest strengths within the department lie in the study of cultural evolution, complex societies, hunters/gatherers, iconography, craft specialization, quantitative analysis, and political economy and include major programs focused on Western North America, the high cultures of Mesoamerica and South America, Europe, Africa, and the Caribbean.

**Biological anthropology** is a comprehensive program on evolutionary anthropology, with emphasis on the behavioral and reproductive ecology of humans and other primates. It includes training in evolutionary theory, behavioral ecology, human ethology, reproductive physiology and ecology, paleoanthropology, primate behavior and evolution, and mathematical modeling. Faculty members have engaged in fieldwork on several continents, particularly Africa, where ongoing projects include work on human reproductive ecology, dietary and subsistence ecology, and human ethology.

**Linguistic anthropology** is an interdisciplinary field which addresses the manifold ways in which communication and culture mutually define one another in different communities worldwide. Linguistic anthropologists at UCLA have a variety of backgrounds and research interests which include the ethnography of face-to-face communication, language contact and change, verbal art and performance, and language and education. Courses are offered in urban sociolinguistics, ethnographic approaches to discourse analysis, field methods, and conversational analysis, as well as in

cross-cultural pragmatics (including visual aspects of communication).

**Sociocultural anthropology** concerns the examination and understanding of social systems and cultural perceptions, and the human capacities which have enabled them. Its goal is to understand their operation in specific settings and to understand the experience of individuals who live in these diverse systems. Faculty members have engaged in fieldwork in almost every area of the world, but most notably in Africa, South America, East and Southeast Asia, and Oceania. They have also engaged in ethnographic research among Americans with diverse ethnic identities and in various institutional settings.

Cutting across the four fields are three other categories of course offerings: **applied anthropology, regional cultures, and history, theory, and method.**

The department offers Bachelor of Arts and Bachelor of Science degrees in Anthropology for undergraduates; the graduate program leads to the Master of Arts and Ph.D. degrees. Studies in anthropology are particularly valuable for students planning careers in which an understanding of human behavior and cultural diversity is desirable, such as business, education, law, medicine, nursing, public health, social welfare, and urban planning. Because of its breadth of outlook, anthropology also offers an ideal basis for those seeking a general education in our increasingly interdependent world.

## Bachelor of Arts Degree

### Preparation for the Major

*Required:* Anthropology 7, 8, 9, and one elective from 10, 15, 33, 60, 60P, 80. *All courses must be taken for a letter grade, and you must maintain an overall 2.0 GPA.*

### The Major

The major is designed for students interested in an anthropological understanding of human behavior. One of the strengths of anthropology is its cross-cultural "holistic" and integrative approach with many fields, such as biology, history, linguistics, the social sciences, and many of the humanities.

To provide a comprehensive understanding of the discipline as a whole, you must take two courses in the sociocultural anthropology field and one course in each of the other three fields (see "Scope and Objectives" above). One upper division survey core course is offered in each field (two in sociocultural anthropology), but you may take any course in the given area to fulfill this requirement. *All courses must be taken for a letter grade, and you must maintain an overall 2.0 GPA.*

You must complete 14 four-unit courses as follows:

(1) Two upper division courses in the sociocultural anthropology field and one in each of

the other three fields (archaeology, biological anthropology, and linguistic anthropology).

(2) One upper division course in regional cultures.

(3) Four additional upper division anthropology courses.

(4) Four courses in related fields selected from a list maintained in the department.

Students considering graduate work in anthropology are strongly encouraged to take at least one course in the history and theory of anthropology and one course in methodology in addition to the upper division core courses in the four fields.

### Concentrations for the Major

Concentrations, although not required, may help define and structure an anthropology major when you want emphasis in one of the four major fields. Whether or not you opt for a concentration, the requirements for the major must still be satisfied. It is possible to use courses within your specified concentration to fulfill overlapping requirements for the major. If you fulfill a concentration as part of your B.A. degree requirements, you will receive a notation on your transcript certifying completion of the concentration. Exceptions to the requirements below are by petition only. More detailed information on the concentrations is available from the undergraduate adviser.

(1) *Archaeology* — Anthropology 115P, 117 (fieldwork); two courses from 110, 111, 183; one laboratory methods course from 115R, M115S, M116Q, 117P, 118A, C126P, 129Q, 138; one quantitative methods course from 80, 186A, 186B; one area course from 112, 113P, 113Q, 113R, 114P, 114Q, 114R; three theory courses from 120, 124, 132, 133Q, 133R, 150, 152, 153, 156, 158, 186P, M189A, M189B, Geography 109, 140, 148, Sociology 101

(2) *Biological Anthropology* — Anthropology 120; one quantitative methods course from 80, 186A, 186B; one methods course from 115P, M116Q, 117, 117P, 124R, C126P, 129P, 143; one human biology and behavioral ecology course from 122, 124, 124Q, 186P, M189A, M189B; one paleoanthropology course from 121A, 121B, 121C, or both 12 and 129Q (credit will not be granted for both courses 7 and 12); one human genetics course from 123, 125, Biology 108, 135, CM156; one primate behavior course from Anthropology 128A, 128B, Biology 129

(3) *Linguistic Anthropology* — Anthropology 33, 34, M140, Linguistics 20, Sociology CM124A; two methods courses from Anthropology 141, 142A, 143, Linguistics 103; one ethnography course from Anthropology 144, 145, 146, Linguistics 114; one course from Anthropology 133Q, 133R, 135A, 135B, 135C, 137, Communication Studies 100, Linguistics 110, 127, Psychology M137J; one term of a non-European language

(4) *Sociocultural Anthropology* — Anthropology 130, 150; one primary course from three of

the four subconcentrations listed below; two history, theory, and methods courses from 80, C126P, 139, 182, 186A, 186B, Sociology 101; one region and society course from 158, 171, 172R, 172T, 173Q, 174P, 174Q, 175P, 175Q, 175R, 175T, 175U, 177; two additional courses from one of the subconcentrations listed below:

(a) *Applied and Development Subconcentration* — Primary courses: Anthropology 60, 60P, 161, M166; additional courses: M155Q, 162, M162P, 167, M168, 186B, Development Studies M100B

(b) *Ecological and Evolutionist Subconcentration* — Primary course: Anthropology 153; additional courses: 128A, 128B, 132, 158, 165, 186B, 186P, Geography 140

(c) *Social Processes and Practice Subconcentration* — Primary courses: Anthropology 151, 152, M154; additional courses: 88, 128A, 128B, 153, 155, 156, 158, M162P

(d) *Psychocultural and Medical Subconcentration* — Primary courses: Anthropology 135A, 135B, 135C, 135T; additional courses: 130P, 135S, M168

### Honors Program

The honors program provides research-oriented students with opportunity to engage in original research and analysis under the close supervision of faculty members and culminates in an honors thesis. To be admitted you must have junior standing and have completed at least two upper division anthropology courses and Anthropology 197H (taken in Winter Quarter of your junior year). You should have a cumulative GPA of 3.0 overall and a 3.5 cumulative GPA in your upper division anthropology courses. The application for admission must be submitted to the honors committee at the end of course 197H. The proposal, research, analysis, and writing of your paper take place over three terms through courses 199HA, 199HB, and 199HC. Course 199HA should be taken in Spring Quarter of your junior year; 199HB and 199HC are taken in Fall and Winter Quarters of your senior year. Exceptions to the above schedule are by petition only. Contact the undergraduate adviser early in your studies for more information.

### Bachelor of Science Degree

#### Preparation for the Major

*Required:* Anthropology 7 or 12, 8, 9, 10 or 15; Biology 5, 9, 100A, 108; Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL; Mathematics 3A, 3B, and 3C, or 31A and 31B; Physics 3A, 3B, and 3C, or 6A, 6B, and 6C. *All courses must be taken for a letter grade, and you must maintain an overall 2.0 GPA.*

#### The Major

The major provides an overview of human evolution and is designed to prepare students for careers in anthropology and the health sci-

ences, including medicine, dentistry, public health, and nursing. *All courses must be taken for a letter grade, and you must maintain an overall 2.0 GPA.*

You must complete 16 four-unit courses as follows:

(1) Two upper division courses in the socio-cultural anthropology field and one in each of the other three fields (archaeology, biological anthropology, and linguistic anthropology).

(2) One upper division course in regional cultures.

(3) Two statistics courses (sequential recommended).

(4) Four additional upper division anthropology courses.

(5) Four four-unit courses in related fields selected from a list maintained in the department.

### Specialization in Computing

Majors in either anthropology bachelor's degree program may select a specialization in computing by (1) completing Program in Computing 10A, 10B, and 10C or 15, (2) completing one course from Anthropology 186A or 186B, (3) completing either a 199 course that focuses on the integration of computer methods with anthropological studies or one course from Program in Computing 60, Computer Science 172, or Mathematics 61, or an equivalent course (subject to approval of the departmental computer committee), and (4) satisfying all the other requirements for a bachelor's degree in the specified major. You graduate with a bachelor's degree in your major and a specialization in computing. Interested students should contact the undergraduate adviser.

### Graduate Study

#### Admission

Admission to the graduate program in anthropology is limited to Fall Quarter. The department does not require an undergraduate major in anthropology, though this is desirable. Promising students with a B.A. or M.A. in another field may be admitted, in which case a program of background studies based on previous training and current objectives is formulated. Knowledge of a foreign language is not required for admission, but completion of the language requirement before beginning work is highly recommended, and such students are at an advantage in the selection process.

Applications and all supporting material must be submitted by December 15, 1993, to be considered for admission for Fall Quarter 1994.

UCLA Graduate Application Processing (P.O. Box 23895, Oakland, CA 94623-0895) requires submission of an official application (with fees) and official transcripts of record, in duplicate, from each college or university at which work has been completed.

In addition, you must submit the following directly to the Graduate Counselor, Department of Anthropology, 341 Haines Hall, UCLA, Los Angeles, CA 90024-1553:

- (1) Three letters of recommendation (preferably from anthropologists).
- (2) Graduate Record Examination (GRE) scores.
- (3) A research or term paper.
- (4) Statement of purpose.

The department requires two faculty members to sponsor an applicant before admission is recommended.

For further information on the departmental program, a graduate syllabus may be obtained without charge by writing to the above departmental address.

## Master of Arts Degree

### Foreign Language Requirement

M.A. language requirements may be met by:

- (1) Passing the Graduate School Foreign Language Test (GSFLT) with a score of 500 or better or
- (2) Passing a departmental examination or other demonstrations of proficiency in a foreign language by petition to the department chair and the dean of the Graduate Division.

Students whose native language is not English may petition to waive the requirement. Formal written petition for such waiver must be submitted to the guidance committee, department chair, and the Graduate Division.

### Core Course Requirements

You must demonstrate basic knowledge in the four fields by one or a combination of the following: (1) passing the core course with a grade of B or better, (2) petitioning that work taken elsewhere constitutes the equivalent of such courses, or (3) passing a special examination in each, in Spring Quarter of your first year in residence. Courses taken while in graduate standing to meet these field requirements may also serve to meet course unit demands for the M.A. degree.

### Course Requirements

The minimum course load is three courses (12 units) per term, but this requirement may be waived by petition to the department chair. An M.A. degree requires 10 courses (40 units) taken for a letter grade with a minimum 3.0 grade-point average.

- (1) Four courses may be upper division (100 series).
- (2) One course must be a graduate core seminar in your chosen subfield of specialization (e.g., Anthropology M201A for archaeology, course 202 for biological anthropology, course 203 for sociocultural anthropology, course 204 for linguistic anthropology).

(3) In addition to the appropriate graduate core seminar, you must take five other graduate seminars (200 series).

(4) Three courses may be outside the major with consent of the guidance committee.

(5) Two courses may be anthropology independent studies (see department for course numbers) with consent of the guidance committee.

Eight units of course 596 taken for a letter grade may be applied toward the total M.A. course requirement, with four of these units applicable toward the minimum graduate course requirement.

### Thesis

By your fourth term of study, you select a thesis committee of departmental faculty to supervise your research and writing. The committee, as well as your thesis topic, must be approved by the department and the dean of the Graduate Division. Prior to completing the M.A. degree requirements, you file a Petition for Advancement to Candidacy form with the Graduate Division. The approved thesis must be typed and filed according to University regulations; information on regulations and procedures is available from the Graduate Division. Evaluation of the thesis provides the basis for the thesis committee's recommendation and departmental faculty vote regarding both the acceptability of the thesis for the M.A. degree and admission into the doctoral program.

## Ph.D. Degree

### Admission

If you are entering the department with an M.A. in Anthropology from another university or in a field other than anthropology, you must satisfy all master's degree requirements with the exception of the thesis. To fulfill this requirement, you may submit your prior master's thesis or a research paper written as a graduate student (whether or not in anthropology). Only after satisfying these requirements are you admitted into the Ph.D. program.

### Foreign Language Requirement

You must satisfy the Ph.D. language requirement before formally nominating the five-member doctoral committee and before taking the qualifying examinations. Any language useful for field study and/or library research is acceptable. You must submit to your departmental committee a comprehensive annotated bibliography and demonstrate familiarity with its contents by taking a written or oral examination. The format of the examination is determined by your doctoral committee. Students who speak English as a second language may waive the language requirement by petition to their committee, the department chair, and the Graduate Division. Under unusual circumstances, the department will consider alternate means of fulfilling the requirement.

## Course Requirements

You must be in residence for one year between receipt of the M.A. degree and advancement to doctoral candidacy. During this time, coursework must be done with at least three different members of the faculty. You must be enrolled in a minimum of 12 units (this requirement may be waived by petition to the department chair) or be on an official leave of absence.

## Qualifying Examinations

Qualifying examinations are conducted in two parts: (1) a written examination and (2) the University Oral Qualifying Examination. The timing of the examinations is arranged with members of the doctoral committee, but they may not take place earlier than the third term after receiving the M.A. degree. The written examination must be completed within the first eight weeks of the given term; the University Oral Qualifying Examination is expected to be completed in the same term, but no later than the following term.

The format for the written examination is determined by the doctoral committee which examines you in three subfields of your choice. Two of these three subfields are selected from a list available in the department; the third is specific to your needs, interests, and dissertation plans. After you successfully complete the written examination, the doctoral committee administers the University Oral Qualifying Examination, in which you are required to present a defense of your dissertation proposal. The committee determines the conditions for reexamination should you fail either examination.

## Final Oral Review and Examination

The department requires a review of the completed dissertation by the doctoral committee as a whole and a public presentation of the results of the dissertation.

The final oral examination focuses on your dissertation and may be waived by your doctoral committee.

## Lower Division Courses

**7. Human Evolution.** Lecture, three hours; discussion, one hour. Required as preparation for B.A. degree. Not open for credit to students with credit for course 12. Evolutionary processes and evolutionary past of the human species.

**8. Archaeology: An Introduction.** Lecture, three hours; discussion, one hour. Required as preparation for both bachelor's degrees. General survey of field and laboratory methods, theory, and major findings of anthropological archaeology, including case-study guest lectures presented by several departmental archaeologists.

**9. Sociocultural Anthropology.** Lecture, three hours; discussion, one hour. Required as preparation for both bachelor's degrees. Introduction to study of culture and society in comparative perspective. Examples from societies around the world to illustrate basic principles of formation, structure, and distribution of human institutions. Of special concern is the contribution and knowledge that cultural diversity makes toward understanding the problems of the modern world. P/NP or letter grading.

**10. Principles of Human Evolution: Genetic Basis.** Lecture, three hours; discussion, one hour. Required as preparation for B.S. degree. Human population biology in the conceptual framework of evolutionary processes. Emphasis on genetic basis of evolution, population biology, and diversity among living populations.

**12. Principles of Human Evolution: Comparative Analysis.** Lecture, three hours; discussion, one hour. Required as preparation for B.S. degree. Not open for credit to students with credit for course 7. Human population biology in the conceptual framework of evolutionary processes. Emphasis on comparative primate behavior, structural anatomy, and the fossil record.

**15. Human Biology and Behavior.** Lecture, three hours; discussion, one hour. Human biology and behavior through the life cycle from conception to senescence. Discussion of natural selection, sexual selection, and life history theory. Factors influencing variation in fertility and mortality: reproductive ecology, growth, development, and aging.  
Mr. Bailey, Ms. Peacock

**33. Culture and Communication.** Lecture, three hours; discussion, one hour. Introduction to ways in which culture and communication shape each other, with emphasis on importance of language as a symbolic and practical guide to people's behavior and understanding of each other's actions. Topics include language socialization, cross talk, and verbal and nonverbal communication.  
Mr. Duranti (F)

**34. Introduction to Urban Speech Communities.** Lecture, three hours; discussion, one hour. Introduction to study of speech communities in metropolitan areas, with special focus on communities in Los Angeles. Emphasis on ways in which communities share and incorporate speech norms of urban society while maintaining rules for conduct and interpretation of speech within specific speech communities. Topics include language and identity, socialization, social dialects, and communication.  
Ms. Morgan

**60. Anthropology for Today.** Lecture, three hours. Lectures, films, readings, and discussions, with focus on critical evaluation of anthropological method and theory to understand cultural aspects of a selection of pressing problems in the modern world. Examination of such domestic issues as poverty and social inequality, educational reform, public health and mental health, conflict and criminality, as well as such Third World issues as economic development, environmental protection, population control, political modernization, diplomacy, warfare, revolution, refugee and disaster relief, minority rights, and protection of indigenous peoples. Survey of ethical issues and career opportunities in applied anthropology.  
Mr. Hammond

**60P. Internships in Applied Anthropology.** Seminar, three hours. Prerequisite: course 60. Designed to give students firsthand experience working in agencies in public and private sectors (e.g., refugee relief centers, drug rehabilitation programs, community development agencies, mental health clinics, etc.) selected for their relevance to individual students' prospective professional interests. Eight to 12 hours per week, complemented by weekly seminars, field evaluations, and preparation of a field journal.  
Mr. Hammond

**80. Introduction to Quantitative Methods.** Lecture, three hours; discussion, one hour. Data analysis as a way to reason with quantitative information. Topics include description (frequency distribution tables, histograms), population specification (mean and standard deviation, normal distribution), samples and estimation procedures (central limit theorem), and hypothesis testing (t-test, chi-square test).  
Mr. Read

**88. Lower Division Seminar.** Seminar, three hours. Variable topics; consult *Schedule of Classes* or department for topics to be offered in a specific term. P/NP or letter grading.

**88A. Diversity in American Cultures.** Discussion of readings, followed by seminar presentations, with focus on cross-cultural analysis of attributes common to all societal forms in which differences culturally defined as significant affect both individual life chances and societal well-being.  
Mr. Hammond

## Upper Division Courses

All upper division courses with letter designations (A, B, P, Q, etc.) may be taken independently unless otherwise stated.

### Archaeology

**110. World Archaeology.** Prerequisites: course 8 and upper division standing, or consent of instructor. Broad survey of human culture history from its Stone Age beginnings to establishment of the primary civilizations of the Old and New Worlds. Intended for students with general interest in archaeology and in an anthropological approach to study of the past.  
Mr. Sackett

**111. Study of Archaeology.** Survey of contemporary prehistoric archaeology. Emphasis on what archaeologists do, and how and why they do it. Contributions of archaeology to the modern world. Intended for students with a desire to explore the nature of anthropological archaeology. (Core course for archaeology field.)  
Mr. Hill

**112. Old Stone Age Archaeology.** Lecture, three hours. Prerequisite: course 8 or consent of instructor. Development of Paleolithic cultural traditions in Europe, Africa, Asia, and the New World. Emphasis on the ordering and interpretation of archaeological data, Pleistocene geology and chronology, and relationship between human cultural and biological evolution.  
Mr. Sackett

**113P. Archaeology of North America.** Lecture, three hours. Prehistory of North American Indians; evolution of Indian societies from earliest times to (and including) contemporary Indians; approaches and methods of American archaeology.

**113Q. Prehistory of California Indian Cultures.** Examination of the California archaeological record from earliest human evidence to historic times, with emphasis on development of cultural diversity.

**113R. Southwestern Archaeology.** Examination of prehistory of the American Southwest from Early Man to historic times. Emphasis on describing and explaining cultural variation and change, employing an ecological and evolutionary perspective. Special attention to "Great Events" (agriculture, town living, and the Great Abandonment). Evolutionary processes generalized and related to contemporary world problems.  
Mr. Hill

**114P. Ancient Civilizations of Western Middle America (Nahuatl Sphere).** Pre-Hispanic and Conquest period native cultures of Western Middle America, as revealed by archaeology and early colonial writings in Spanish and Indian languages. Toltec/Aztec and Mixteca civilizations and their predecessors, with emphasis on sociopolitical systems, economic patterns, religion, and aesthetic and intellectual achievements.

**114Q. Ancient Civilizations of Eastern Middle America (Maya Sphere).** Pre-Hispanic and Conquest period native cultures of Eastern Middle America, as revealed by archaeology and early colonial writings in Spanish and Indian languages. Lowland and Highland Maya civilizations and their predecessors, with emphasis on sociopolitical systems, economic patterns, religion, and aesthetic and intellectual achievements.  
Mr. Leventhal

**114R. Ancient Civilizations of Andean South America.** Lecture, three hours. Prerequisite: course 8 or 9. Pre-Hispanic and Conquest period native cultures of Andean South America, as revealed by archaeology and early Spanish writing. The Inca and their predecessors in Peru, with emphasis on sociopolitical systems, economic patterns, religion, and aesthetic and intellectual achievements.  
Mr. Donnan

**115P. Archaeological Field Training (4 to 8 units).** Lecture, two to six hours; discussion, eight or more hours. Prerequisite: consent of instructor. Procedures of archaeological excavation, mapping, stratigraphy, collecting, and recording of archaeological data (field class conducted off campus). Summer field session in various locations set by individual instructor.  
Ms. Arnold (Sp,Sum)

**115R. Strategy of Archaeology.** Lecture, three hours. Prerequisite: course 8 or consent of instructor. Introduction to problem formulation, theory, and method in archaeology, with emphasis on development of research designs. Focus on how archaeological research is conceived and planned, with consideration of differing viewpoints and their usefulness.  
Mr. Hill

**M115S. Historical Archaeology.** (Same as History M103.) Survey of aims and methods of historical archaeology as practiced on both sides of the Atlantic, with case studies from North America, the Caribbean, Africa, and Europe.  
Mr. Posnansky

**M116Q. Dating Techniques in Environmental Sciences and Archaeology.** (Same as Geography M178.) Lecture, three hours; reading period, one hour. Prerequisite: consent of instructor. Introduction to scientific dating methods such as radiocarbon dating, radiation damage methods, biological dating techniques, and magnetic dating, and applications in environmental sciences, archaeology, and physical anthropology.  
Mr. Berger

**117. Archaeological Materials Analysis: Laboratory Methods.** Lecture, three hours; laboratory, three hours. Prerequisite: course 8. Training in archaeological analysis of prehistoric cultural materials, including chipped and ground stone artifacts, vertebrate fauna, shellfish, ceramics, ornaments and beads, and craft production materials from sites worldwide. Introduction to electronic measurement instrumentation and computerization of archaeological data. P/NP or letter grading.  
Ms. Arnold (W)

**117P. Intensive Laboratory Training in Archaeology.** Lecture, three hours; laboratory, four hours. Prerequisites: courses 116P, 117, or equivalent. Archaeologists with special expertise in specific analytical techniques and topics oversee intensive laboratory training on a tutorial or small-class basis on one of the following topics: zooarchaeology, ethnobotany, lithic analysis, ceramic analysis, etc. May be repeated for credit with topic change. P/NP or letter grading.  
Ms. Arnold

**118A. Museum Studies.** Prerequisite: consent of instructor. Method and theory of museum operation. Discussion and demonstration of acquisition accession, storage, photography, conservation, and exhibition. Analysis of museum research, publication, and teaching, as well as museum administration and funding. Lectures and demonstrations structured to illustrate how various aspects of museum operation are interrelated.  
Mr. Donnan and the Museum Staff

**118B. Museum Studies.** Prerequisites: course 118A, consent of instructor. Two areas of museum operation are selected by students from those discussed and demonstrated in course 118A. Students are then required to develop expertise in these areas through a combination of library research and a series of assignments carried out in the museum.  
Mr. Donnan and the Museum Staff

### Biological Anthropology

**120. Survey of Biological Anthropology.** Lecture, three hours. Prerequisites: courses 10, 12, or equivalent. Limited to majors and graduate students in anthropology. Survey of biological anthropology including all major subareas. Lecture/seminar format requires attendance at a recitation section in addition to lectures. (Core course for biological field.)

**120G. Biological Anthropology in Review.** Lecture, three hours; seminar, three hours. Corequisite: lecture portion of course 7. Limited to graduate students in anthropology. Designed for anthropology students who have a deficiency in biological anthropology. Seminar discussion based on basic evolutionary principles, behavior of nonhuman primates, hominid evolutionary history, and contemporary human variation.

Mr. Boyd

**121A. Primate Fossil Record.** Lecture, three hours. Recommended (but not prerequisite): courses 10, 12. Course 121A should be taken before 121B and 121C. Introduction to method and theory in paleoanthropology. Primate evolution, Cretaceous through the Miocene.

**121B. The Australopithecines.** Lecture, three hours. Prerequisite: consent of instructor. Recommended: courses 10, 12, 121A. Morphology, ecology, and behavior of the genus *Australopithecus*. History of their discoveries and their place in human evolution.

Ms. Kennedy

**121C. Evolution of the Genus *Homo*.** Lecture, three hours. Prerequisite: consent of instructor. Recommended: courses 10, 12, 121A, 121B. Origin and evolution of the genus *Homo*, including archaic sapiens and Neanderthals. Morphology, ecology, and behavior of these groups. Course ends with appearance of modern man.

Ms. Kennedy

**122. Biology, Society, and Culture.** Lecture, three hours. Prerequisite: course 12. Investigation of interaction between human biology and human behavior. Particular emphasis on influences of human biological evolution on human cultural evolution and human cultural evolution on human biological evolution.

**123. Human Genetics.** Lecture, three hours. Recommended (but not prerequisite): course 10. Discussion of nature and causes of human biological variation. Development and comparison of evolutionary models of genetic and phenotypic changes. Emphasis on geographical and cultural contributions to development of observed patterns of human biological variation.

**124. Evolution and Biology of Human Behavior.** Comparative survey of behavior patterns of preliterate and Paleolithic peoples and those of nonhuman primates. Assessment of biological variables fundamental to human and prehuman behavior with regard to theories on evolution of human culture.

Mr. Blurton Jones

**124P. Evolution of Human Sexual Behavior.** Lecture, three hours. Prerequisite: consent of instructor. Recommended: course 7 or 10 or 12 or equivalent. Examination of human sexual relations and social behavior from an evolutionary perspective. Emphasis on theories and evidence for differences between men and women in their patterns of growth, maturation, fertility, mortality, parenting, and relations with members of the opposite sex.

Mr. Bailey

**124Q. Physiology of Human Behavior.** Lecture, three hours. Prerequisites: upper division standing and/or consent of instructor. Overview of neural, physiological, and endocrine substrates of a variety of human behaviors, including sexual behavior, aggression, language, and affiliative behavior. Emphasis on evolutionary origins, developmental pathways, and cross-cultural expressions of behaviors examined. Focus on human behavior, with evidence from animal literature as well.

Ms. Peacock

**124R. Laboratory Methods in Human Behavioral Endocrinology (6 units).** Lecture, three hours; laboratory, three hours (plus time to complete project). Prerequisite: course 124Q or consent of instructor. Introduction to laboratory methods in neuroendocrinology for students in social and behavioral sciences. Emphasis on field-compatible methods. Design and execution of a small research project.

Ms. Peacock

**125. Genetics of Human Diversity.** Lecture, three hours. Survey of human biological diversity. Emphasis on genetics at the population level for both discrete and quantitative variation. Analytic methods and evolutionary hypotheses.

**C126P. Introduction to Field Methods in Human Ecology.** (Formerly numbered 126P.) Lecture, three hours. Prerequisite: upper division or graduate standing. Survey of methods used in anthropological investigations emphasizing human biology and human ecology. Study design, physical assessment of nutritional status, growth and maturation, demographic surveys, systematic observation of behavior, energy expenditure, subsistence ecology, data analysis. Demonstrations and labs. Course fee required. Concurrently scheduled with course C226P. P/NP or letter grading.

Mr. Bailey, Ms. Peacock

**127P. Primate Evolution.** Prerequisite: upper division standing. Survey of primate paleontological and evolutionary record, encompassing prosimians, New and Old World monkeys, and hominoids. Attendant aspects of paleoecology and behavior.

**128A. Primate Behavior Nonhuman to Human.** Lecture, three hours. Prerequisite: upper division standing. Review of primate behavior as known from laboratory and field studies. Theoretical issues of animal behavior, with special reference to nonhuman primates. Discussion of human behavior as the product of such evolutionary processes. P/NP or letter grading.

Ms. Silk

**128B. Behavioral Ecology of Primates.** Lecture, three hours. Prerequisite: course 128A. Analysis of evolution of sociality, sexual strategies, parenting behavior, fighting and contests, and altruism and cooperation in primate species.

Ms. Silk (W)

**129P. Laboratory Methods in Biological Anthropology: Skeletal.** Lecture, three hours. Prerequisites: courses 10, 12, consent of instructor. Limited to majors and graduate students. Laboratory methodology and analysis of human variation on skeletal material.

Ms. Kennedy

**129Q. Paleopathology.** Lecture, one hour; laboratory, three hours. Prerequisites: course 129P, upper division standing, consent of instructor. Investigation into diseases, trauma, health status, subsistence activities, and ethnic mutilation (i.e., cranial deformation, trepanation) through analysis of human skeletal materials. Course has worldwide scope, with some emphasis on the New World.

Ms. Kennedy

## Cultural Anthropology

**130. Study of Culture.** Lecture, three hours. Prerequisite: one lower division sociocultural anthropology course or equivalent, upper division standing. The 20th-century elaboration and development of the concept of culture. Examination of five major paradigms: culture as a human capacity, as patterns and products of behavior, as systems of meaning and cognition, as generative structure and semiotic system, as a component in social action and reality construction. (Core course for cultural field.)

**130P. Study of the Individual in Society and Culture.** Lecture, three hours. Prerequisite: course 9 or consent of instructor. Examination of relationships between the individual and society and culture. Topics include extent to which individuals shape and are shaped by social and cultural systems, role of the individual in social and cultural change, assumptions about human nature and individual needs and goals in social theory, relationship between personality and role and between "private" and "public" symbols, individual variation within and between cultures, and deviance and abnormality.

Mr. Edgerton

**132. Technology and Environment.** Significance of material culture in archaeology and ethnology; problems of invention and the acceptance of innovations; ecological and sociological concomitants of technological systems; selected problems in material culture.

Ms. Bray, Mr. Earle

**133Q. Symbolic Systems.** Prerequisite: upper division standing or consent of instructor. Analysis of anthropological research and theory on cultural systems of thought, behavior, and communication expressed in a symbolic mode (as distinguished from discursive, instrumental, and causal modes). Methods for study of symbolic meaning, including the experiential approach.

**133R. Aesthetic Systems.** Lecture, three hours. Prerequisite: upper division standing. Provides framework for a cross-cultural understanding of aesthetic phenomena that meets the requirements of anthropological research. Human capacities for aesthetic experience; sociocultural formation of aesthetic production; ethno-aesthetics; experiential dimension of aesthetic production.

**135A-135B. Introduction to Psychological Anthropology.** Lecture, three hours. P/NP or letter grading:

**135A.** Historical Development. Prerequisite: course 9 or consent of instructor. Survey of the field of psychological anthropology, with emphasis on early foundations and historical development of the field. Topics include study of personality, pathology and deviance, altered states of consciousness, cognition, motivation, and emotion in different cultural settings.

Mr. Hollan

**135B.** Current Topics and Research. Prerequisite: upper division standing or consent of instructor. Survey of the field of psychological anthropology, with emphasis on current topics and research. Topics include study of personality, pathology and deviance, altered states of consciousness, cognition, motivation, and emotion in different cultural settings.

Mr. Hollan

**135C. Seminar: Psychocultural Studies.** Seminar, three hours. Prerequisites: course 9 or equivalent, consent of instructor. Firsthand exposure to current research in psychocultural studies. Various university scholars are brought in to discuss their on-going research. Using these presentations as models, students develop proposals for future research. P/NP or letter grading.

**135S. Anthropology of Deviance and Abnormality.** Lecture, three hours. Prerequisites: course 9 or equivalent, consent of instructor. Relationship between culture and recognition of, responses toward, and forms of deviant and abnormal behavior.

Mr. Edgerton

**135T. Psychoanalysis and Anthropology.** (Formerly numbered 167P.) Lecture, three hours. Exploration of mutual relations between anthropology and psychoanalysis, considering both theory and method. History of and current developments in psychoanalysis; anthropological critiques of psychoanalytic theory and method, toward a cross-cultural psychoanalytic approach.

Mr. Johnson

**M136Q. Laboratory for Naturalistic Observations: Developing Skills and Techniques.** (Same as Psychiatry M112.) Prerequisite: consent of instructor. Skill of observing and recording behavior in natural settings, with emphasis on field training and practice in observing behavior. Group and individual projects. Discussion of some of the uses of observations and their implications for research in social sciences.

Mr. Weisner (W)

**137. Ethnography on Film.** Intensive examination of filmed and written ethnographies of a wide range of the world's peoples, with purposes of (1) comparing visual with written data and evidences and (2) developing criteria for adequate written and film ethnography.

**138. Methods and Techniques of Ethnohistory.** Introduction to problems and procedures of extracting cultural data from documentary sources and their interpretation and analysis. Relevant documentary sources of various New World regions are selected as case histories to illustrate more concretely problems and challenges in this major area of anthropological concern.

**139. Field Methods in Cultural Anthropology.** Lecture, three hours. Prerequisite: upper division standing. Corequisite: course 139L. Introduction to skills and tools of data ascertainment through fieldwork in cultural anthropology. Emphasis on techniques, methods, and concepts of ethnographical research and how basic observational information is systematized for presentation, analysis, and cross-cultural comparison.



**139L. Field Methods in Cultural Anthropology.** Laboratory, three hours. Prerequisite: upper division standing. Corequisite: course 139. Supervised practicum of field methods in cultural anthropology. Field methods and techniques presented in course 139 practiced and applied in simulated field situations. Discussion of styles of presenting ethnographical information.

## Linguistic Anthropology

**M140. Language in Culture.** (Same as Linguistics M146.) Prerequisite: upper division standing or consent of instructor. Study of language as an aspect of culture; relation of habitual thought and behavior to language; and language and the classification of experience. Holistic approach to study of language, with emphasis on relationship of linguistic anthropology to fields of biological, cultural, and social anthropology, as well as archaeology. (Core course for linguistics field.) Mr. Kroskirty

**141. Ethnography of Everyday Speech.** Lecture, three hours. Prerequisites: course 33, upper division standing or consent of instructor. Course has two interrelated objectives: (1) to introduce students to ethnography of communication — description and analysis of situated communicative behavior — and the sociocultural knowledge which it reflects and (2) to train students to recognize, describe, and analyze relevant linguistic, proxemic, and kinesic aspects of face-to-face interaction. (Alternates yearly with courses 142A-142B and 143.)

Mr. Duranti, Mr. Kroskirty (Sp)

**142A-142B. Microethnography of Communication.** Lecture, three hours. Course 142A or Sociology CM124A or consent of instructor is prerequisite to 142B. Students make primary records (sound tape, videotape, or film) of naturally occurring social interactions which are analyzed in class for interactive tasks, resources, and accomplishments displayed. Laboratory and fieldwork outside of class and minimal fees to offset costs of equipment maintenance and insurance required. (Alternates yearly with courses 141 and 143.)

**143. Field Methods in Linguistic Anthropology.** Lecture, three hours. Prerequisite: Linguistics 20 or prior experience in linguistics. Practice in eliciting linguistic data from informants. Initial focus on phonetic transcription and phonological structures; introduction to skills and strategies pertinent to morphological, syntactic, and textual analysis. Practice with native speakers of non-Indo-European languages is normally an important aspect of student participation. P/NP or letter grading. (Alternates yearly with courses 141 and 142A-142B.)

Mr. Duranti, Mr. Kroskirty

**144. American Indian Ethnolinguistics and Sociolinguistics.** Prerequisite: prior coursework in either anthropology, linguistics, or American Indian studies. Introduction and comparative analysis of sociocultural aspects of language use in Native North American Indian speech communities. Specific foci include both micro- and macro-sociolinguistic topics. Micro-sociolinguistic topics are comprised of such issues as multilingualism, cultural differences regarding appropriate communicative behavior and variation within speech communities (e.g., male and female speech, baby talk, ceremonial speech, etc.). Macro-sociolinguistic considerations include language contact and its relationship to language change and language in American Indian education. Mr. Kroskirty

**145. Afro-American Sociolinguistics: Black English.** Lecture, three hours. Prerequisite: consent of instructor. Basic information on Black American English, an important minority dialect in the U.S. Social implications of minority dialects examined from perspectives of their genesis, maintenance, and social functions. General problems and issues in the fields of sociolinguistics examined through a case-study approach. Ms. Morgan

**146. Language and Culture of Polynesia: Past, Present, and Future.** Lecture, three hours. Introduction to Polynesian cultures and languages, with particular emphasis on past and present sociocultural systems, patterns of language structure and language use, verbal art, language socialization strategies, and forms of cultural assimilation and resistance to European contact. Fieldwork on contemporary Polynesian cultures in U.S. urban areas. Mr. Duranti

## Social Anthropology

**150. Study of Social Systems.** Lecture, three hours. Prerequisite: course 8 or 9 or Sociology 1 or consent of instructor. General principles of the organization of society; relation of these to technological complexity and ecological conditions of the culture; principles of evolutionary development of social systems. (Core course for social field.) Ms. Levine

**151. Marriage, Family, and Kinship.** Lecture, three hours. Prerequisite: course 9. Survey of marital patterns, descent, and family structure in a range of societies. Emphasis on relationship between kinship and other aspects of the sociocultural system and on importance of kinship for general anthropological research. Ms. Levine

**152. Traditional Political Systems.** Prerequisite: course 150 or consent of instructor. Political organization in preindustrial societies of varying degrees of complexity. Law and the maintenance of order; corporate groups; ideology. Relations of political institutions to other institutions of society.

**153. Evolution of Human Societies.** Lecture, three hours. Review of economic and ecological approaches to studying organization of production and exchange. Economic life viewed from three perspectives: adaptation, decision making, and social structure. Comparative theories discussed in context of ethnographic evidence from a wide variety of cultural systems. Mr. Earle, Mr. Johnson

**M154. Women in Culture and Society.** (Formerly numbered M163.) (Same as Women's Studies M154.) Lecture, three hours. Prerequisite: course 9. Systematic approach to study of sex roles from an anthropological perspective. Critical review of relevant theoretical issues supported by ethnographic material from traditional cultures and contemporary American culture. Ms. Sacks

**155. Women's Voices: Their Critique of Anthropology of Japan.** Lecture, three hours. Prerequisite: introductory sociocultural anthropology course. The anthropology of Japan has long viewed Japan as a homogeneous whole. Restoration of diversity and contradiction in it by listening to voices of Japanese women in various historical contexts. P/NP or letter grading. Ms. Tamaroi

**M155Q. Women and Social Movements.** (Formerly numbered M155.) (Same as Women's Studies M160.) Lecture/discussion, three hours. Recommended (but not prerequisite); prior women's studies or anthropology courses. Comparative studies of social movements (e.g., nationalist, socialist, liberal/reform), beginning with Russia and China and including Cuba, Algeria, Guinea-Bissau, Mozambique, Nicaragua, and Iran. Analysis of women's participation in social transformations and the centrality of gender interests. P/NP or letter grading. Ms. Hale

**156. Comparative Religion.** Survey of various methodologies in comparative study of religious ideologies and action systems, including understanding particular religions through descriptive and structural approaches, and identification of social and psychological factors which may account for variation in religious systems cross-culturally.

**158. Hunting and Gathering Societies.** Lecture, three hours. Prerequisite: course 9. Survey of hunting and gathering societies. Examination of their distinctive features from both an ecological and cultural viewpoint. Discussion of the possibility of developing a general framework for synthesizing these two viewpoints. Use of this synthesis as a basis for illustrating the relevance of hunting and gathering societies as an understanding of complex societies. Mr. Read

**158P. Pastoral Nomads.** Lecture, three hours. Prerequisite: course 9 or 150 or consent of instructor. Survey of pastoral nomad societies. Consideration of environmental and social demands of livestock domestication and production. Focus on ecological features, cultural practices, and social organization, with special attention to historical interactions between pastoral nomads and settled peoples. Ms. Simons

## Applied Anthropology

**161. Development Anthropology.** Lecture, three hours. Prerequisites: course 9 and upper division standing, or consent of instructor. Comparative study of planned and unplanned development, in particular as it affects rural societies. Emphasis on impact of capital, technological change and gender differences, economic differentiation and class, urban/rural relations, and migration. Discussion of theoretical issues in light of case studies. Ms. Bray

**162. Contemporary American Indian Problems.** Contemporary problems of the American Indian both on and off the reservation. Topics include self-determination, land claims, activism, urban Indians, and role of the Bureau of Indian Affairs.

**M162P. Destruction and Survival of Indigenous Societies.** (Formerly numbered 162P.) (Same as World Arts and Cultures M162P.) Lecture, three hours. Prerequisite: course 9 or upper division standing or consent of instructor. Clarification of concepts and forms of destruction and survival; analysis directed to different processes threatening the institutions of a group and its survival. Exploration of current theories of ethnocide and genocide for their relevance and validity. P/NP or letter grading. Ms. Bray

**M164. The Afro-American Experience in the U.S.** (Same as Afro-American Studies M164.) Promotes understanding of contemporary sociocultural forms among Afro-Americans in the U.S. by presenting a comparative and diachronic perspective on the Afro-American experience in the New World. Emphasis on utilization of anthropological concepts and methods in understanding the origins and maintenance of particular patterns of adaptation among black Americans. Ms. Morgan

**165. Demographic Problems in Nonindustrial Societies.** Lecture, three hours. Prerequisite: course 9. Dynamic interaction between environment, cultural belief, social structure, and population in hunting and gathering, pastoral, horticultural, and agricultural societies. Principal theories of population change and current issues in population policy considered in light of the anthropological evidence. Ms. Levine

**M166. Economic Development and Culture Change.** (Formerly numbered M197A.) (Same as Development Studies M100A.) Seminar, three hours. Prerequisites: course 9 or consent of instructor, some beginning experience in social sciences at college level. Seminar for undergraduates designed to examine concepts and issues arising from economic, social, and political change in the Third World. Mr. Hammond

**167. Urban Anthropology.** Open to upper division majors in social sciences, and others with consent of instructor. Survey of urbanization throughout the world, with emphasis on urban adaptation of rural migrants. Special focus on problems of rural/urban migration of ethnic minority groups and subsequent adaptation of them within the U.S. explored in terms of methods and perspectives of anthropology.

**M168. Health in Culture and Society.** (Same as Nursing M158.) Prerequisite: upper division standing. Examination of theories and methods of medical anthropology in relation to cross-cultural health systems, role networks, attitude and belief systems of the participants. Emphasis on interaction networks in health care systems.

## Regional Cultures

### Africa

**171. Civilization of Sub-Saharan Africa.** Lecture, three hours. Prerequisite: upper division standing or consent of instructor. Comprehensive overview of the sociocultural world of sub-Saharan Africa, interpreted as a broad cultural unit with its specific African configurations and as a plurality of civilizations, each based on a particular association of an environment (dry savanna, grassland, equatorial forest, highlands) with a dominant technique of acquisition/production (hunting/gathering, cereals growing, cattle herding, commercial crops, industry). Mr. Hammond

### North America

**172R. Cultures of the Pueblo Southwest.** Lecture, three hours. Prerequisite: course 8 or 9 or upper division standing or consent of instructor. Survey of ethnographic and ethnohistorical research of Pueblo Indians (Hopi, Zuni, Tanoan, and Keresan) and their immediate neighbors. Basic information on history, languages, social organization, and traditional cultural systems of these groups. Mr. Kroskirty

**M172T. Ethnohistory of Hispanic Cultures in the U.S. Southwest.** (Same as Chicana and Chicano Studies M172T.) Lecture, three hours. Prerequisite: course 9 or consent of instructor. Ethnography of social and cultural adaptations of Hispanic peoples in the U.S. Southwest: their respective social organization, economic and political institutions, sacred and secular belief systems, and expressive cultures. P/NP (undergraduates), S/U (graduates), or letter grading.

### Middle America

**173Q. Latin American Communities.** Overview of social and cultural anthropology of small communities in Latin America. Similarities and contrasts in social organization and interpersonal relations described in context of economic, political, and cultural environments. Mr. Johnson

### South America

**174P. Ethnography of South American Indians.** Introduction to ethnography of South American Indians, with special emphasis on Lowland South America. Survey of history and development of man and society in this world area and examination of exemplary cultures symptomatic of various levels of cultural achievement.

**174Q. Ethnology of South American Indians.** Prerequisite: course 174P or consent of instructor. Introduction to ethnology of South American Indians, with special emphasis on Lowland South America. Methods and theories applied to study of man and culture on the subcontinent, including biological anthropology, linguistics, and sociocultural anthropology.

### Asia

**175P. Civilizations and Cultures of Southeast Asia.** Introduction to understanding and appreciation of the peoples, cultures, and societies of the Philippines, Indonesia, Malaysia, Thailand, Burma, Laos, Cambodia, and Vietnam seen against their historical and ecological backgrounds. Use of slides and other media along with texts, lectures, and discussion.

**175Q. Civilizations of South Asia.** Examination of civilizations of Sri Lanka, India, Pakistan, Bangladesh, and the Himalayan states. Ideational systems, social institutions, and techniques of production discussed in the framework of a few contemporary civilizations, each focused on a major religious tradition (Hinduism, Buddhism, and Islam). Ms. Levine

**175R. Civilizations of Inner Asia.** Overview of culture and society among the diverse peoples of Inner Asia, including Mongolia, Tibet, and Soviet Central Asia. Topics include environment and economic adaptation, politics in traditional isolation and within the framework of recent national integration, kinship, forms of marriage and status of women, religion and the social order in Hindu/Buddhist culture contact zone, and current problems of modernization. Ms. Levine

**175S. Japan.** Lecture, three hours. Prerequisite: course 9. Overview of contemporary Japanese society. General introduction, kinship, marriage and family life, social mobility and education, norms and values, religions, patterns of interpersonal relations, social deviance. P/NP or letter grading.

Ms. Tamanoi

**175T. Civilizations of East Asia.** Lecture, three hours. General anthropological introduction to the closely linked civilizations of China, Korea, and Japan, providing a comparative analysis of fundamental institutions such as family, state, and religion and assessing effects of urbanization and industrialization. Ms. Bray

**175U. Cultures of the Indonesian Archipelago.** Lecture, three hours. Prerequisite: course 9 or consent of instructor. Introduction to past and contemporary civilizations and cultures of Indonesia, including Javanese, Balinese, Toraja, Dayak, and Minangkabau. Geographical, ecological, and historical overview with examination of such topics as religious and political ideas and institutions, art, symbolism and ritual, illness and healing, and psychological issues and themes.

**175V. Ethnology of Korea: Re-Presenting Lives in Contemporary South Korea.** Lecture, three hours. Examination of South Korea's contemporary structural positioning, with focus on its dynamic development out of a history of colonialism and war to capitalism; multiple and conflicting linkages of Korean people involving class, gender, family/kinship, and nation. Ms. Park

### Middle East

**176. Middle Eastern Cultures and Societies.** Lecture, three hours. Overview of cultures and societies in the Middle East. Examination of wide range of issues within context of diversity of peoples, languages, and religions that comprise the Middle East. Critical exploration of various evolving trends and schools of thought within anthropology (functionalist, cultural ecology, symbolic systems, etc.) and relation to ways in which researchers have approached and conceptualized cultures and peoples in the Middle East.

### Pacific

**177. Cultures of the Pacific.** Four major culture areas of Australia, Melanesia, Polynesia, and Micronesia. General geographical features, prehistory, and language distribution of the whole region. Distinctive sociocultural features of each culture area presented in context of their adaptive significance.

## History, Theory, and Method

**182. History of Anthropology.** Brief survey of development of Western social science, particularly anthropology, from Greek and Roman thought to emergence of evolutionary theory and concept of culture in the late 19th century. "Root paradigm" of Western social science and its influence on such notables as Durkheim, Freud, Hall, Lombroso, Marx, Piaget, Terman, and others. Consideration of how this influences ethnocentrism and Eurocentrism, sexism, racism, perception of deviance, and our view of culture in general.

**183. History of Archaeology.** Prerequisite: at least one upper division archaeology course or consent of instructor. Development of world archaeology from the Renaissance to the present, stressing how each of the major branches of archaeology has evolved a special character determined by peculiarities of its own data, methods, and intellectual affiliation. Mr. Sackett

**184. History of Human Evolutionary Theory.** The men, events, and spirit of the time which mark man's attempts to understand his origins and diversity.

**186A. Quantitative Methods in Anthropology.** Lecture, three hours; discussion, one hour. Prerequisite: course 80 or equivalent. Methods of quantitative data analysis. Topics to be selected from linear regression analysis (univariate and multivariate), principal component analysis, discriminant analysis, cluster analysis, nonparametric tests, and log-linear models. Emphasis on computer-based applications of data analysis techniques. Mr. Read

**186B. Models and Modeling in Anthropology.** Prerequisite: upper division standing. Recommended: course 186A or consent of instructor. Modeling from both individual and social structure viewpoints. Introduction to four groups of models, along with ethnographic examples — decision tree models, indifference curve and marginal cost models, adaptation and learning models, and information diffusion models. Mr. Read

**186P. Models of Cultural Evolution.** Lecture, two hours; discussion, one hour. Prerequisite: course 9 or 10 or equivalent. Introduction to Darwinian models of cultural evolution. How organic evolution has shaped the capacity for culture. How processes of cultural transmission and modification explain cultural variation in space and time. P/NP or letter grading. Mr. Boyd

**M189A-M189B. Theoretical Behavioral Ecology.** (Same as Biology M189A-M189B.) Lecture, three hours. Prerequisites: one upper division introduction to behavioral ecology course, one university-level mathematics course (preferably calculus or probability and statistics). Course M189A or consent of instructor is prerequisite to M189B. Students expected to do simple algebra, elementary calculus, and probability. A rich body of mathematical theory describing the evolution of animal behavior exists. Introduction to this body of theory at a pace and mathematical level that allows students to grasp this information. Within each area of theory (e.g., kin selection, optimal foraging theory, etc.), presentation of basic corpus of models so that students understand assumptions that underlie the models, and how main results are derived. Presentations supplemented by a survey of results printed in the literature, especially those derived using more advanced methods. Mr. Boyd

## Special Studies

**C191. Writing for Anthropology.** (Formerly numbered 191.) Lecture, three hours. Prerequisite: course 9. Teaching of writing skills in various academic forms, including term papers, essay examinations, journal articles, and reports. Class projects require student writing and evaluation of professional writing. Emphasis on organization and presentation of a scholarly argument. Concurrently scheduled with course C291. Mr. Earle, Ms. Levine

**197H. Departmental Honors Seminar.** Seminar, three hours. Prerequisites: junior standing, consent of instructor. Five discussion segments dealing with major debates, questions, and issues in each departmental field (archaeological, biological, linguistic, and sociocultural). Discussion each week in seminar format of readings on a major topic.

**197K-197Z. Selected Topics in Anthropology (2 to 4 units each).** Lecture or seminar, three hours. Study of selected topics of anthropological interest taught by resident and visiting faculty members. Consult *Schedule of Classes* for topics and instructors. May be repeated for credit with consent of instructor. P/NP or letter grading.

**199. Special Studies in Anthropology (2 to 8 units).** Prerequisite: consent of instructor. Eight units may be applied toward upper division anthropology courses required for the major.

**199HA. Directed Studies for Honors.** Discussion, three hours. Prerequisite: anthropology honors program standing. Discussion meetings with adviser to help define research and preparation for the project. Extensive reading and research in the field of proposed honors thesis. Project often involves summer fieldwork. In Progress grading (credit to be given only on completion of course 199HC). (Sp)

**199HB. Directed Studies for Honors.** Prerequisites: course 199HA, anthropology honors program standing. Must be taken in Fall Quarter of senior year. Continued reading and research directed toward analysis and presentation of data in a draft of honors thesis (no more than 30 pages). In Progress grading (credit to be given only on completion of course 199HC). (F)

**199HC. Directed Studies for Honors.** Prerequisites: courses 199HA, 199HB, anthropology honors program standing. Preparation of final version of honors thesis (no more than 30 pages) that argues a central thesis of anthropological relevance. Must be submitted by last day of class in Winter Quarter of senior year. (W)

## Graduate Courses

Admission to all graduate courses is subject to consent of instructor and completion of appropriate course requirements (when so indicated). Graduate courses are normally non-repetitive in content but may be repeated for credit with consent of instructor and graduate counselor.

**200A-200B. Proseminars: Practice of Anthropology.** Seminar, three hours. Required of new graduate students. Discussion of anthropology as a four-field discipline and interconnections among the four major fields. Practice of anthropology as exemplified through faculty presentations of how research is conceived, formulated, and executed. Students develop individual research proposals. In Progress and S/U grading. (F,W)

**M201A-M201B. Graduate Core Seminars: Archaeology (6 units each).** (Same as Archaeology M201A-M201B.) Seminar, three hours. Required of anthropology students in archaeology field. Seminar discussions based on carefully selected list of 30 to 40 major archaeology works. These core seminars provide students with foundation in breadth of knowledge required of a professional archaeologist. Archaeological historiography, survey of world archaeology, and archaeological techniques. Emphasis on appreciation of the multidisciplinary background of modern archaeology and relevant interpretative strategies. May be repeated for credit with consent of adviser.

**202. Biological Anthropology Colloquium.** Seminar, three hours. Selected topics on status of current research in biological anthropology. May be repeated for credit. S/U or letter grading.

**203. Core Seminar: Sociocultural Anthropology.** Seminar, three hours. Prerequisites: two courses from 130, 135A, 150, or equivalent, or consent of instructor. Essential concepts, theories, and methodologies of sociocultural anthropology. Reading of and critical discussion on a body of significant literature.

**204. Core Seminar: Linguistic Anthropology.** Seminar, three hours. Prerequisite: consent of instructor. Theoretical and methodological foundations of study of language structure and language use from a sociocultural perspective. Discussion of linguistic, philosophical, psychological, and anthropological contributions to understanding of verbal communication as a social activity embedded in culture.

Mr. Duranti, Mr. Kroskirty

## Archaeology

**210. Analytical Methods in Archaeological Studies.** Prerequisites: one term of statistics, consent of instructor. Data analysis procedures in archaeology. Emphasis on conceptual framework for analysis of archaeological data, beginning at level of the attribute and ending at level of the region. Mr. Read

**211. Regional Analysis in Archaeology.** Prerequisite: consent of instructor. Course 210 is not prerequisite to 211. Survey of analytical methods used in archaeology to study prehistoric settlement systems. Specific issues include settlement distribution with respect to natural resources, settlement hierarchy, and patterns of exchange. Mr. Earle

**212P. Selected Topics in Hunter/Gatherer Archaeology.** Prerequisite: consent of instructor. Regional studies in development of early human culture. May be repeated for credit. Ms. Arnold

**212Q. Problems in Southwestern Archaeology.** Prerequisite: consent of instructor. Consideration of prehistoric cultural systems in the American Southwest, with emphasis on description and explanation of organizational variability and change. Specific research questions vary with each course offering. May be repeated for credit. Mr. Hill

**212R. Problems in Oceanic Archaeology.** Lecture, three hours. Prerequisite: consent of instructor. Prehistory of Oceania. Content may vary, but problems considered include history and process of island occupation, island adaptation, and evolution of social stratification. May be repeated for credit. Mr. Earle

**M212S. Special Topics in Archaeology (6 units).** (Same as Archaeology M205.) Lecture, three hours. Prerequisite: graduate standing in archaeology or in other departments. Open to undergraduates with consent of instructor. Special advanced topics in archaeology such as new strategies, methodologies, excavation projects, regional synthesis, or comparisons on a worldwide basis, including current work by core faculty of the program and special visitors.

**213. Selected Topics in Old World Archaeology.** Seminar, three hours. Prerequisite: consent of instructor. May be repeated for credit. Mr. Sackett

**214. Selected Topics in Prehistoric Civilizations of the New World.** Prerequisite: consent of instructor. Mesoamerican and Andean civilizations normally constitute major focus of seminar. May be repeated for credit. Mr. Donnan

**215. Field Training in Archaeology (4 to 8 units).** Prerequisite: prior experience in archaeology. Advanced training in archaeological excavation techniques, including organization of projects, supervision of field crews, methodology of field recording, and preliminary analysis of field data. May be repeated for credit.

**M216. Dating Techniques in Environmental Sciences and Archaeology.** (Same as Geography M278.) Lecture, three hours. Prerequisite: consent of instructor. Colloquium devoted to topics in dating techniques in environmental sciences, archaeology, and biological anthropology, as well as laboratory instruction and experimental work. May be repeated for credit. Mr. Berger

**217. Explanation of Societal Change.** Prerequisite: consent of instructor. Examination of processes of societal evolution, emphasizing usefulness of a variety of explanatory models from general systems theory, ecology, anthropology, and other sources. Specific research questions vary with each course offering. May be repeated for credit. Mr. Hill

**218. Style and Ethnicity.** Seminar, three hours. Prerequisite: consent of instructor. How stylistic variation in material culture informs on and mediates the shape, boundaries, and interrelations of ethnic groups. Aimed primarily toward archaeologists and ethnographers, seminar also welcomes students specifically interested in either material culture or style as such. Mr. Sackett

**219. Complex Hunters/Gatherers in Theoretical Perspective.** Seminar, three hours. Prerequisite: consent of instructor. Examination of economic, political, and social foundations of complex hunter/gatherer societies, with focus on theory of emergence of complex cultural organization and recognition of complex middle-range societies in the archaeological record. Role of craft specialization in cultural evolution. S/U or letter grading. Ms. Arnold

## Biological Anthropology

**220. Current Problems in Biological Anthropology.** Seminar, three hours. Prerequisite: consent of instructor. Detailed examination of current research in biological anthropology (specific topics to be announced). Emphasis on nature of hypotheses and their testing in ongoing student and faculty research. May be repeated for credit.

**221A-221B. Fossil Evidence for Human Evolution.** Prerequisite: consent of instructor. Examination and analysis of fossil evidence for man's evolution. Ms. Kennedy

**222P. Population Genetics of Man.** Lecture, three hours. Prerequisite: consent of instructor. Introductory course in statistics. Study of population concepts, probability, conditions of gene frequency equilibria, and factors causing gene frequency change.

**222Q. Probability Models and Statistical Methods in Genetics.** Lecture, three hours. Prerequisites: course 222P, Mathematics 3A, two terms of statistics, graduate standing. Introduction to probability models and statistical methods in genetics. Maximum likelihood methods for estimated genetic parameters introduced and discussed in detail. Mr. Read (W)

**223P. Biology and Ecology of Foraging Peoples.** Prerequisite: consent of instructor. Detailed discussions of topical issues in study of foraging societies, including perspectives of cultural ecology and ethnoarchaeology. Primary emphasis on theoretical and practical topics in human ecology and biology, including health and nutrition, growth and development, life history variables, foraging, and sex differences. Mr. Bailey

**C226P. Introduction to Field Methods in Human Ecology.** Lecture, three hours. Prerequisite: upper division or graduate standing. Survey of methods used in anthropological investigations emphasizing human biology and human ecology. Study design, physical assessment of nutritional status, growth and maturation, demographic surveys, systematic observation of behavior, energy expenditure, subsistence ecology, data analysis. Demonstrations and labs. Course fee required. Concurrently scheduled with course C126P. Mr. Bailey, Ms. Peacock

**228. Primate Paleobiology.** Lecture, 90 minutes; laboratory, 90 minutes. Prerequisite: course 121A or 127P or consent of instructor. Examination of how the biology of fossil primates can be reconstructed by comparative methods in primate anatomy. Emphasis on structure and function of modern primates and on quantitative methods for inferring diet, locomotion, body size, demography, and habitat of extinct primates. S/U or letter grading.

**228P. Ecology of Human Reproduction.** Seminar, three hours. Prerequisite: consent of instructor. Critical examination of current research concerning responsiveness of the human reproductive system to a variety of biobehavioral and ecological influences, including stress, exercise, nutrition, and disease. Influence of reproductive hormones on human behavior. Evolutionary and cross-cultural perspectives. S/U or letter grading. Ms. Peacock

**M229A. Seminar: Human Behavioral Ecology.** (Same as Education M281A and Psychiatry M279A.) Lecture, one hour; discussion, three hours. Prerequisite: consent of instructor. Examination of predictive models from animal behavioral ecology used to study human diet and subsistence; settlement patterns and territoriality; sharing and helping; reproduction and mortality. Comparison with other economic and ecological approaches in anthropology. Mr. Blurton Jones

**M229B. Seminar: Reproduction, Families, and Parenting.** (Same as Education M281B and Psychiatry M279B.) Prerequisite: consent of instructor. Guided forum for graduate students to discuss and broaden their studies of human reproduction and child rearing from varied viewpoints. Representation and debate of theories, questions, and methods from social and biological sciences. Mr. Blurton Jones

**M229C. Seminar: Selected Topics in Human Ethnology.** (Same as Education M281C and Psychiatry M279C.) Lecture, one hour; discussion, three hours. Prerequisite: consent of instructor. Consideration of appropriateness and contributions of using animal behavior methodology in study of human behavior. Analysis: describing and recording behavior; causation; development, especially longitudinal studies; adaptation; evolutionary origins.

Mr. Blurton Jones

## Cultural Anthropology

**230P. Ethnology.** Prerequisite: consent of instructor. Seminar on ethnological method and theory concentrating on ideational systems. May be repeated for credit.

**230Q. Cultural Anthropology.** Prerequisite: consent of instructor. Special problems in cultural anthropology. May be repeated for credit.

**231. Asian Americans: Personality and Identity.** Prerequisite: graduate standing. Effect of class, caste, and race on the Asian American personality within the framework of anthropological theories.

**232Q. Myth and Ritual.** Prerequisite: consent of instructor. Nature and function of myth and ritual in nonindustrialized societies. Associated value systems and philosophies examined as infrastructure of culture rather than as phenomena proposed by structuralist rationalism and cultural material empiricism. May be repeated for credit.

**M232R. South American Folklore and Mythology Studies.** (Same as Folklore M257.) Prerequisite: course 174P or consent of instructor. Examination of oral traditions and related ethnological data from various South American Indian societies against the background of the religious systems of these people.

**M232S. Ethnography of Humor.** (Same as Folklore M214.) Lecture, three hours. Prerequisite: graduate standing in folklore and mythology or anthropology. Examination and analysis of selected humorous expressions and events in cross-cultural perspective, with emphasis on major psychological and sociocultural approaches to their study and interpretation.

**232T. Person, Self, and Identity in Contemporary Anthropology.** Seminar, three hours. Prerequisite: graduate standing or consent of instructor. Survey of anthropological literature on person, self, and identity. Conceptual and theoretical relationships among these terms and their use in contemporary ethnography. S/U or letter grading. Mr. Hollan

**232V. Current Issues in Ethnography.** Seminar, three hours. Prerequisite: graduate standing or consent of instructor. S/U or letter grading.

**233P. Symbolic Anthropology.** Prerequisite: course 133R or consent of instructor. Nature of symbolic relations (as distinguished from other referential ones), significance of symbolic systems (in terms of action, cognition, affectivity, contemplation), symbolic and isomorphic logic (as opposed to the causal one) are among questions to be selected for analysis and discussion. May be repeated for credit. S/U or letter grading.

**233Q. Aesthetic Anthropology.** Prerequisite: course 133R or consent of instructor. Selected questions concerning visual aesthetic phenomena in their relationships with the sociocultural context examined in depth. May be repeated for credit.

**M234. Seminar: Psychocultural Studies.** (Same as Psychiatry M210.) Seminar, three hours. Devoted to present state of research in psychocultural studies. Survey of work in child development and socialization, personality, psychobiology, transcultural psychiatry, deviance, learning, perception, cognition, and psychocultural perspectives on change.

Mr. Edgerton

**M234P. Transcultural Psychiatry.** (Same as Psychiatry M222.) Lecture, three hours. Prerequisite: consent of instructor. Consideration of psychiatric topics in cross-cultural perspective, such as studies of drug use, deviance, suicide, homicide, behavioral disorders, "culture specific" syndromes, non-Western psychiatries, and questions of "sick" societies. May be repeated for credit.

**M234Q. Psychological Anthropology.** (Same as Psychiatry M272.) Lecture, three hours. Prerequisite: consent of instructor. Various psychological issues in anthropology, both theoretical and methodological. Areas of interest include such things as culture and theory, culture and personality, and culture psychiatry. Discussion of questions relating to symbolic and unconsciousness process as they relate to culture. Topics vary from term to term. May be repeated for credit.

Mr. Edgerton

**M234R. Sociocultural Perspectives on Mental Retardation.** (Same as Psychiatry M211.) Lecture, three hours. Prerequisite: consent of instructor. Exploration of concepts such as "intelligence," "competence," and "adaptive behavior" in varying non-Western societies as background to study of the phenomenon of mental retardation in the West, particularly the U.S. Topics include cross-cultural perspectives, history of institutional confinement, policies of deinstitutionalization and normalization, and current issues involving adaptation and "quality of life." Discussion of topics such as communicative competence, work, crime, deviance, sexuality, and marriage. May be repeated for credit.

Mr. Edgerton

**M234T. Anthropology of Human Body.** (Same as Psychiatry M282.) Seminar, three hours. Exploration of how sociocultural and political dynamics shape perceptions of and understandings about the human body, and how, reciprocally, those perceptions and understandings influence social processes. Includes materials from both non-Western and Western societies.

Ms. Browner

**M235A-M235B. The Individual in Culture.** (Same as Psychiatry M213A-M213B.) Lecture, three hours. Course M235A is prerequisite to M235B. In Progress grading.

**M235S. Culture, Adaptation, and Intervention.** (Same as Psychiatry M215.) Prerequisite: consent of instructors. Role of ecological, social, and cultural influences on family adaptation, child competence, and interventions, including theory, empirical research, and applied/policy topics. Review and critique of current research in this field.

Mr. Gallimore, Mr. Weisner

**M236P. Cross-Cultural Studies of Socialization and Children.** (Same as Psychiatry M214.) Seminar, three hours. Selected topics in cross-cultural study of socialization and child training. Methods, ethnographic data, and theoretical orientations. Emphasis on current research.

Mr. Weisner

**M236Q. Laboratory for Naturalistic Observations: Developing Skills and Techniques.** (Same as Education M222A, Psychiatry M235, and Psychology M295.) Skill of observing and recording behavior in natural settings, with emphasis on field training and practice in observing behavior. Discussion of some uses of observations and their implications for research in social sciences. Students expected to integrate observational work into their current research interests.

Mr. Levine, Mr. Weisner (W)

**M237A-M237B. Basic Core Courses: Mental Retardation Research (2 units each).** (Same as Psychiatry M219A-M219B.) Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. Required of all MRRC trainees. Systematic overview of mental retardation and sciences basic to this field of study. Language, methods, aims, and contributions of various disciplines that contribute to the field. Last two weeks of second term are spent discussing and preparing multidisciplinary research designs with potential for prevention or amelioration of mental retardation. S/U grading. Mr. Buchwald, Mr. Edgerton

**239P. Selected Topics in Field Ethnography (4 to 8 units).** Seminar, three hours. Prerequisite: consent of instructor. Discussion and practicum in various techniques for collecting and analyzing ethnographic field data. S/U or letter grading.

## Linguistic Anthropology

**M241. Topics in Linguistic Anthropology.** (Same as Linguistics M246C.) Prerequisite: consent of instructor. Problems in relations of language, culture, and society. May be repeated for credit.

**242. Ethnography of Communication.** Prerequisite: graduate standing or consent of instructor. Seminar devoted to examining representative scholarship from fields of sociolinguistics and ethnography of communication. Particular attention to theoretical developments including relationship of ethnography of communication to such disciplines as anthropology, linguistics, and sociology. Topical foci include style and strategy, speech variation, varieties of noncasual speech genres, languages and ethnicity, and non-verbal communication behavior.

Mr. Duranti, Mr. Kroskirty

**243P. American Indian Ethnolinguistics and Sociolinguistics.** Prerequisites: prior coursework in either anthropology, linguistics, or American Indian studies, consent of instructor. Social and cultural aspects of language use in Native North American speech communities. Specific foci include both micro-sociolinguistic topics (such as multilingualism, cultural differences regarding appropriate communicative behavior, and variation within speech communities) and macro-sociolinguistic topics (such as language contact, language change, and language in American Indian education). Graduate students conduct library and/or other research and participate in group discussion.

Mr. Kroskirty

**M243Q. Afro-American Sociolinguistics: Black English.** (Same as Afro-American Studies M200D.) Lecture, three hours. Prerequisite: consent of instructor. Basic information on Black American English, an important minority dialect in the U.S. Social implications of minority dialects examined from perspectives of their genesis, maintenance, and social functions. General problems and issues in fields of sociolinguistics examined through a case study approach. Students required to conduct research in consultation with instructor and participate in group discussion.

Ms. Morgan

**244. Field Methods in Linguistic Anthropology.** Seminar, three hours; work with informant, one hour. Prerequisite: Linguistics 20 or prior experience in linguistic analysis. Practice in eliciting and transcribing linguistic data from native informants. Initial focus on phonetic transcription and phonological structures; introduction to skills and strategies pertinent to morphological, syntactic, and pragmatic analysis. Practice with native speakers of non-Indo-European languages is important aspect of student participation. S/U or letter grading.

Mr. Duranti, Mr. Kroskirty

**245. Linguistic and Intra-cultural Variation.** Prerequisite: consent of instructor. Problem of variation as it impinges on disciplines of anthropology and linguistics. Among objectives of course are the following: to acknowledge importance of speech variation in anthropological linguistics research, to critically assess a broad and representative sample of modern scholarship devoted to study of intra-individual and inter-individual variation, and to evaluate utility and potential applicability of recent linguistic models to anthropological linguistics and anthropological theory.

Mr. Kroskirty

**246. Research Design and Field Training in Linguistic Anthropology.** Prerequisite: consent of instructor. Supervised collection of linguistic information in the field. Students spend full time in the field for most of term. May be repeated for credit. S/U or letter grading.

Mr. Duranti, Mr. Kroskirty

**247. Analysis of Linguistic Field Data.** Seminar, three hours. Prerequisite: course 202 or 242 or 246 or consent of instructor. Supervised analysis of linguistic field data by students who have participated in a related field training course. Students work with their own as well as general project data in preparation of articles for professional journals. May be repeated for credit. S/U or letter grading.

Mr. Duranti, Mr. Kroskirty

**248. Practicum in a Field Language (4 to 8 units).** Prerequisite: consent of instructor. Intensive training in an indigenous language as preparation for work in the field.

Mr. Duranti, Mr. Kroskirty

**249. Social Interaction.** Prerequisite: consent of instructor. Emphasis on issues for ethnographic theory and practice raised by developments in anthropological, sociological, psychological, linguistic, and ethnological contributions to our understanding of organization of face-to-face behavior. May be repeated for credit.

## Social Anthropology

**250. Selected Topics in Social Anthropology.** Seminar, three hours. Prerequisite: consent of instructor. Intensive examination of current theoretical views and literature. S/U or letter grading.

Ms. Levine

**251P. Cultural Ecology.** Prerequisite: consent of instructor. May be repeated for credit.

Mr. Earle

**252P. Comparative Systems of Social Inequality.** Seminar, three hours. Examination in historical and contemporary perspective of particular systems of structured social inequality based on rank, class, caste, ethnicity, gender, age, sexual preference, disability, etc., to develop a unified theory of social inequality. Examples from Asian, Pacific, European, African, and American cultures. S/U or letter grading.

Mr. Hammond

**253. Economic Anthropology.** Prerequisite: consent of instructor. May be repeated for credit.

**253P. Technology and Economy.** Seminar, three hours. Prerequisite: consent of instructor. Analysis of technological systems and patterns of technical evolution in context of corresponding social and economic change (e.g., in labor organization, kinship, property rights), using examples mainly from Asian peasant societies, past and present. S/U or letter grading.

Ms. Bray

**254. Kinship.** Prerequisite: consent of instructor. May be repeated for credit.

Ms. Levine

**255. Comparative Political Institutions.** Prerequisite: consent of instructor. May be repeated for credit.

**256. Anthropology of Conflict.** Lecture, three hours. Prerequisite: course 9 or 150 or consent of instructor. Examination of events and institutions associated with large-scale or ongoing conflict in a variety of settings. Particular consideration to roots of violence, violent manifestations and cross-cultural misunderstandings, and nature and content of armed confrontation.

Ms. Simons

## Applied Anthropology

**260. Urban Anthropology.** Prerequisite: course 167 or consent of instructor. Intensive anthropological examination of the urban setting as a human environment. S/U or letter grading.

**261Q. Issues in Applied Anthropology.** Seminar, three hours. Use of seminar format to explore selected domestic and international problems from applied anthropological perspective. Consideration of history of applied anthropology, ethics, and careers strategies.

Mr. Hammond

**M262P. Culture and Human Reproduction.** (Same as Community Health Sciences M240.) Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. Exploration of human behavior related to reproduction. Cross-cultural exploration of biological and behavioral factors, with particular reference to human adaptation.

Ms. Scrimshaw

**263P. Gender Systems.** Discussion, three hours. Prerequisite: graduate standing or consent of instructor. Current theoretical developments in understanding gender systems cross-culturally, with emphasis on relationship between systems of gender, economy, ideological systems, and social inequality. Selection of ethnographic cases from recent literature. S/U or letter grading.

Ms. Levine, Ms. Sacks

**M263Q. Advanced Seminar: Medical Anthropology.** (Same as Community Health Sciences M244, Nursing M273, and Psychiatry M273.) Seminar, three hours. Prerequisite: consent of instructor. Limited to 15 students. Examination of interrelationships between society, culture, ecology, health, and illness. Bases for written critical analysis and class discussion provided through key theoretical works.

Ms. Browner, Ms. Scrimshaw (Sp)

**263R. Medicine in Chinese Culture.** Seminar, three hours. Prerequisite: consent of instructor. Use of the rich historical material and anthropological studies of Chinese medicine to analyze social and symbolic complementarity of different therapeutic systems and current attempts at syncretization with Western biomedicine. S/U or letter grading.

Ms. Bray

**265. Public Archaeology.** Prerequisite: consent of instructor. Archaeology as part of the national heritage, both in the U.S. and other countries. Legal, ethical, cultural, and scholarly aspects of salvage and contact archaeology. Designed for researchers and managers of cultural resources.

**M266. Medical Anthropology in Public Health.** (Same as Community Health Sciences M232, Nursing M250, and Psychiatry M250.) Seminar, three hours. Cross-cultural aspects of human behavior as they relate to perception, treatment, incidence, and prevalence of disease and illness.

Ms. Browner, Ms. Scrimshaw

**M267B-M267C. Ethnographic Film Direction (4 or 8 units each).** (Same as Film and Television M265A-M265B.) Lecture, four hours; laboratory, to be arranged. Prerequisites: course M288, graduate standing, consent of instructor. Further consideration of methods and criteria for use of film as a medium for preservation and communication of human cultures. Production of films and videotapes on topics selected by students.

Mr. Boehm, Mr. Hawkins (W, M267B; Sp, M267C)

**M269. Contemporary Issues of the American Indian.** (Same as American Indian Studies M200C and Sociology M275.) Introduction to most important issues facing American Indians as individuals, communities, tribes, and organizations in the contemporary world, building on historical background presented in American Indian Studies M200A and cultural and expressive experience of American Indians presented in American Indian Studies M200B.

Mr. Champagne

**M269P. Seminar: Reproduction and Women's Health.** (Same as Community Health Sciences M241, Nursing M280, and Psychiatry M280.) Seminar, three hours. Analysis, using a cross-cultural approach, of sociocultural and political economic factors that affect reproduction and women's health. Topics include relationships between women's domestic and extra-domestic roles and their health, and impact of new reproductive technologies. May be repeated for credit.

Ms. Browner

## Regional Cultures

**M272. Indians of South America.** (Same as Latin American Studies M250A.) Lecture, three hours. Prerequisite: consent of instructor. Survey of literature and research topics related to Indian cultures of South America. May be repeated for credit.

**273. Cultures of the Middle East.** Seminar, three hours. Prerequisite: consent of instructor. Survey of literature and problems of various cultures of the Middle East.

**274. Cultures of the Pacific Islands.** Prerequisite: consent of instructor. Topics in contemporary socio-cultural anthropology and classic ethnography of Melanesia, Polynesia, and Micronesia. May be repeated for credit.

**276. Cultures of Southeast Asia.** Prerequisite: consent of instructor. Discussion of recent and current anthropological research in Southeast Asia. Depending on their level of preparation, students produce a topical annotated bibliography, critique, or proposal for research. S/U or letter grading.

**277. Aspects of Chinese Society.** Seminar, three hours. Prerequisite: consent of instructor. Anthropological perspective on historical evolution of and contemporary changes in such key institutions of Chinese society as family, lineage, and associations, setting individuals and groups in the larger political, economic, and class framework of society and state. S/U or letter grading.

Ms. Bray

## History, Theory, and Method

**281. Selected Topics in History of Anthropology.** Prerequisite: consent of instructor. Particular problems in history of anthropology as dictated by interests of students and faculty. May be repeated for credit.

**281P. Contemporary Problems in Africa.** Seminar, three hours. Prerequisite: consent of instructor. Problematic issues in Africa in light of classical anthropological literature and recent work by anthropologists and other fieldworkers in Africa, with cases from eastern and southern Africa. S/U or letter grading.

Ms. Simons

**282. Research Design in Cultural Anthropology.** Prerequisite: consent of instructor. Primarily intended for graduate students preparing for fieldwork. Unique position of anthropology among the sciences and resulting problems for scientific research design. Review of typical research problems and appropriate methods. Students prepare their own research designs and present them for class discussion.

Mr. Johnson

**283. Formal Methods of Data Analysis in Anthropology.** Seminar, three hours. Prerequisite: consent of instructor. Current topics and issues related to formal analysis of data and representation of cultural constructs: formal models of kinship terminologies, structural models of cognitive systems, graph theoretic models of networks, models of decision making, hierarchical information systems, stability in complex adaptive systems. S/U or letter grading.

Mr. Read

**M284. Qualitative Research Methodology.** (Same as Community Health Sciences M216.) Discussion, three hours; laboratory, one hour. Prerequisite: consent of instructor. Intensive seminar/field course in qualitative research methodology. Emphasis on using qualitative methods and techniques in research and evaluation related to health care.

Ms. Scrimshaw

**285. Schools, Domains, and Strategies in World Archaeology.** Seminar, three hours. Prerequisite: consent of instructor. Comparative examination of schools of world archaeology, contrasting their respective data bases, research strategies, and relations to allied intellectual disciplines. Archaeologists from all departments are welcome, as are students interested in history or philosophy of science.

Mr. Sackett

**285P. Selected Topics in Anthropological/Archaeological Theory.** Seminar, three hours. Prerequisites: graduate standing and/or consent of instructor. Variable topics course on important theoretical subjects in anthropology and archaeology. May be repeated for credit. S/U or letter grading.

Mr. Leventhal

**286P. Selected Topics in Computer Simulation and Modeling.** Seminar, three hours. Prerequisite: course 186A or consent of instructor. Applications of computer simulations and/or models to specific problem areas of interest to anthropologists. Problem areas rotate with each offering and include cognitive, ecological, demographic evolutionary, and other theoretical foci. S/U or letter grading.

Mr. Read

**287. Poststructural Theories.** Seminar, three hours. Prerequisites: graduate standing, consent of instructor. Examination of development and application of poststructural theories in anthropology by exploring interdisciplinary connections, especially as they concern the concept of culture, narrative, ethnographic writing, reflexivity, politics of representation, historicity, and study of the self, identity, and the body. S/U or letter grading.

**287P. Anthropology and Colonialism.** Prerequisite: graduate standing. Exploration of multifaceted nature of colonialism and its cultural manifestations in a variety of geographical areas. Reconsideration of history of anthropology for, as Talal Asad argues, "anthropology emerged as a distinctive discipline at the beginning of the colonial era." S/U or letter grading.

Ms. Tamanai

**M288. Ethnographic Film.** (Same as Film and Television M209C.) Prerequisites: graduate standing, consent of instructor. Seminar on uses of film in ethnography and production course in which anthropologists, other social scientists, and humanists learn how to make films that are useful for their disciplines. Cameras and editing facilities provided.

Mr. Boehm, Mr. Hawkins (F)

**M289. Computer Methodologies in Latin American Studies and Anthropology.** (Same as Latin American Studies M225.) Lecture, three hours. Prerequisite: consent of instructor. Basic principles of computing and information processing, along with their potential application in Latin American research. Examination of impact that computers are having in Latin American society.

Mr. Behrens

**C291. Writing for Anthropology.** Lecture, three hours. Prerequisite: consent of instructor. Teaching of writing skills in various academic forms, including term papers, essay examinations, journal articles, and reports. Class projects require student writing and evaluation of professional writing. Emphasis on organization and presentation of a scholarly argument. Concurrently scheduled with course C191. Graduate students expected to prepare a higher level of the scholarly research paper. S/U or letter grading.

Mr. Earle, Ms. Levine

**292. Making Oral Presentations.** Lecture/student presentations, two hours; discussion, one hour. Prerequisite: graduate standing or consent of instructor. How to organize and present seminar reports, papers at scholarly conferences, and lectures to professional audiences. Opportunity for students to develop their speaking skills through actual practice in workshop atmosphere of mutual support and constructive criticism. S/U grading.

Mr. Sackett

## Special Studies

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495. Teaching Anthropology (2 to 4 units).** Seminar/workshop, three hours. Prerequisite: graduate standing. Required of all new teaching assistants. Workshop and seminar in teaching techniques, including evaluation of each student's own performance as a teaching assistant. Four-day workshop precedes beginning of term, followed by 10-week seminar during term designed to deal with problems and techniques of teaching anthropology. Unit credit may be applied toward full-time equivalence but not toward nine-course requirement for M.A. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Individual Studies for Graduate Students (2 to 8 units).** Prerequisite: consent of instructor. Directed individual studies. S/U or letter grading.

**597. Preparation for Ph.D. Qualifying Examinations (2 to 12 units).**

**598. Research for and Preparation of M.A. Thesis (2 to 8 units).** Prerequisite: consent of instructor (faculty adviser). Preparation of research data and writing of M.A. thesis. S/U grading.

**599. Research for Ph.D. Dissertation (2 to 12 units).** Prerequisite: consent of instructor. Ph.D. dissertation research or writing. Students must have completed qualifying examinations and ordinarily take no other coursework.

## Applied Linguistics (Interdepartmental)

3300A Rolfe Hall, (310) 206-1985

### Professors

Roger W. Andersen, Ph.D. (*Teaching English as a Second Language and Applied Linguistics*)  
 Raimo A. Anttila, Ph.D. (*Linguistics*)  
 Lyle Bachman, Ph.D. (*Teaching English as a Second Language and Applied Linguistics*)  
 Marianne Celce-Murcia, Ph.D. (*Teaching English as a Second Language and Applied Linguistics; Distinguished Teaching Award*)  
 Susan R. Curtiss, Ph.D. (*Linguistics*)  
 Bruce P. Hayes, Ph.D. (*Linguistics*)  
 Thomas J. Hinnebusch, Ph.D. (*Linguistics*)  
 Patricia A. Keating, Ph.D. (*Linguistics; Distinguished Teaching Award*)  
 Edward L. Keenan, Ph.D. (*Linguistics*)  
 Pamela L. Munro, Ph.D. (*Linguistics*)  
 Elinor Ochs, Ph.D. (*Teaching English as a Second Language and Applied Linguistics*)  
 Emanuel A. Schegloff, Ph.D. (*Sociology*)  
 Russell G. Schuh, Ph.D. (*Linguistics*)  
 John H. Schumann, Ed.D. (*Teaching English as a Second Language and Applied Linguistics*),  
*Chair*  
 Robert P. Stockwell, Ph.D. (*Linguistics; Distinguished Teaching Award*)

### Professors Emeriti

Russell N. Campbell, Ph.D. (*Teaching English as a Second Language and Applied Linguistics*)  
 Victoria A. Fromkin, Ph.D. (*Linguistics; Distinguished Teaching Award*)  
 Evelyn R. Hatch, Ph.D. (*Teaching English as a Second Language and Applied Linguistics*)  
 Mazisi R. Kunene, Ph.D. (*Linguistics*)  
 Peter N. Ladefoged, Ph.D. (*Linguistics; Distinguished Teaching Award*)  
 Clifford H. Prator, Ph.D. (*Teaching English as a Second Language and Applied Linguistics*)  
 Earl J. Rand, Ph.D. (*Teaching English as a Second Language and Applied Linguistics*)  
 Paul M. Schachter, Ph.D. (*Linguistics; Distinguished Teaching Award*)

### Associate Professors

George D. Bedell, Ph.D. (*Linguistics*)  
 Nina M. Hyams, Ph.D. (*Linguistics*)  
 Hilda J. Koopman, Ph.D. (*Linguistics*)  
 Dominique L. Sportiche, Ph.D. (*Linguistics*)  
 Edward P. Stabler, Ph.D. (*Linguistics*)  
 Donca Steriade, Ph.D. (*Linguistics*)  
 Timothy A. Stowell, Ph.D. (*Linguistics*)

### Assistant Professors

Asif Agha, Ph.D. (*Teaching English as a Second Language and Applied Linguistics*)  
 Marcyliena H. Morgan, Ph.D. (*Anthropology*)

### Lecturers

Donna Brinton, M.A. (*Teaching English as a Second Language and Applied Linguistics*)  
 Janet Goodwin, M.A. (*Teaching English as a Second Language and Applied Linguistics; Luckman Distinguished Teaching Award*)  
 Christine Holten, M.A. (*Teaching English as a Second Language and Applied Linguistics*)  
 Linda Jensen, M.A. (*Teaching English as a Second Language and Applied Linguistics*)

### Adjunct Professor

Ian Maddieson, Ph.D. (*Linguistics*)

## Scope and Objectives

Since language permeates every aspect of our social, economic, political, and academic pursuits, it is small wonder that we have deep abiding curiosity about its origin, its use, and its acquisition. The UCLA doctoral program in applied linguistics provides a rich and supportive environment for graduate students and faculty to define and resolve questions that satisfy that curiosity.

Faculty members of the Department of Teaching English as a Second Language and Applied Linguistics, as well as professors in Anthropology, Linguistics, Psychology, Sociology, and Education, represent a wide range of expertise and experience in language-related research. Their guidance and collaboration with students as they apply relevant elements of linguistics, psycholinguistics, and sociolinguistics result in substantial research findings in the areas of discourse/grammar analysis, language acquisition, and language assessment. Graduates of the program are well prepared to pursue academic and professional careers at the highest level of service and inquiry.

## Ph.D. Degree

### Admission

The basic requirement for admission is completion of the UCLA Master of Arts degree in Teaching English as a Second Language (TESL) or in Linguistics or the equivalent of one of these. Applicants with a graduate degree in TESL, linguistics, applied linguistics, psycholinguistics, or sociolinguistics from another recognized institution may be admitted provided they then make up the courses in one or the other of the two UCLA M.A. programs whose equivalents they have not yet taken. Students with graduate degrees in other related disciplines (such as a foreign language, English, education, psychology, sociology, or anthropology) are advised to complete the UCLA M.A. in Linguistics or TESL before seeking admission to the Ph.D. program.

Prospective candidates are required to submit (1) a statement of purpose describing their research background and the type of dissertation they hope to prepare, (2) three letters of recommendation from professors who are well acquainted with their academic background, (3) their M.A. thesis or related research papers, and (4) Graduate Record Examination (GRE) scores; international applicants should also submit their Test of English as a Foreign Language (TOEFL) scores. The admissions committee considers all of the above criteria, as well as undergraduate and graduate grade-point averages, in decisions on program applicants.

Applications for admission to Fall Quarter should reach UCLA Graduate Application Processing by the preceding December 15; the supporting materials should reach the Applied

Linguistics Program (3300A Rolfe Hall, UCLA, Los Angeles, CA 90024-1531) no later than January 15.

### Major Fields and Specializations

Three areas of specialization are available: discourse/grammar analysis, language acquisition, and language assessment. For details on each specialization, contact the program office.

### Foreign Language Requirement

Before advancement to candidacy, you must demonstrate proficiency in one foreign language. If your native language is English, you may fulfill the requirement by one of the following methods: (1) a reading examination, (2) a research paper based on extensive sources in the language, (3) a conversation examination showing knowledge in depth, or (4) a score of 550 or better on the Graduate School Foreign Language Test (GSFLT). If your native language is not English, you may use English to fulfill the requirement. In consultation with the interdepartmental committee, you must select the most appropriate means of fulfilling the requirement.

### Course Requirements

In addition to fulfilling the general University requirements, candidates for the Ph.D. in Applied Linguistics must meet the program requirements listed below. All courses taken to fulfill breadth and specialization requirements must be approved each term by your faculty adviser.

**Basic Preparation** — Any of the following courses not already taken must be completed as early as possible and before advancement to candidacy for the degree. For basic preparation in linguistics, you can select a phonetics and phonology track, a syntax and semantics track, or a discourse analysis track. For all tracks, you must take Linguistics 120A and 120B. Students selecting the phonetics and phonology track would then take Linguistics 165A or 200A, followed by Linguistics 201 or 203 or 204. Students selecting the syntax and semantics track would take Linguistics 165B, and 200B or 215. Students selecting the discourse analysis track would take Teaching English as a Second Language and Applied Linguistics 283, followed by one course from Teaching English as a Second Language and Applied Linguistics 250, 252, Sociology C244A, C244B, Anthropology 204, or 242. For basic preparation in applied linguistics, you must take Teaching English as a Second Language and Applied Linguistics 241.

**Units and Courses** — As a breadth requirement, all candidates must take at least 32 units of graduate-level coursework (in the 200 or 500 series). These 32 units may not include courses taken while completing basic preparation courses, Linguistics 275, Teaching English as a Second Language and Applied Linguistics 400, or Applied Linguistics 597 or 599. No

more than eight of the 32 units may be in 596 courses. The 32 units must include eight units in one area outside your area of specialization.

Appropriate graduate courses taken at UCLA after completion of the M.A. but before admission to the doctoral program may be applied toward the 32-unit requirement for the Ph.D. Credit may be transferred for up to two courses taken at another institution, but only for graduate-level courses taken after completion of the M.A. and preferably taken within the framework of UCLA's Applied Linguistics 501.

Within Graduate Division limits, courses that may be taken on an S/U basis include undergraduate courses taken as prerequisites to needed graduate courses, undergraduate courses not required, reading courses in a foreign language, graduate courses taken in addition to the required 32 units, Applied Linguistics 501, 597, 599, Teaching English as a Second Language and Applied Linguistics 400, and Linguistics 275. All other courses must be taken for letter grades.

### Research Papers

In lieu of a written qualifying examination, two original research papers of publishable quality in different areas of specialization are required. These may be revised or extended seminar papers but must be prepared after admission to the Ph.D. program. The topics of these papers are to be selected by the student, in consultation with appropriate faculty members and with consent of the Ph.D. program adviser. Each of the finished papers is evaluated by two faculty members.

The doctoral committee administers the University Oral Qualifying Examination before advancement to Ph.D. candidacy.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Dissertation/Final Oral Examination

All candidates are required to prepare a dissertation as a demonstration of their ability to carry out original research under the guidance of their doctoral committee. As the dissertation nears completion, you must make a public report on the results of your research. This may be done, at your choice, at a meeting of the colloquium of either the Department of Teaching English as a Second Language and Applied Linguistics or the Department of Linguistics. You must, therefore, enroll in either Teaching English as a Second Language and Applied Linguistics 400 or Linguistics 275 during the appropriate term. The public report determines whether a final oral examination is required.

## Graduate Courses

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA program adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading. (F,W,Sp)

**596. Directed Individual Study (4 to 8 units).** Prerequisite: doctoral standing. Independent study in an area of applied linguistics. Up to eight units may be applied toward Ph.D. course requirements. May be repeated for credit. (F,W,Sp)

**597. Preparation for Ph.D. Candidacy Examination (4 to 8 units).** Prerequisite: completion of at least six courses of the 32-unit requirement for Ph.D. May not be applied toward the 32-unit requirement. May be repeated for credit. S/U grading. (F,W,Sp)

**599. Research for and Preparation of Ph.D. Dissertation (4 to 16 units).** Prerequisite: advancement to Ph.D. candidacy. Required of all Ph.D. candidates each term they are registered and engaged in dissertation preparation. May be repeated for credit but may not be applied toward Ph.D. course requirements. S/U grading. (F,W,Sp)

## Applied Linguistics Course List

### Discourse/Grammar Analysis

**English 241.** Studies in Structure of the English Language

**Linguistics 201.** Phonological Theory II

202. Language Change

203. Phonetic Theory

204. Experimental Phonetics

205. Morphological Theory

206. Syntactic Theory II

207. Formal Semantics

C209A, C209B. Natural Language Processing I, II

210A, 210B. Field Methods I, II

214. Survey of Current Syntactic Theories

215. Syntactic Typology

220. Linguistic Areas

225. Linguistic Structures

251. Topics in Phonetics and Phonology I: Proseminar

252. Topics in Syntax and Semantics I: Proseminar

253. Topics in Language Variation I: Proseminar

254. Topics in Linguistics I: Proseminar

256A, 256B. Topics in Phonetics and Phonology II: Proseminar

257A, 257B. Topics in Syntax and Semantics II: Proseminar

258A, 258B. Topics in Language Variation II: Proseminar

259A, 259B. Topics in Linguistics II: Proseminar

263A-263B-263C. Seminars: Language Variation (only one of these may be applied toward the 32-unit requirement)

**Teaching English as a Second Language and Applied Linguistics 249.** Current Issues in Language Analysis

250. Advanced Seminar: Cohesion Analysis of English Structure

252. Advanced Seminar: Contextual Analysis of English Structure

283. Discourse Analysis

285. Language Socialization

289. Current Issues in Language Use

### Additional Courses in Other Departments

**Anthropology 204.** Core Seminar: Linguistic Anthropology

M234Q. Psychological Anthropology

242. Ethnography of Communication  
 245. Linguistic and Intracultural Variation  
 249. Social Interaction  
**Education** 204D. Minority Education in Cross-Cultural Perspective  
**German (Germanic Languages)** C238. Linguistic Theory and Grammatical Description  
**Sociology** C244A-C244B. Conversational Structures I, II  
 258. Talk and Social Institutions  
 266. Selected Problems in Analysis of Conversation  
 267. Selected Problems in Communication  
**Spanish (Spanish and Portuguese)** 209. Dialectology  
 256A-256B. Studies in Spanish Linguistics  
 257. Studies in Dialectology

## Language Acquisition

- Linguistics** 213. Psycholinguistics  
 C235. Theoretical Issues in Disorders of Language Development  
 254. Topics in Linguistics I: Proseminar  
 259A, 259B. Topics in Linguistics II: Proseminar  
 264A-264B-264C. Seminars: Special Topics in Linguistic Theory  
**Teaching English as a Second Language and Applied Linguistics** 227. Experiential Seminar: Second Language Learning  
 251. Advanced Seminar: Interlanguage Analysis  
 260. Psycholinguistics and Language Teaching  
 261. Second Language Acquisition  
 269. Current Issues in Language Acquisition  
 271. Cross-Linguistic Topics in Second Language Acquisition

## Additional Courses in Other Departments

- Education** 217D. Language Development and Education  
 227B. Research on Cognitive and Language Characteristics of Exceptional Individuals  
**Psychiatry** 257A-257B-257C. Communication Disorders Associated with Developmental Disabilities and Psychiatric Disorders  
**Psychology** 240A-240B. Developmental Psychology  
 242F. Seminar: Developmental Psychology — Development of Language and Communication  
 260A-260B-260C. Proseminars: Cognitive Psychology  
 262. Human Learning and Memory  
 263. Psycholinguistics  
 268D. Seminar: Human Information Processing — Language and Thought

## Language Assessment

- Teaching English as a Second Language and Applied Linguistics** 209. Current Issues in Experimental Design and Statistics for Applied Linguistics  
 222. Language Testing for Teachers of English as a Second Language  
 225. Program Evaluation in Applied Linguistics  
 232. Advanced Seminar: Construction and Administration of Language Tests  
 258. Laboratory: Advanced Topics in Language Assessment

## Additional Courses in Other Departments

- Education** 200B. Survey Research Methods in Education  
 200C. Analysis of Survey Data in Education  
 202. Evaluation Theory  
 210A. Introduction to Research Design and Statistics  
 210B. Statistical Inference  
 210C. Analysis of Variance  
 210D. Multivariate Analysis  
 210E. Factor Analysis

- 211A. Measurement of Educational Achievement and Aptitude  
 211B. Measurement in Education: Underlying Theory  
 211C. Item Response Theory  
 218A. Multiple Regression Analysis  
 218B. Advanced Quantitative Models in Nonexperimental Research: Multilevel Analysis  
 218C. Structural Equation Modeling  
 218D. Analysis of Categorical and Other Nonnormal Data  
 219. Laboratory: Advanced Topics in Research Methodology  
 221. Computer Analyses of Empirical Data in Education  
 222C. Qualitative Data Reduction and Analysis  
 412A. Criterion-Referenced and Norm-Referenced Test Construction  
**Psychology** 250A, 250B. Advanced Psychological Statistics  
 252A. Multivariate Analysis  
 253. Factor Analysis  
 254A. Psychological Scaling  
 254B. Cluster Analysis  
 255. Quantitative Aspects of Assessment  
 M257. Multivariate Analysis with Latent Variables  
 259. Quantitative Methods in Cognitive Psychology

## Archaeology (Interdepartmental)

A148 Fowler Building, (310) 825-4169

### Professors

- C. Rainer Berger, Ph.D. (*Anthropology, Geography, Geophysics*)  
 Giorgio Buccellati, Ph.D. (*Ancient Near East, History*)  
 Jesse L. Byock, Ph.D. (*Germanic Languages*)  
 Elizabeth Carter, Ph.D. (*Near Eastern Languages and Cultures*), Chair  
 Christopher B. Donnan, Ph.D. (*Anthropology*)  
 Susan B. Downey, Ph.D. (*Art History*)  
 Timothy Earle, Ph.D. (*Anthropology*)  
 James N. Hill, Ph.D. (*Anthropology*)  
 Merrick Posnansky, Ph.D. (*History, Anthropology*)  
 Donald A. Preziosi, Ph.D. (*Art History*)  
 Dwight Read, Ph.D. (*Anthropology*)  
 James R. Sackett, Ph.D. (*Anthropology*)  
 Marija Gimbutas, Ph.D., Emerita (*Slavic Languages and Literatures, European Archaeology*)  
 Clement W. Meighan, Ph.D., Emeritus (*Anthropology*)  
 Henry B. Nicholson, Ph.D., Emeritus (*Anthropology*)  
 Stanislav Segert, Ph.D., Emeritus (*Near Eastern Languages and Cultures*)

### Associate Professors

- Irene A. Bierman, Ph.D. (*Art History*)  
 Hung-hsiang Chou, Ph.D. (*East Asian Languages and Cultures*)  
 Gail E. Kennedy, Ph.D. (*Anthropology*)  
 Steven Lattimore, Ph.D. (*Classics*)  
 Richard Leventhal, Ph.D. (*Anthropology*)  
 Sarah P. Morris, Ph.D. (*Classics*)  
 Lothar von Falkenhausen, Ph.D. (*Art History*)

### Assistant Professors

- Jeanne Arnold, Ph.D., in Residence (*Anthropology*)  
 Daniel C. Polz, Ph.D. (*Near Eastern Languages and Cultures*)

## Scope and Objectives

The interdisciplinary program offers M.A. and Ph.D. degrees in Archaeology. It brings together interests and specialties represented by those departments offering courses in archaeology, as well as others offering courses relevant to archaeology. Qualified undergraduates may enroll in courses offered by the program provided they receive consent of the instructor.

The primary purpose of the program is to train scholars in archaeology for university-level teaching and research and other professional aims. Its resources are intended for those archaeology students whose academic goals cannot be met within any single department and who, consequently, require an individually designed plan of study combining academic preparation in two or more departments. Applications are especially encouraged from students whose interests may form bridges with disciplines and departments not offering archaeology (e.g., botany, chemistry, geology, mathematics, statistics, zoology, etc.). There are opportunities for participation in a variety of field, laboratory, and computer studies on a worldwide scale.

## Requirements for Graduate Degrees

### Admission

Any undergraduate major may be considered for admission to the program although those applicants who have had little previous archaeological education may be admitted under probationary status and may be required to take a series of courses to make up deficiencies. A Graduate Record Examination (GRE) General Test report is required. The following application materials should be submitted directly to the chair of the program: an acceptable plan of study (including a statement of objectives, an outline of projected coursework, and a general indication of an M.A. paper or dissertation topic); three letters of recommendation; a research paper preferably relevant to archaeology or comparable evidence of scholarly work. Applicants are accepted for admission to Fall Quarter only. The program's "Study Guidelines" brochure will be sent to applicants on request to the Chair, Archaeology Program, A148 Fowler Building, UCLA, Los Angeles, CA 90024-1526.

### Major Fields or Subdisciplines

Africa; analysis of archaeological materials; ancient Near East; Andean South America; Caribbean; China and the Far East; classical Greece and Rome; dating techniques in archaeological sciences; Europe; India and Central Asia; Mesoamerica; Pacific; paleoenvironmental studies; Western North America.

Other areas of specialization are also available.

### Fieldwork

No graduate degree is awarded until you have worked in the field and have demonstrated



your competency to direct field research in archaeology. Both theoretical and practical knowledge of methods and techniques used in the field are necessary.

This requirement may be met in several ways. Ordinarily you take a regular UCLA field course such as Anthropology 115P, Archaeology 259, Ancient Near East 261, or History 276, or similar courses offered by other departments. Comparable courses offered by other institutions may also be accepted. An informal report, submitted by the director of an excavation, describing work performed by the students under supervision, may be sufficient. Excepting the four courses listed above, any given formula to fulfill the requirement must be cleared in advance with the program chair.

## Master of Arts Degree

The structure of the M.A. program includes the successful completion, within seven academic terms, of fieldwork (described above) plus the following requirements.

### Foreign Language Requirement

The ability to read at least one modern foreign language, relevant to your field of interest and approved by your adviser, is required for the M.A. You may meet this requirement by (1) passing the Graduate School Foreign Language Test (GSFLT) with a score of 550 or better, (2) completing the third course in an introductory, regular sequence of the selected language at UCLA with a minimum grade of A, or (3) taking a reading examination (in Spanish, French, or German) administered by the program.

The foreign language requirement must be completed by the end of your sixth term in residence, unless an earlier deadline is imposed by your adviser.

### Course Requirements

A minimum of 42 units (at least nine courses, of which five must be graduate) taken for a letter grade are required, to be distributed as follows: a minimum of five courses (26 units) in the 200 and 500 series, including Archaeology 200 (six units), M201A-M201B (six units each), and two elective graduate courses\*, one of which may be course 596. Course 596 (letter-graded) may be taken twice for a maximum of 12 units, but only six units may be applied toward the minimum graduate course requirement. Four upper division elective courses\* (a minimum of 16 units, excluding 199s) are also required.

### Comprehensive Examination Plan

You are required to take a comprehensive core examination during your third term in resi-

dence. This written examination is based largely on a reading list which has been the focus of the seminar discussions in Archaeology M201A-M201B. The examination is graded high pass, pass, or no pass and may be repeated once.

### M.A. Paper

A master's-level research paper, normally no longer than 35 pages and graded by the three members of the M.A. committee, is to be submitted to the program chair by the end of the third week of the seventh term.

## Ph.D. Degree

### Admission

Completion of a master's program is required. Applicants who do not have a UCLA M.A. in Archaeology should refer to the admission section under "Requirements for Graduate Degrees" above. Admission to the doctoral program for students completing a UCLA M.A. in Archaeology is based on written recommendation by all three members of the M.A. committee and at least a high pass on either the M.A. core examination or the M.A. paper.

Doctoral students entering the program with an M.A. from another university are required to pass the comprehensive core examination (see "Master of Arts Degree") unless they can demonstrate to the chair and the members of the admissions committee that the examination should be waived.

### Foreign Language Requirement

Reading competence in two modern foreign languages relevant to your interests is normally required and may be demonstrated as outlined for the master's degree.

### Course Requirements

You must be enrolled in a minimum of 12 units per term. Archaeology 200 is required. There are no other restrictions or requirements concerning courses.

### Qualifying Examinations

By the end of your fourth term in the doctoral program, after the foreign language requirement has been fulfilled, you must take a written qualifying examination in the following three areas: (1) topical specialization, (2) analytical theory, method, and technique, and (3) regional culture history. If you pass this examination, you may then make arrangements to take the oral examination. If the written examination or any portion thereof is failed, you may make one further attempt if your committee deems it appropriate.

The University Oral Qualifying Examination must be taken by the end of your sixth term in the doctoral program. You are required to submit to the doctoral committee a formal dissertation proposal (of about 10 pages), including the particular research problem on which you

will be examined during the oral qualifying examination.

## Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

## Final Oral Examination

The final oral examination may be waived by your doctoral committee.

## Upper Division Course

**C110. Archaeological Materials Identification and Characterization (6 units).** Lecture, three hours; laboratory, four hours. Laboratory-oriented introduction for archaeologists to identification and quantitative description of solid materials, especially metals, ceramics, and other inorganic and some organic substances. Concurrently scheduled with course C210.

## Graduate Courses

**200. Archaeology Colloquium (1 or 6 units).** Discussion, two hours. Prerequisite: archaeology major or consent of instructor. Required of all students. Development of archaeology as a discipline. Major intellectual trends and current issues in archaeology. Scientific and humanistic viewpoints presented by archaeologists from different academic departments. May be repeated for credit but may be applied only twice toward departmental M.A. requirements. S/U grading only for students enrolled for one unit. (Sp)

**M201A-M201B. Graduate Core Seminars: Archaeology (6 units each).** (Same as Anthropology M201A-M201B.) Seminar, three hours. Required of all M.A. students. Seminar discussions based on carefully selected list of 30 to 40 major archaeology works. These compulsory core seminars provide students with foundation in breadth of knowledge required of a professional archaeologist. Archaeological historiography, survey of world archaeology, and archaeological techniques. Emphasis on appreciation of the multidisciplinary background of modern archaeology and relevant interpretative strategies. May be repeated for credit with consent of adviser. (F, M201A; W, M201B)

**M205. Special Topics in Archaeology (6 units).** (Same as Anthropology M212S.) Lecture, three hours. Prerequisite: graduate standing in archaeology or in other departments. Open to undergraduates with consent of instructor. Special advanced topics in archaeology such as new strategies, methodologies, excavation projects, regional synthesis, or comparisons on a worldwide basis, including current work by core faculty of the program and special visitors.

**C210. Archaeological Materials Identification and Characterization (6 units).** Lecture, three hours; laboratory, four hours. Laboratory-oriented introduction for archaeologists to identification and quantitative description of solid materials, especially metals, ceramics, and other inorganic and some organic substances. Concurrently scheduled with course C110.

**259. Fieldwork in Archaeology (2 to 12 units).** Prerequisite: consent of instructor. Participation in archaeological field excavations or museum research under supervision of staff archaeologists at UCLA. Minimum of one month of field time away from campus required. May be repeated for credit with consent of adviser.

**596. Individual Studies for Graduate Students (2 to 12 units).** Hours to be arranged. Prerequisite: consent of instructor. May be repeated for credit with consent of adviser.

**597. Preparation for Ph.D. Qualifying Examinations (2 to 12 units).** Prerequisites: completion of formal coursework, passing of language examinations before enrollment, consent of instructor. May be repeated for credit with consent of adviser. S/U grading.

\*Of the six combined elective courses, no more than four may be offered by the same department. At least one must be outside your sphere of regional interest to be selected from a pool of eligible courses by your adviser.

**598. M.A. Paper Preparation (2 to 12 units).** Prerequisite: consent of instructor. May be repeated for credit with consent of adviser. S/U grading.

**599. Ph.D. Dissertation Research and Preparation (2 to 12 units).** Prerequisite: consent of instructor. May be repeated for credit with consent of adviser. S/U grading.

## Related Courses in Other Departments

Related courses, not listed individually, include regional geography, ancient and regional history, ethnography, folklore, history of technology, and the Earth sciences. Also recommended are the appropriate modern and ancient languages for your area of study.

Most archaeology courses are taught in the various departments. The following is a list of such courses, by topic and department. You are encouraged to examine the course listings of all departments for a truly interdisciplinary course of study.

## Methodology and History

**Ancient Near East (Near Eastern Languages) 261.** Practical Field Archaeology

**Anthropology 115P.** Archaeological Field Training

115R. Strategy of Archaeology

M115S. Historical Archaeology

M116Q. Dating Techniques in Environmental Sciences and Archaeology

117. Archaeological Materials Analysis: Laboratory Methods

117P. Intensive Laboratory Training in Archaeology

118A, 118B. Museum Studies

121A. Primate Fossil Record

121B. The Australopithecines

121C. Evolution of the Genus *Homo*

129P. Laboratory Methods in Biological Anthropology: Skeletal

132. Technology and Environment

138. Methods and Techniques of Ethnohistory

158. Hunting and Gathering Societies

183. History of Archaeology

186A. Quantitative Methods in Anthropology

186B. Models and Modeling in Anthropology

210. Analytical Methods in Archaeological Studies

211. Regional Analysis in Archaeology

M216. Dating Techniques in Environmental Sciences and Archaeology

217. Explanation of Societal Change

221A-221B. Fossil Evidence for Human Evolution

283. Formal Methods of Data Analysis in Anthropology

**Art History 203.** Museum Studies

265. Fieldwork in Archaeology

## New World

**Anthropology 113P.** Archaeology of North America

113Q. Prehistory of California Indian Cultures

113R. Southwestern Archaeology

114P. Ancient Civilizations of Western Middle America (Nahuatl Sphere)

114Q. Ancient Civilizations of Eastern Middle America (Maya Sphere)

114R. Ancient Civilizations of Andean South America

212P. Selected Topics in Hunter/Gatherer Archaeology

212Q. Problems in Southwestern Archaeology

214. Selected Topics in Prehistoric Civilizations of the New World

215. Field Training in Archaeology

219. Complex Hunters/Gatherers in Theoretical Perspective

**Art History C117A.** Pre-Columbian Art of Mexico

C117B. Pre-Columbian Art of the Maya

C117C. Pre-Columbian Art of the Andes

118A. Arts of Oceania

118D. Arts of Native North America

220. Oceanic, Pre-Columbian, African, and Native North American Art

## Old World — Africa

**Art History 118C.** Arts of Sub-Saharan Africa

C119A. Advanced Studies in African Art: Western Africa

C119B. Advanced Studies in African Art: Central Africa

220. Oceanic, Pre-Columbian, African, and Native North American Art

**History 175A.** Topics in African History: Prehistoric Africa — Technological and Cultural Traditions

197. Undergraduate Seminars

201A-201U. Topics in History

276. African Archaeology: Field Techniques

277. African Archaeology: Data Analysis

## Old World — Europe

**Anthropology 112.** Old Stone Age Archaeology

213. Selected Topics in Old World Archaeology

**Art History M102C.** Archaic Greek Art and Archaeology

M102D. Classical Greek Art and Archaeology

M102E. Hellenistic Greek Art and Archaeology

M102F. Etruscan Art

M102G. Roman Art

M102H. Late Roman Art

221. Topics in Classical Art

223. Classical Art

**Classics M153C.** Archaic Greek Art and Archaeology

M153D. Classical Greek Art and Archaeology

M153E. Hellenistic Greek Art and Archaeology

M153F. Etruscan Art

M153G. Roman Art

M153H. Late Roman Art

251A-251D. Seminars: Classical Archaeology

252. Topography and Monuments of Athens

253. Topography and Monuments of Rome

**Indo-European Studies 131.** European Archaeology: Proto-Civilizations of Europe

132. European Archaeology: Bronze Age

250A-250B. European Archaeology

## Old World — India and the Far East

**Art History 114A.** Early Art of India

114C. Japanese Art

114D. Later Art of India

114E. Arts of Korea

114F. Arts of Southeast Asia

C115A. Advanced Indian Art

C115B. Advanced Chinese Art

C115C. Advanced Japanese Art

C115D. Art of Early China, Neolithic to A.D. 906

C115E. Chinese Art of Sung and Yuan Dynasties, 906-1368

C115F. Chinese Art from Ming Dynasty to the People's Republic, 1368 to the Present

C259. Advanced Japanese Art

260A. Indian Art

260B. Chinese Art

260C. Japanese Art

**Chinese (East Asian Languages) 190.** Archaeology in China

290A-290B. Seminars: Selected Topics in Chinese Archaeology

295A-295B. Seminars: Selected Topics in Chinese Cultural History

## Old World — Islam

**Art History 104A.** Western Islamic Art

104B. Eastern Islamic Art

C104C. Problems in Islamic Art

213. Advanced Studies in Islamic Art

## Old World — Near East

**Ancient Near East (Near Eastern Languages) 160A-160B.** Introduction to Near Eastern Archaeology

161A-161B-161C. Archaeology of Mesopotamia

162. Archaeology of Palestine

163A-163B. Archaeology of Iran

164A-164B-164C. Archaeology of Historic Periods in Mesopotamia

220. Seminar: Ancient Egypt

M250. Seminar: Ancient Mesopotamia

250X. Seminar: Ancient Mesopotamia

260. Seminar: Ancient Near Eastern Archaeology

262. Seminar: Object Archaeology

**Anthropology 110.** World Archaeology

**Art History 101A.** Egyptian Art and Archaeology

101B. Egyptian Art and Archaeology of the Middle and New Kingdoms

M102A. Minoan Art and Archaeology

M102B. Mycenaean Art and Architecture

210. Egyptian Art

**History M105.** History of Ancient Mesopotamia and Syria

193D. Religions of the Ancient Near East

200A-200U. Advanced Historiography

201A-201U. Topics in History

# Art History

3209 Dickson Art Center, (310) 206-6905

## Professors

Albert Boime, Ph.D.

Susan B. Downey, Ph.D.

Cecelia F. Klein, Ph.D.

David M. Kunzle, Ph.D.

Donald F. McCallum, Ph.D.

Carlo Pedretti, M.A. (*Armand Hammer Professor of*

*Leonardo Studies*)

Donald A. Preziosi, Ph.D.

Anthony Vidler, Ph.D., *Chair*

Katharina Otto-Dorn, Ph.D., *Emerita*

## Associate Professors

Irene A. Bierman, Ph.D.

Robert L. Brown, Ph.D.

Lothar von Falkenhausen, Ph.D.

Joanna Woods-Marsden, Ph.D.

## Assistant Professor

Cécile Whiting, Ph.D.

**Lecturers**

Shelley M. Bennett, Ph.D.  
Jean S. Weisz, Ph.D., *Senior Emerita*

**Scope and Objectives**

The department offers programs leading to the Bachelor of Arts, Master of Arts, and Ph.D. degrees. Art history courses survey Western and non-Western art from earliest human history to the present. Students learn to treat artistic monuments and trends from a historical point of view, analytically rather than subjectively. This curriculum prepares students for careers in which broad knowledge of art is important and provides students preparing for graduate study with a foundation for research requiring independent critical judgment.

The rich and varied art resources available at UCLA and throughout Southern California offer students extraordinary opportunities to supplement the formal curriculum.

**Bachelor of Arts Degree****Preparation for the Major**

*Required:* Two courses from Art History 50, 51, 54, 57 and two courses from 55A, 55B, 56A, 56B. It is strongly recommended that these courses be taken prior to enrollment in upper division courses.

**The Major**

*Required:* Eleven upper division art history courses as follows:

(1) A total of six courses (24 units) from the following 12 areas, distributed as follows: one course from three different areas in Group A (three courses total) and one course from three different areas in Group B (three courses total):

Group A — (1) 101A, 101B, M102A, M102B, M102C, M102D, M102E, (2) M102F, M102G, M102H, (3) 105A, 105B, 105C, 105D, 105E, (4) 106A, 106B, 106C, 106D, 108A, 108B, (5) 109A, 109B, 109C, 109D, (6) 110A, 110B, 110C, 110D, 110E, 110F, 110G, (7) C112A, C112B, C112C.

Group B — (8) 104A, 104B, C104C, (9) 114A, 114D, 114F, C115A, (10) 114C, 114E, C115B, C115C, C115D, C115E, C115F, (11) C117A, C117B, C117C, 118D, 118E, (12) 118A, 118C, C119A, C119B.

(2) Five art history electives from the above 12 areas; courses 127, 197, and 199 may also be included.

Two terms of one foreign language or equivalent are also required. The language is in addition to the college foreign language requirements.

Art history majors should be aware that the upper division course requirements in the major (44 units) do not meet the upper division requirement of 72 units for graduation. Additional upper division units must be taken to reach the 72-unit total.

It is recommended that you have each term's program approved by the departmental adviser.

**Master of Arts Degree****Admission**

A minimum grade-point average of 3.25 overall and 3.5 in upper division art history courses is required. The Graduate Record Examination (GRE) is required, although no minimum score has been established. Three letters of recommendation (preferably from art historians) are required, as are two writing samples (two 10-page research papers). The statement of purpose submitted with the application is given weight in the evaluation and should be as specific as possible about *your interests in art history*. In addition, you must have completed six full courses in the history of art (grades of B or better and not including studio courses), with at least two courses from Fields A and B (see below). Specific areas may not be offered in satisfaction of more than one requirement.

Field A — (1) Aegean, (2) American, (3) Greek and Roman, (4) medieval and Byzantine, (5) modern and contemporary, (6) Renaissance and baroque.

Field B — (7) African, (8) Chinese, (9) Indian/Southeast Asian, (10) Islamic, (11) Japanese, (12) Native North American, (13) oceanic, (14) pre-Columbian.

Field C — (15) Critical theory.

Applicants demonstrating exceptional promise but lacking some or all of the six required courses may, at the discretion of the graduate review committee, be admitted on condition that they make up those courses. Deficiencies must be made up during your first two terms in residence and may not be applied toward degree requirements. Instead of taking a course, you may substitute a competency examination in the deficient area.

Prospective students may contact the Counselor, Department of Art History, 3209 Dickson, UCLA, Los Angeles, CA 90024-1417, for brochures and information. The department has no special departmental application; admission is limited to Fall Quarter.

**Major Areas or Subdisciplines**

Fifteen major areas in three fields, as noted under "Admission" above.

**Foreign Language Requirement**

Reading knowledge of French and German is required of all students except those intending to major in Asian (i.e., Chinese, Japanese, South Asian, Southeast Asian), pre-Colum-

bian, Islamic or, with consent of the adviser, Italian art history. Students majoring in Chinese or Japanese art history must substitute either Chinese or Japanese respectively for either French or German. Those majoring in South Asian, Southeast Asian, or Islamic art history must substitute, for either French or German, an appropriate classical research language of South Asia, Southeast Asia, or the Islamic Middle East. Those majoring in Italian art history may, with consent of their major adviser, substitute Italian for French. In all cases, the final decisions regarding choice must be made in consultation with, and with the consent of, the major adviser. Students majoring in pre-Columbian art history must substitute Spanish for French.

With the exception of Asian and Islamic art history majors, all students must demonstrate reading fluency in both foreign languages by any of the following methods: (1) passing the department language examination, (2) passing the Graduate School Foreign Language Test (GSFLT) with a minimum score of 600, (3) enrolling in and completing with a minimum grade of B, UCLA's French 5, German 6, Italian 5, and/or Spanish 25. One of these language requirements must be satisfied by the end of the second term in residence and the other by the end of the sixth.

Students majoring in Asian or Islamic art history must satisfy their European language requirement by the end of the sixth term in residence and may do so by any of the three methods listed above. The Asian or Islamic language requirement, however, is normally satisfied by enrolling in an appropriate course sequence for six consecutive terms (normally beginning with the first term of graduate study) and by maintaining a grade of B or better in those courses. Details and/or exceptions must be worked out with the major adviser.

**Course Requirements**

The M.A. degree requires the completion of a major and two minors in art history; there are three major/minor course options available (see the department counselor for option details). For options 1 and 2, you are required to take a minimum of 10 graduate and upper division courses, of which at least eight must be in art history and of which at least six must be graduate courses (200 series and 596). For option 3, you are required to take a minimum of 13 graduate and upper division courses (but may be required to take up to 14), of which at least eight must be in art history and of which at least six must be graduate courses (200 series and 596). At least four of these courses (in all options) must be in the 200 series, and no more than two may be 596 courses (Art History 597 and 598 may not be applied toward the degree).

All students must take course 200 and either 201 or 202. Courses should be selected in consultation with your major and minor advisers.

## Thesis Plan

The thesis committee is established after completion of all course requirements. At the same time, you select a thesis topic in your major field. The thesis should deal succinctly with the topic in an independent, critical, and original fashion while taking fully into account the present state of research on the problem.

## Ph.D. Degree

### Admission

The M.A. in Art History is usually required for admission to the Ph.D. degree program. However, students with an M.A. degree in other disciplines may apply for admission. The graduate review committee determines the equivalency of the M.A. on an individual basis. An M.A. in Art History from another institution may be accepted as equivalent to that from UCLA or the holder may be accepted into the program at a stage determined by the graduate review committee. All incoming Ph.D. students must have taken and passed with a grade of B or better at least two courses (upper division and/or graduate) in areas not related to the proposed major (as outlined in the M.A. course requirements). Deficiencies must be made up during your first two terms in residence and may not be applied toward degree requirements.

The application must include, in addition to official transcripts and Graduate Record Examination (GRE) scores, all of the following:

- (1) A standard statement of purpose (approximately 400 words) which should be as specific as possible about your interests in art history.
- (2) A copy of the M.A. thesis or, if no thesis was written, one major research paper written at the M.A. level in the major (or intended major) field.
- (3) Three or more letters of recommendation from individuals familiar with your scholarly work, one of which must be a detailed letter of assessment and endorsement from your major adviser for the M.A.
- (4) A written statement from the intended Ph.D. major adviser of willingness to supervise your Ph.D. work.
- (5) Evidence, *prior* to admission, of reading fluency in two appropriate foreign languages.

Students applying directly to the Ph.D. program from the M.A. in Art History program at UCLA follow a slightly modified procedure. For details, see the department counselor.

Reading knowledge of French and German is *requisite for admission* at the Ph.D. level for those majoring in all areas except Asian, Islamic, pre-Columbian, or Italian art history. You may demonstrate this knowledge by submitting a Graduate School Foreign Language Test (GSFLT) score of 600 or better, taking and

passing the relevant department language examination(s) after officially being admitted, or completing UCLA's German 6, French 5, and/or Italian 5 with a grade of B or better.

Students intending to major in Asian or Islamic art history must demonstrate, by the methods outlined above, reading fluency in either French or German. In addition, they must complete with a grade of B or better six consecutive quarter courses (or equivalent) in an appropriate Asian or Islamic language. Determination of the appropriate language and acceptable equivalencies should be worked out in advance with the intended major adviser.

Students intending to major in pre-Columbian art history must demonstrate, by the means outlined above, reading fluency in German and Spanish. In the latter case, UCLA's Spanish 25, passed with a grade of B or better, fulfills the requirement.

Students who have passed a required foreign language at another institution must either take and pass the relevant UCLA departmental foreign language examination or submit an official recent (within two years) GSFLT score of 600 or better in that language.

Prospective students may contact the Counselor, Department of Art History, 3209 Dickson, UCLA, Los Angeles, CA 90024-1417, for brochures and information. The department has no special departmental application; admission is limited to Fall Quarter.

### Major Areas or Subdisciplines

Field A — (1) Aegean, (2) American, (3) baroque, (4) Byzantine, (5) contemporary (post-1945), (6) 18th-century, (7) Greek, (8) medieval, (9) 19th-century, (10) Renaissance, (11) Roman, (12) 20th-century.

Field B — (13) African, (14) Chinese, (15) Indian, (16) Islamic, (17) Japanese, (18) Native North American, (19) oceanic, (20) pre-Columbian, (21) Southeast Asian.

Field C — (22) Critical theory.

### Foreign Language Requirement

You are normally required to demonstrate, no later than the time of your University Oral Qualifying Examination, reading fluency in one or more foreign languages in addition to those required for admission. Among those areas requiring such reading fluency are Aegean, Greek, Roman, medieval, Byzantine, Renaissance, Islamic, pre-Columbian, and all Asian areas. The applicability of this requirement, the language(s) required, and the exact methods of satisfying the requirement are determined in consultation with the major adviser.

## Course Requirements

There are three major/minor course options available (see the department counselor for option details). For options 1 and 2, a minimum of eight graduate and upper division courses is required, of which at least four must be art history graduate courses (200 series and 596). For option 3, a minimum of 11 graduate and upper division courses is required, of which at least four must be art history graduate courses (200 series and 596). Of these totals (eight or 11), you must take at least two, and may take up to five, extra-departmental upper division and/or graduate courses, which must be approved by your major or minor adviser (where applicable).

If you enter the Ph.D. program deficient in Art History 200 or its equivalent, you must add it to your total requirements. In some cases, course 201 may also be required (if recommended by your faculty adviser).

## Qualifying Examinations

After completion of coursework and language requirements, you must take the Ph.D. written comprehensive examination to test your breadth and depth of knowledge in the major and minor fields of study. If you fail the examination, or any part thereof, that portion may be repeated during the subsequent term in residence. No further repetition is allowed.

A dissertation topic is selected after you pass the written comprehensive examination; the members of your doctoral committee are then nominated, and the committee is appointed by the dean of the Graduate Division.

After having submitted a dissertation proposal, you then take the University Oral Qualifying Examination, given by your doctoral committee. Assuming there is no more than one no pass vote, you may initiate the procedure to advance to candidacy.

## Final Oral Examination

The doctoral committee may decide, by unanimous agreement, to waive the final oral examination (not normally required). If a final oral examination is required, it is held after the final draft of the dissertation has been circulated among the committee members. In case of failure, the doctoral committee decides, by unanimous agreement, whether or not you may be reexamined.

## Lower Division Courses

**50. Ancient Art.** Lecture, three hours; quiz, one hour. Prehistoric, Egyptian, Mesopotamian, Aegean, Greek, Hellenistic, and Roman art and architecture.

Ms. Downey, Mr. Preziosi

**51. Medieval Art.** Lecture, three hours; quiz, one hour. Early Christian, Byzantine, Islamic, Carolingian, Ottoman, Romanesque, and Gothic art and architecture.

**54. Modern Art.** Lecture, three hours; quiz, one hour. Art and architecture from 1800 to the present in Europe and the U.S.

Mr. Boime, Mr. Kunzle

**55A. Africa, Oceania, and Native America.** Lecture, three hours; discussion, one hour. Comparative approach, emphasizing economic, cultural, and historical aspects of selected artistic traditions which developed outside the spheres of influence of major European and Asiatic civilizations.

**55B. Arts of Pre-Columbian America.** Lecture, three hours; discussion, one hour. Survey of sequence of cultures which developed in the area between (and including) Mexico and Peru from ca. 1000 B.C. to the Conquest. Ms. Klein

**56A. Art of India and Southeast Asia.** Lecture, three hours; discussion, one hour. Survey of major artistic monuments of Indo-Iranian and Southeast Asian cultures, concentrating on formal and iconographical problems, as well as social and political conditions under which artworks were patronized and produced. Mr. Brown

**56B. Introduction to Chinese Art.** Lecture, three hours; discussion, one hour. Introduction to discipline of Chinese art history. Fundamentals of formats, methods, and materials of Chinese art, visual and textual sources, peculiarities of patronage, traditional art history and criticism, and approaches to representation in premodern China. Mr. von Falkenhausen

**57. Renaissance and Baroque Art.** Lecture, three hours; discussion, one hour. History of art and architecture in Western Europe from 1400 to 1750. Ms. Woods-Marsden

**88A-88Z. Lower Division Seminars.** Lecture, three hours. Prerequisite: freshman standing. Variable topics; consult *Schedule of Classes* or department for topics to be offered in a specific term. P/NP or letter grading:

**88A.** Buddha's Life and Teachings in Art, Texts, and Worship. Development of Buddhist art in India through Buddha's teachings, expressed in art, architecture, texts, and ritual. Re-creation of Buddha's life by analyzing art and reading Buddhist texts of his life. Mr. Brown (F)

## Upper Division Courses

**101A. Egyptian Art and Archaeology.** Lecture, three hours. Study of architecture, sculpture, painting, and minor arts during the Predynastic period and Old Kingdom. Mr. Preziosi

**101B. Egyptian Art and Archaeology of the Middle and New Kingdoms.** Lecture, three hours. Prerequisite: course 50. Study of architecture, sculpture, painting, and minor arts during the Middle and New Kingdoms. Mr. Preziosi

**M102A. Minoan Art and Archaeology.** (Formerly numbered 102A.) (Same as Classics M153A.) Lecture, three hours. Prerequisite: course 50. Study of development of art and architecture in Minoan Crete from ca. 3000 to 1000 B.C. P/NP or letter grading. Mr. Preziosi

**M102B. Mycenaean Art and Architecture.** (Formerly numbered 102B.) (Same as Classics M153B.) Lecture, three hours. Prerequisite: course 50. Study of development of art and architecture in Mycenaean Greece from ca. 2000 to 1000 B.C. P/NP or letter grading. Mr. Preziosi

**M102C. Archaic Greek Art and Archaeology.** (Same as Classics M153C.) Lecture, three hours. Prerequisites: course 50, Classics 10 or equivalent. Study of development of art and architecture of Greek world from approximately 800 through 490 B.C. P/NP or letter grading. Ms. Downey, Mr. Preziosi

**M102D. Classical Greek Art and Archaeology.** (Same as Classics M153D.) Lecture, three hours. Prerequisites: course 50, Classics 10 or equivalent. Recommended: upper division classics or Greek courses. Study of development of art and architecture of Greek world from approximately 490 through 350 B.C. P/NP or letter grading. Ms. Downey, Mr. Preziosi

**M102E. Hellenistic Greek Art and Archaeology.** (Formerly numbered 103B.) (Same as Classics M153E.) Lecture, three hours. Prerequisites: course 50, Classics 10 or equivalent. Study of development of art and architecture of Greek world from middle of the 4th century B.C., including transmittal of Greek art forms to the Romans. P/NP or letter grading. Ms. Downey

**M102F. Etruscan Art.** (Formerly numbered 103D.) (Same as Classics M153F.) Lecture, three hours. Prerequisite: course 50. Arts of Italic peninsula from ca. 1000 B.C. to end of the Roman Republic. P/NP or letter grading. Ms. Downey

**M102G. Roman Art.** (Formerly numbered 103C.) (Same as Classics M153G.) Lecture, three hours. Prerequisite: course 50. Art and architecture of Rome and its Empire from ca. 300 B.C. to A.D. 300. P/NP or letter grading. Ms. Downey

**M102H. Late Roman Art.** (Formerly numbered 103E.) (Same as Classics M153H.) Lecture, three hours. Prerequisites: courses 50, M102G. Art of Roman Empire from the 2nd through 4th century (A.D.). P/NP or letter grading. Ms. Downey

**M102I-M102J-M102K. Classical Archaeology.** (Same as Classics M153I-M153J-M153K.) Lecture, three to four hours. Prerequisites: Classics 10 and 20, or History 1A, or equivalent. Knowledge of Greek and Latin not required. General introduction to study of Aegean, Greek, and Roman architecture, sculpture, and painting. P/NP or letter grading. **M102I.** Greco-Roman Architecture; **M102J.** Greco-Roman Sculpture; **M102K.** Greco-Roman Painting. Mr. Lattimore, Ms. Morris

**104A. Western Islamic Art.** Lecture, three hours. From the Tigris and Euphrates Rivers to Spain, 7th to 16th century. Ms. Bierman

**104B. Eastern Islamic Art.** Lecture, three hours. From the Tigris and Euphrates Rivers through Afghanistan and parts of central Asia; Ottoman Empire. Ms. Bierman

**C104C. Problems in Islamic Art.** Lecture, three hours. Monuments or theoretical problems related to Islamic culture and artistic production. Concurrently scheduled with course C214. Ms. Bierman

**105A. Early Christian Art.** Lecture, three hours. Prerequisite: course 51 or consent of instructor. Origins and development of architecture, sculpture, and painting of early Christianity to the iconoclastic controversy.

**105B. Early Medieval Art.** Lecture, three hours. Prerequisite: course 51 or consent of instructor. Art and architecture of Western Europe from the Migration period until A.D. 1000.

**105C. Romanesque Art.** Prerequisite: course 51. Art and architecture of Western Europe in the 11th and 12th centuries.

**105D. Gothic Art.** Lecture, three hours. Prerequisite: course 51. Art and architecture of Europe in the 13th century.

**105E. Byzantine Art.** Lecture, three hours. Prerequisite: course 51 or consent of instructor. Theory and development of Byzantine art from the iconoclastic controversy to 1453 and diffusion of Byzantine art in Armenia, Georgia, the Caucasus, and Russia.

**105F. Late Gothic Art and Architecture.** Lecture, three hours. Strongly recommended (but not prerequisite): course 51. Art and architecture of Europe in the 14th and early 15th centuries. P/NP or letter grading.

**106A. Italian Art of the Trecento.** Lecture, three hours. Prerequisite: course 57 or consent of instructor. Art and architecture of the 14th century. Ms. Woods-Marsden

**106B. Italian Art of the Quattrocento.** Lecture, three hours. Prerequisite: course 57. Art and architecture of the 15th century. Ms. Woods-Marsden

**106C. Italian Art of the Cinquecento.** Lecture, three hours. Prerequisite: course 57. Art and architecture of the 16th century. Ms. Woods-Marsden

**106D. Late Renaissance Art: Counter-Reformation.** Lecture, three hours. Prerequisite: course 57 or consent of instructor. Painting, sculpture, and architecture of the late 16th and early 17th centuries considered in context of the Counter-Reformation.

**108A-108B. Northern Renaissance Art.** Lecture, three hours. Prerequisite: course 57. Course 108A is prerequisite to 108B. Painting and sculpture in the Northern Renaissance. Ms. Woods-Marsden

**109A. Baroque Art.** Lecture, three hours. Prerequisite: course 57. Art and architecture of Italy and Spain, 16th to late 17th century.

**109B. Baroque Art.** Lecture, three hours. Prerequisite: course 109A. Art and architecture of Northern Europe, 16th to late 17th century. Mr. Kunzle

**109C. European Art of the 18th Century.** Lecture, three hours. Prerequisite: course 57. Painting, architecture, and sculpture of the 18th century examined in light of political and intellectual developments. Special emphasis on effect of the rise of democratic institutions, especially the French Revolution. Mr. Kunzle

**109D. Art and Architecture of Georgian England.** Lecture, three hours. Ms. Bennett

**110A. European Art of the 19th Century.** Lecture, three hours. Prerequisite: course 54. Neoclassicism and Romanticism, with emphasis on France—development and influence of David, Ingres, and Delacroix. Mr. Boime

**110B. European Art of the 19th Century: Realism and Impressionism.** Lecture, three hours. Prerequisite: course 54. Inquiry into problem of realism, with emphasis on French art, but including developments in England and Germany. Mr. Boime

**110C. European Art of the 19th and 20th Centuries: Postimpressionism to Surrealism.** Lecture, three hours. Prerequisite: course 54. Study of major developments in modern art, 1880s to 1930, including Seurat, Cezanne, Gauguin, Van Gogh, Art Nouveau, Fauvism, German expressionism.

**110D. Contemporary Art.** Lecture, three hours. Prerequisite: course 54. European and American art since World War II. Mr. Boime, Mr. Kunzle

**110E. Art and Politics in the Contemporary Americas: Post-World War II U.S. Art and Politics.** Prerequisite: course 54. Selective survey of media and art supporting, condoning, and resisting U.S. capitalism and imperialism, with special emphasis on Vietnam era and arts of protest. Mr. Kunzle

**110F. Selected Topics in Modern Art.** Lecture, three hours. Prerequisite: course 54. Changing topics in modern art (post-1780) which reflect interests of individual regular and visiting faculty members.

**110G. Art and Politics in the Contemporary Americas: Latin America.** Prerequisite: course 54. Nationalist and revolutionary responses of Latin America to U.S. imperialism. Discussion of the cases of Mexico, Cuba, Chile, and Nicaragua. Mr. Kunzle

**C112A. American Art before the Civil War.** Lecture, three hours. Painting, sculpture, and architecture in the U.S. from Colonial period through the Civil War. Concurrently scheduled with course C212A. Ms. Whiting

**C112B. American Art in the Gilded Age, 1860-1900.** Lecture, three hours. Painting, sculpture, and architecture in the U.S. from the Civil War to turn of the century. Concurrently scheduled with course C212B. Ms. Whiting

**C112C. 20th-Century American Art.** Lecture, three hours. Painting and sculpture in the U.S. from 1900 to the present. Concurrently scheduled with course C212C. Ms. Whiting

**114A. Early Art of India.** Lecture, three hours. Not open to freshmen. Survey of Indian art from Indus Valley cultures to the 10th century. Emphasis on Buddhist and Hindu backgrounds of the arts. Mr. Brown

**114C. Japanese Art.** Lecture, three hours. Not open to freshmen. Japanese art from its beginning in prehistory through the 19th century. Emphasis on development of Buddhist art and its relationship with the culture. Mr. McCallum

**114D. Later Art of India.** Lecture, three hours. Not open to freshmen. Survey of Indian art from the 10th to 19th century. Decline of Buddhist art, last efflorescence of Hindu architecture, Muslim painting and architecture, and Rajput painting. P/NP or letter grading. Mr. Brown

**114E. Arts of Korea.** Lecture, three hours. Art and archaeology of Korea from the Neolithic Period through the Yi dynasty. Particular emphasis on early archaeology and state formation, Buddhist art, Koryo ceramics, and Yi literati painting. Mr. McCallum

**114F. Arts of Southeast Asia.** Lecture, three hours. Not open to freshmen. Southeast Asian art from its beginning in prehistory through the 19th century. Study of art of selected cultures from Burma, Malaysia, Thailand, Cambodia, Vietnam, and Indonesia. Mr. Brown

**C115A. Advanced Indian Art.** Lecture, three hours. Prerequisite: course 114A. Study in Indian sculpture and architecture. Concurrently scheduled with course C257. Mr. Brown

**C115B. Advanced Chinese Art.** Lecture, three hours. Study in Chinese painting and sculpture. Concurrently scheduled with course C258. Mr. von Falkenhausen

**C115C. Advanced Japanese Art.** Lecture, three hours. Prerequisite: course 114C. Study in Japanese painting and sculpture. Concurrently scheduled with course C259. Mr. McCallum

**C115D. Art of Early China, Neolithic to A.D. 906.** Lecture, three hours. Prerequisite: consent of instructor. Period generally known as "early China," ranging from earliest Neolithic artifacts to end of T'ang dynasty (618-906). Concurrently scheduled with course C261A. Mr. von Falkenhausen

**C115E. Chinese Art of Sung and Yuan Dynasties, 906-1368.** Lecture, three hours. Prerequisite: consent of instructor. Evolution of Chinese painting and some sculpture from Sung through Yuan dynasties (906-1368). Concurrently scheduled with course C261B. Mr. von Falkenhausen

**C115F. Chinese Art from Ming Dynasty to the People's Republic, 1368 to the Present.** Lecture, three hours. Prerequisite: consent of instructor. Evolution of Chinese painting and graphic art from Ming dynasty through the late 1970s. Concurrently scheduled with course C261C. Mr. von Falkenhausen

**C117A. Pre-Columbian Art of Mexico.** Lecture, three hours. Prerequisite: course 55B or consent of instructor. Study of art of selected cultures of northern Mesoamerica from ca. 1200 B.C. to the Conquest, with emphasis on historical and iconographic problems. Concurrently scheduled with course C218A. Ms. Klein

**C117B. Pre-Columbian Art of the Maya.** Lecture, three hours. Prerequisite: course 55B or consent of instructor. Study of art of selected Maya-speaking cultures of southern Mesoamerica from ca. 2000 B.C. to the Conquest, with particular emphasis on history and iconography. Concurrently scheduled with course C218B. Ms. Klein

**C117C. Pre-Columbian Art of the Andes.** Lecture, three hours. Prerequisite: course 55B or consent of instructor. Study of art of selected cultures of Colombia, Ecuador, Peru, and Bolivia from ca. 4000 B.C. to the Conquest, with particular emphasis on history and iconography of art of Peru. Concurrently scheduled with course C218C. Ms. Klein

**118A. Arts of Oceania.** Lecture, three hours. Prerequisite: course 55A or consent of instructor. Survey of arts of the major island groupings of the Pacific, emphasizing style-regions and broad historical relationships. Ms. Klein

**118C. Arts of Sub-Saharan Africa.** Lecture, three hours. Survey, with emphasis on sculpture, of selected traditions within a style-region framework.

**118D. Arts of Native North America.** Lecture, three hours. Prerequisite: course 55A or consent of instructor. Survey of painting, sculpture, and other arts from the Eskimo to peoples of the Caribbean and Southwestern U.S. Ms. Klein

**118E. Advanced Studies in Non-Western Art.** Lecture, three hours. Prerequisite: course 118A or 118C or 118D or consent of instructor. Selected topics in arts of non-Western peoples which reflect interests of individual regular and visiting faculty members. P/NP or letter grading.

**C119A. Advanced Studies in African Art: Western Africa.** Lecture, three hours. Selected topics in arts of peoples living west and north of Cameroun, with emphasis on special problems of theory and method. Concurrently scheduled with course C216A.

**C119B. Advanced Studies in African Art: Central Africa.** Lecture, three hours. Selected topics in arts of peoples of equatorial, southern, and eastern Africa, with emphasis on special problems of theory and method. Concurrently scheduled with course C216B.

**127. Undergraduate Seminar.** Lecture, three hours. Prerequisite: junior standing or consent of instructor. Selected aspects of art history explored through readings, discussion, research papers, and oral presentations. May be repeated twice.

**197. Honors Course.** Hours to be arranged. Prerequisites: 3.0 GPA overall, 3.5 in major, junior or senior standing, consent of instructor. Individual studies for majors. May be repeated once for credit.

**199. Special Studies in Art (2 to 8 units).** Hours to be arranged. Prerequisites: 3.0 GPA in major, senior standing, consent of instructor. Individual studies for majors. Eight units may be applied toward the major. P/NP or letter grading.

## Graduate Courses

All courses may be repeated for credit (unless otherwise noted) on recommendation of the adviser; they are not open to undergraduate students.

**200. Art Historical Theories and Methodologies.** Discussion, three hours. Critical examination of history of the discipline of art history, with studies of various theoretical, critical, and methodological approaches to visual arts from antiquity to the present.

**201. Topics in Historiography of Art History.** Discussion, three hours. Critical examination of historiographic traditions of specific areas and fields within the discipline of art history, concentrating on particular time periods, geographical areas, artistic traditions, or the work of one or more authors.

**202. Topics in Theory and Criticism in Art History.** Discussion, three hours. Focused studies of various theoretical and critical traditions within art history, concentrating on particular issues, authors, or methodologies either within or across historical and cultural areas. Mr. Preziosi, Ms. Whiting

**203. Museum Studies.** Seminar, two hours. Various aspects of museum activities: concepts and historical evolution of art museums and collecting; methodology of exhibitions; problems involved in acquisition and evaluation of works of art.

**204. Restoration, Preservation, and Conservation.** Seminar, two hours. May not be repeated.

**205. Studies in Prints.** Seminar, two hours. Critical studies in history and connoisseurship of graphic arts in the Western world. Group or individual studies often culminate in professionally directed exhibitions produced by Grunwald Center for the Graphic Arts.

**206. Studies in Drawings.** Seminar, two hours. Critical studies in history and connoisseurship of draughtsmanship in the Western world. Individual studies emphasizing professional presentation. Group studies may culminate in exhibitions sponsored by Grunwald Center for the Graphic Arts.

**210. Egyptian Art.** Seminar, two hours. Prerequisites: courses 101A, 101B, M102A. Art in Egypt during the Late period and Greco-Roman period. Students should be ready to prepare for every meeting a briefing of a topic from archaeological memoirs, not to exceed 10 minutes. Some lectures.

**211. Topics in Aegean Art.** Seminar, two hours. Prerequisites: courses M102A and M102B, or consent of instructor. Art and architecture of Aegean Bronze Age (3000-1000 B.C.). Monuments or theoretical problems related to art and culture of Crete, Greece, the Cyclades, or Western Anatolia. Mr. Preziosi

**C212A. American Art before the Civil War.** Lecture, three hours. Painting, sculpture, and architecture in the U.S. from Colonial period through the Civil War. Concurrently scheduled with course C112A. Ms. Whiting

**C212B. American Art in the Gilded Age, 1860-1900.** Lecture, three hours. Painting, sculpture, and architecture in the U.S. from the Civil War to turn of the century. Concurrently scheduled with course C112B. Ms. Whiting

**C212C. 20th-Century American Art.** Lecture, three hours. Painting and sculpture in the U.S. from 1900 to the present. Concurrently scheduled with course C112C. Ms. Whiting

**213. Advanced Studies in Islamic Art.** Seminar, two hours. Art and architecture of Islamic world (Spain to Iran) from the 7th to 17th century. Monuments or theoretical problems related to Islamic culture and artistic production. Ms. Bierman

**C214. Problems in Islamic Art.** Lecture, three hours. Prerequisite: consent of instructor. Monuments or theoretical problems related to Islamic culture and artistic production. Concurrently scheduled with course C104C. Ms. Bierman

**C216A. Advanced Studies in African Art: Western Africa.** Lecture, three hours. Selected topics in arts of peoples living west and north of Cameroun, with emphasis on special problems of theory and method. Concurrently scheduled with course C119A.

**C216B. Advanced Studies in African Art: Central Africa.** Lecture, three hours. Selected topics in arts of peoples of equatorial, southern, and eastern Africa, with emphasis on special problems of theory and method. Concurrently scheduled with course C119B.

**C218A. Pre-Columbian Art of Mexico.** Lecture, three hours. Prerequisite: course 55B or consent of instructor. Study of art of selected cultures of northern Mesoamerica from ca. 1200 B.C. to the Conquest, with emphasis on historical and iconographic problems. Concurrently scheduled with course C117A. Ms. Klein

**C218B. Pre-Columbian Art of the Maya.** Lecture, three hours. Prerequisite: course 55B or consent of instructor. Study of art of selected Maya-speaking cultures of southern Mesoamerica from ca. 2000 B.C. to the Conquest, with particular emphasis on history and iconography. Concurrently scheduled with course C117B. Ms. Klein

**C218C. Pre-Columbian Art of the Andes.** Lecture, three hours. Prerequisite: course 55B or consent of instructor. Study of art of selected cultures of Colombia, Ecuador, Peru, and Bolivia from ca. 4000 B.C. to the Conquest, with particular emphasis on history and iconography of art of Peru. Concurrently scheduled with course C117C. Ms. Klein

**219A. Oceanic Art.** Discussion, two hours. Prerequisite: consent of instructor. Studies in selected topics in the art of Pacific islands. Ms. Klein

**219B. Pre-Columbian Art.** Discussion, two hours. Prerequisite: consent of instructor. Studies in selected topics in art of pre-Hispanic Latin America. Ms. Klein

**219C. African Art.** Discussion, two hours. Prerequisite: consent of instructor. Studies in selected topics in art of sub-Saharan Africa.

**219D. Native North American Art.** Discussion, two hours. Prerequisite: consent of instructor. Studies in selected topics in art of the American Indian. Ms. Klein

**220. Oceanic, Pre-Columbian, African, and Native North American Art.** Discussion, two hours. Prerequisite: consent of instructor. Studies in selected topics comparing arts of Oceania, Africa, and Pre-Columbian and Native North America. Ms. Klein

**221. Topics in Classical Art.** Lecture, two to three hours. Studies in Parthian art. Site-by-site survey of the Near East (Afghanistan, Iran, Iraq, Syria) during period of Greek and Parthian control.

Ms. Downey

**223. Classical Art.** Seminar, two hours. Studies in Greco-Roman art and archaeology. Studies of specific periods, sites, or artistic media.

Ms. Downey

**225. Medieval Art.** Seminar, two hours. Studies in selected topics in Byzantine and European medieval art.

**226A-226B. Medieval Art and Architecture.** Studies in selected topics in Byzantine and European medieval art. Seminar extends over two consecutive terms. In Progress grading.

**229. Renaissance and Baroque Paleography.** Seminar. Prerequisites: knowledge of Italian, working knowledge of Latin. Workshop approach to documents pertaining to artistic commissions from the 15th to 17th century in Italy to study various aspects of handwriting in official and private deeds, correspondence, treatises, and inscriptions.

Mr. Pedretti

**230. Italian Renaissance Art.** Seminar, two hours. Prerequisite: knowledge of Italian. Study of various aspects of Leonardo's theoretical approach to art in terms of sources and impact on followers.

Mr. Pedretti, Ms. Woods-Marsden

**231. Leonardo and Renaissance Theory of Art.** Seminar, two hours. Prerequisite: knowledge of Italian. Study of various aspects of Leonardo's theoretical approach to art in terms of sources and impact on followers.

Mr. Pedretti

**235. Northern Renaissance Art.** Seminar, two hours. Prerequisite: knowledge of German. Emphasis on selected topic (e.g., particular artist, trend, or problem). Research papers and oral reports required.

**240. Baroque Art.** Seminar, two hours. Emphasis on selected topic (e.g., particular artist, trend, or problem). Research papers and oral reports required. Language requirements depend on area of focus.

Mr. Kunzle

**244. Topics in European Art from 1700 to 1900.** Lecture, two to three hours.

**245. European Art from 1700 to 1900.** Seminar, two hours.

**246. Art and Architecture of Georgian England.** Seminar, two hours.

Ms. Bennett

**253. Modern Art.** Seminar, two hours. Changing topics in modern art (including illustration and other popular forms) which reflect interests of particular faculty members. Political and economic factors affecting arts of France and Germany at various times.

Mr. Boime, Mr. Kunzle

**255. American Art.** Seminar, two hours. Prerequisite: course C112A or C112B or C112C or consent of instructor, depending on topic. Topics in American art from Colonial period to the present. Discussion of weekly readings, student oral presentations, and papers.

Ms. Whiting

**C257. Advanced Indian Art.** Lecture, three hours. Prerequisite: course 114A. Study in Indian sculpture and architecture. Concurrently scheduled with course C115A.

Mr. Brown

**C258. Advanced Chinese Art.** Lecture, three hours. Study in Chinese painting and sculpture. Concurrently scheduled with course C115B.

Mr. von Falkenhausen

**C259. Advanced Japanese Art.** Lecture, three hours. Prerequisite: course 114C. Study in Japanese painting and sculpture. Concurrently scheduled with course C115C.

Mr. McCallum

**260A. Indian Art.** (Formerly numbered 260.) Lecture, two hours. Advanced studies in secular and religious artistic traditions of India. S/U or letter grading.

Mr. Brown

**260B. Chinese Art.** (Formerly numbered 260.) Lecture, two hours. Advanced studies in secular and religious artistic traditions of China. S/U or letter grading.

Mr. von Falkenhausen

**260C. Japanese Art.** (Formerly numbered 260.) Lecture, two hours. Advanced studies in secular and religious artistic traditions of Japan. S/U or letter grading.

Mr. McCallum

**C261A. Art of Early China, Neolithic to A.D. 906.** Lecture, three hours. Prerequisite: consent of instructor. Period generally known as "early China," ranging from earliest Neolithic artifacts to end of Tang dynasty (618-906). Concurrently scheduled with course C115D.

Mr. von Falkenhausen

**C261B. Chinese Art of Sung and Yuan Dynasties, 906-1368.** Lecture, three hours. Prerequisite: consent of instructor. Evolution of Chinese painting and some sculpture from Sung through Yuan dynasties (906-1368). Concurrently scheduled with course C115E.

Mr. von Falkenhausen

**C261C. Chinese Art from Ming Dynasty to the People's Republic, 1368 to the Present.** Lecture, three hours. Prerequisite: consent of instructor. Evolution of Chinese painting and graphic art from Ming dynasty through the late 1970s. Concurrently scheduled with course C115F.

Mr. von Falkenhausen

**265. Fieldwork in Archaeology (2 to 8 units).** Participation in archaeological excavations or other archaeological research under supervision of the staff.

**M270. Art Law.** (Same as Law M301.) Prerequisite: consent of instructor. Knowledge of fine arts, arts management, or international law desirable. Limited enrollment; management and art history students may cross-register with consent of instructors. Legal issues related to the fine arts. Consideration of U.S. domestic law as well as international treaties and foreign law in addressing such controversial issues as the international trade in art, art in public places, and moral rights. Distinguished guest speakers and one field trip.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study or Research (2 to 8 units).** Prerequisite: consent of instructor.

**597. Preparation for M.A. Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 12 units).** Prerequisite: consent of instructor. S/U grading.

**598. Research for and Preparation of M.A. Thesis (2 to 12 units).** Prerequisite: consent of instructor. S/U grading.

**599. Research for and Preparation of Ph.D. Dissertation (2 to 12 units).** Prerequisite: consent of instructor. S/U grading.

## Related Courses in Another Department

**Classics 251A.** Seminar: Classical Archaeology — Aegean Bronze Age

**251B.** Seminar: Classical Archaeology — Greco-Roman Architecture

**251C.** Seminar: Classical Archaeology — Greco-Roman Sculpture

**251D.** Seminar: Classical Archaeology — Greco-Roman Painting

## Asian American Studies (Interdepartmental)

3230 Campbell Hall, (310) 825-2974

### Professors

Edna Bonacich, Ph.D. (*Sociology, UC Riverside*)

Lucie C. Cheng, Ph.D. (*Sociology*)

John N. Hawkins, Ph.D. (*Education*)

Harry H.L. Kitano, Ph.D. (*Social Welfare*)

Stanley Sue, Ph.D. (*Psychology*)

### Associate Professors

King-Kok Cheung, Ph.D. (*English*)

Valerie J. Matsumoto, Ph.D. (*History*)

Robert A. Nakamura, M.F.A. (*Film and Television*)

Don T. Nakanishi, Ph.D. (*Education*)

Paul Ong, Ph.D. (*Urban Planning*)

### Assistant Professors

Jinqi Ling, Ph.D. (*English*)

Ailee Moon, Ph.D. (*Social Welfare*)

Kyeyoung Park, Ph.D. (*Anthropology*)

Shu-mei Shih, Ph.D. (*East Asian Languages and Cultures*)

Cindy Yee-Bradbury, Ph.D. (*Psychology*)

### Adjunct Associate Professor

Yuji Ichioka, Ph.D. (*History*)

### Visiting Assistant Professor

David Wong Louie (*English*)

## Scope and Objectives

The Asian American Studies Program, an interdepartmental program supported by the Asian American Studies Center, promotes the study of Asian and Pacific peoples in the U.S. from several disciplines. The undergraduate program provides a general introduction to Asian American studies for those who anticipate advanced work at the graduate level or careers in research and community work related to the Asian American. Although no undergraduate major is offered in Asian American studies, students may participate in the program through a departmental major or an interdepartmental major such as East Asian studies. The graduate program leads to the M.A. degree.

A major goal of the program is to communicate the experiences of Asians as an American ethnic group. Courses examine the important issues and concerns of Asian Americans, including their history, mental health, social organization, and culture.

## Special Undergraduate Program

### Preparation for the Specialization

Required: Asian American Studies 100A-100B.

## Upper Division

Since this is not a degree-granting program, students participating in it must complete an organized major.

For further information on the undergraduate specialization, contact the Curriculum Coordinator, Asian American Studies Center, at the above address.

## Master of Arts Degree

### Admission

In addition to the University's minimum requirements, applicants are expected to present evidence of their previous interest in Asian American studies through courses taken at the undergraduate level, by research papers written independently or for related classes, or by work experience in an Asian American community. In any case, applicants are required to submit a paper or article, preferably on Asian Americans, directly to the Asian American Studies Program (3230 Campbell Hall, UCLA, Los Angeles, CA 90024-1546) as part of their application. Three letters of recommendation are also required.

### Major Fields

Since the program is interdepartmental, its major fields are determined by the participating faculty members from various departments.

### Research Tool or Language Requirement

Prior to advancement to candidacy, you must fulfill one of the following requirements:

(1) Foreign Language — Two years of university coursework or equivalent in an Asian language. This requirement may be fulfilled before entering the program, but you must pass a proficiency examination administered by the interdepartmental committee.

(2) Research Methods — Three upper division or graduate courses in research methods with grades of B or better (e.g., statistics, computer science, field and observational techniques, or archival methods). Courses should be selected from the interdepartmental committee's approved list.

You must justify your requirement choice in a written statement. The rationale must specify the courses selected and how they directly relate to research and career goals.

### Course Requirements

A total of 11 upper division and graduate courses is required for the degree. Of that number, seven must be graduate courses, including the required Asian American Studies 200A, 200B, 200C. Three of the graduate courses must be selected from Anthropology 231, Education 204D, 253G, History 201H, 245, Sociology 261, 263. The remaining four courses of the 11-course total, three of which may be upper division, must be approved by

your faculty adviser and should be selected to give you additional training in a discipline or greater understanding of a particular topic.

Two courses in the 500 series may be applied toward the required 11 courses; however, only one of the two may be applied toward the required seven graduate courses.

### Thesis Plan

In partial fulfillment of the requirements for the M.A. degree, you are required to complete either one of two thesis plans or a comprehensive examination.

**Plan A (Thesis)** — The thesis is intended to provide the opportunity for independent scholarly research on the historical and contemporary experiences of the Asian American population. It should be an original contribution to the field and the length and quality of a publishable journal article. You are expected to submit a research plan to your thesis committee for approval at the beginning of Fall Quarter of your second year in residence. After your thesis is approved and completed, the committee conducts an oral examination on its subject, usually in Spring Quarter of your second year. Academic credit for thesis research and preparation is given through Asian American Studies 598.

**Plan B (Field Research Thesis)** — A field research thesis is recommended for students who are interested in the practical application of what they have learned in their graduate coursework or who are intending to pursue careers with Asian American community organizations and agencies. Your field research thesis committee meets with you to approve your project plan at the beginning of Fall Quarter of your second year in residence. After your thesis is completed, the committee conducts an oral examination on the written report of the project, usually in Spring Quarter of your second year. Academic credit for field research is given through course 596 or 598.

### Comprehensive Examination Plan

You may elect to complete the M.A. degree by taking a written comprehensive examination based on an annually updated "Approved List of Core Works in Asian American Studies," a collection of approximately 200 of the most significant scholarly and creative books, novels, articles, and reports in the field of Asian American studies. The examination is normally offered during the break between Winter and Spring Quarters. You must notify the program chair of your intent to take the examination at least one academic term before it is administered. If you fail the examination, you may repeat it once. Academic credit for examination preparation is given through Asian American Studies 596.

## Lower Division Course

**21. Asians and Pacific Islanders in American Society.** Lecture, three hours; discussion, one hour. Multidisciplinary examination of history and cultures of Asians and Pacific Islanders in the U.S. Topics include origins and history of migration to the U.S., social movements, ethnic images in literature and art, communities in the U.S. and California, and their current issues. P/NP or letter grading. Mr. Ling

## Upper Division Courses

**100A-100B. Introduction to Asian American Studies.** Introductory course on Asian American studies. **100A.** History of Asians in America; **100B.** Contemporary Asian American Communities.

(F, 100A; W, 100B)

**101A. Field Studies Methods in Asian Pacific Communities.** Lecture, three hours. Prerequisite: one course from Asian American Studies 100A through 197Z. Development of community profiles on Asian Pacific American communities of students' choice, using various field studies techniques of data collection. P/NP or letter grading.

**101B. Internships in Asian Pacific Communities.** Discussion, 90 minutes; fieldwork, eight hours minimum. Prerequisite: course 101A or another Asian American studies course (except 199) or consent of instructor. Integrates academic and empirical work by providing students the challenge of performing public service and community work in Asian Pacific or other multicultural communities, and of bringing their on-going internship experiences back to classroom. P/NP grading.

**M102. Asian American Literature.** (Same as English M102.) Prerequisite: satisfaction of Subject A requirement. Prose and poetry by Americans of Chinese, Japanese, Pilipino, and Korean origins. Study of interaction of autobiography and fiction, nourishing and limiting influences of mainstream American and Asian literary traditions, and conflict between ideological and literary criteria. Ms. Cheung, Mr. Ling

**103. Asian Americans and the Law.** Survey of major federal and California case and legislative law directed specifically toward Asian Americans from 1850 to World War II and relocation. Major subject areas include Japanese relocation orders, anti-Asiatic labor legislation, legal prohibitions against Asians' right to testify, case law on Asian women, and equal educational opportunity for Asians. (F)

**105. Asian American Women.** Lecture, three hours. Condition of Asian women in America. Topics include racial and cultural stereotypes, women in Asian American history, and contemporary issues and concerns of Asian American women. Current approaches to Asian American women presented and evaluated.

**M107. Asian American Personality and Mental Health.** (Same as Psychology M107.) Lecture, three hours. Prerequisite: Psychology 10. Foundations of personality development and mental health among Asian Americans. Topics include culture, family patterns, achievements, stressors/resources, and immigrant and minority group status.

Mr. Sue, Ms. Yee-Bradbury

**195A-195E. Asian American History and Experience.** Prerequisite: sophomore standing. Survey of immigration history, settlement patterns, and experiences of specific Asian American populations. Examination of historical and contemporary sociocultural, economic, and political issues as they affect formation and character of various Asian American communities. Consult Asian American Studies Center for topics to be offered in a specific term. P/NP or letter grading. **195A.** Pilipino American Experience; **195B.** Korean American Experience; **195C.** Vietnamese American Experience; **195D.** Japanese American History; **195E.** Chinese American History.

(F,W,Sp)



**M196A-196E. Critical Issues in U.S.-Asian Relations.** (Formerly numbered 196A-196E.) Prerequisite: sophomore standing. Critical examination of U.S. involvement in specific Asian countries, including study of historical, political, and socioeconomic factors that shape relations between Asia and the U.S. Exploration of impact of relationships in the Pacific Rim, as well as on Asian Americans and the Asian American experience. Consult Asian American Studies Center for topics to be offered in a specific term. P/NP or letter grading. **M196A.** The U.S. and the Philippines. (Same as History M153.) Lecture, three hours. Recommended (but not prerequisite): knowledge of Southeast Asian or U.S. history, or both. Examination of interrelationships of immigration and of colonialism and independence between the U.S. and the Philippines, focused mainly within the time period from 1898 to the present; **196B.** U.S.-Korea Relations; **196C.** U.S.-Vietnam Relations; **196D.** U.S.-Japan Relations; **196E.** U.S.-China Relations. (F,W,Sp)

**197A-197Z. Topics in Asian American Studies.** (Formerly numbered 197.) Lecture, three to four hours. Prerequisite: junior/senior standing. Variable topics in Asian American studies on selected issues in education, literature, social process, public policy, and economic development. P/NP or letter grading:

**M197A.** Introduction to Indo-American Studies. (Same as Community Health Sciences M197A.) Lecture, three hours. Prerequisite: junior/senior standing in Asian American studies or at least one course in Southeast Asian or Indian history or consent of instructor. Introductory study of Indian American immigration experiences in the U.S., including historical background, demographics, immigration policies and effects, and adaptation experiences. Class projects include sample survey of quality of life, annotated bibliography, and review of creative works. Mr. Kar (Sp)

**M197B.** Investigative Journalism and Communities of Color. (Same as Afro-American Studies M195.) Lecture, three hours. Impact of investigative journalism on communities of color; exploration of dimensions of power and oppression as these relate to communities of color. Coursework stresses learning by doing, with students required to apply their knowledge through writing for campus and community media. Mr. Omatsu

**M197H.** Culture, Media, and Los Angeles (6 units). (Same as Afro-American Studies M102 and Honors Collegium M102.) Lecture, four hours; screenings, two hours. Role of media in society and its influence on contemporary cultural environment, specifically in Los Angeles; issues of representation as they pertain to race, ethnicity, gender, and sexuality. Mr. Gabriel (Sp)

**199. Special Topics in Asian American Studies (2 to 4 units).** Prerequisites: course 100A or 100B or comparable knowledge in Asian American studies, junior or senior standing, consent of instructor. Special individual studies on topics such as ethnic literature, public policies, economic development, immigrant education, and/or social policies related to Asian American studies. May be repeated for a maximum of eight units.

## Graduate Courses

**200A. Critical Issues in Asian American Studies.** Prerequisites: graduate standing, consent of instructor. Examines and seeks to develop a critical appreciation of research literature on Asians in America and to develop alternative interpretations of the Asian American experience. Topics include Asian American history and economic/political and social/psychological issues. Ms. Matsumoto (F)

**200B. Critical Issues in Asian American Communities.** Lecture, three hours. Prerequisites: graduate standing, consent of instructor. Evaluation of traditional and contemporary theories and models of community for their appropriateness to understanding Asian Pacific American communities. Consideration of specific topics which explicate development, structure, and dynamics of Asian Pacific American communities in studying community issues and concerns. Ms. Park (W)

**200C. Critical Issues in Asian American Studies.** Lecture, three hours. Prerequisites: graduate standing, consent of instructor. Critical review of research methods, strategies, and philosophies in Asian American studies. Mr. Nakanishi (Sp)

**M297A-297Z. Topics in Asian American Studies.** (Formerly numbered 297.) Prerequisite: graduate standing or consent of instructor. Selected topics in Asian American studies:

**M297A.** Topics in Asian American Literature. (Same as English M260A.) Lecture, three hours. Graduate seminar that examines and critically evaluates writings of Asian Americans. Ms. Cheung

**M297B.** Asian Migration to the U.S. (Same as Architecture and Urban Planning M242A.) Emphasis on Asia as main regional source for international migrants. Topics include patterns and theories of international migration and their relevance to the Asian experience, sending and receiving country perspectives, research and policy issues. S/U or letter grading.

**M297C.** Urbanization in Asia — Policy Issues and Problems. (Same as Architecture and Urban Planning M242B.) Urbanization in less-developed countries in Asia with specific reference to its peculiar features and characteristics, and relationship of urbanization to the development process. Topics include urbanization development, structural and policy determinants of urbanization, urban policy and strategies, and country case studies. S/U or letter grading.

**M297D.** Asian Americans and Legal Ideology. (Same as Law M315.) Exploration of Asian American experience as it relates to American legal system, considering both dominant and oppositional concepts of law. Consideration of primary historical documents to examine ways Asian Americans have been victims of the legal system, as well as astute manipulators of the legal system.

**490. Writing Workshop for Graduate Students (2 units).** Lecture, one hour; discussion, one hour. Prerequisite: consent of instructor. Practice in writing reports, grant proposals, abstracts, theses, and article-length research papers. Analyzing rhetorical and stylistic features of essays in various Asian American journals helps students improve both their prose style and editorial abilities. Four units may be applied toward M.A. degree requirements. May be repeated once for credit. S/U grading. Ms. Cheung

**596. Directed Individual Study or Research (2 to 8 units).** Hours to be arranged. Prerequisite: consent of instructor.

**598. Research for and Preparation of M.A. Thesis (2 to 8 units).** Prerequisite: consent of instructor. Preparation of research data and writing of M.A. thesis. S/U grading.

## Related Courses in Other Departments

**Anthropology** M154. Women in Culture and Society  
167. Urban Anthropology  
175P. Civilizations and Cultures of Southeast Asia  
175Q. Civilizations of South Asia  
177. Cultures of the Pacific  
231. Asian Americans: Personality and Identity  
274. Cultures of the Pacific Islands

**Architecture and Urban Planning** 197. Planning for Minority Communities

251. Planning for Multiple Publics  
256. Social Impact Analysis  
258. Urban Morphology

**Education** 204D. Minority Education in Cross-Cultural Perspective

253G. Seminar: The Asian American and Education

**English** M102. Asian American Literature

M260A. Topics in Asian American Literature

**Film and Television** 128. Media and Ethnicity

**Geography** 142. Population Geography

144. Ethnicity in the American City

**History** M153. The U.S. and the Philippines

154A-154B. U.S. Urban History

155A-155B. American Working Class Movements

160. The Immigrant in America

161. Asians in American History

163. History of California

184. 20th-Century China

187C. Japanese History: Modern, 1868 to the Present

200H. Advanced Historiography: U.S.

201H. Topics in History: U.S.

245. Colloquium: U.S. History

252A-252B. Seminars: Recent U.S. History to 1930

254A-254B. Seminars: U.S. Social and/or Intellectual History

256A-256B. Seminars: American Diplomatic History

257A-257B. Seminars: U.S. Urban History

258A-258B. Seminars: Working Class History

259A-259B. Seminars: Social History of Women in the U.S.

263A-263B. Seminars: History of the American West

M264. History of American Education

282A-282B. Seminars: Chinese History

285A-285B. Seminars: Modern Japanese History

**Library and Information Science** 111D. Ethnic Groups and their Bibliographies: Asian American History and Culture

**Political Science** 135. International Relations of China

136. International Relations of Japan

M147A. Chicano/Latino Politics

M147B. Minority Group Politics

159. Chinese Government and Politics

160. Japanese Government and Politics

C242. Chinese and East Asian Studies

C243. Japanese and Western Pacific Studies

**Psychology** 175. Community Psychology

225. Seminar: Critical Problems in Social Psychology

M228A. Proseminar: Political Psychology

M228B. Seminar: Political Psychology

297. Issues in Social Development of the Minority Child

**Sociology** 156. Ethnic and Status Groups

158. Urban Sociology

160. Intergroup Conflict and Prejudice

188. Comparative Social Institutions of East Asia

234. Sociology of Community Organization

259. Social Structure and Economic Change: Historical and Comparative Perspectives

260. Economy and Society

261. Ethnic Minorities

M262. Selected Problems in Urban Sociology

276. Selected Topics in Sociology of East Asia

291. Moral Solidarity in Communities

**Theater** 102E. Theater of Non-European World

202R. Seminar: East Asian Theater

202S. Seminar: South Asian Theater

202T. Seminar: Southeast Asian Theater

# Astronomy

8979 Math Sciences, (310) 825-4434

## Professors

Eric E. Becklin, Ph.D.  
David B. Ciine, Ph.D.  
Ferdinand Coroniti, Ph.D.  
Michael A. Jura, Ph.D.  
Matthew Malkan, Ph.D.  
Ian McLean, Ph.D.  
Mark Morris, Ph.D., *Chair*  
William I. Newman, Ph.D.  
Roger K. Ulrich, Ph.D.  
Edward L. Wright, Ph.D.  
Benjamin Zuckerman, Ph.D.  
Lawrence H. Aller, Ph.D., *Emeritus*  
Mirek Plavec, Ph.D., *Emeritus*  
Daniel M. Popper, Ph.D., *Emeritus*

## Associate Professor

Jean L. Turner, Ph.D.

## Scope and Objectives

Astronomy, the oldest science, has now become a meeting place of nearly all physical sciences. It is difficult for any educated person to escape the awe and wonder of such things as the nature of the other planets, the likelihood of black holes in space, the origin and future of the universe, and the possibility of life elsewhere.

The Astronomy Department, therefore, has several educational missions: to develop skills in graduate students which will enable them to make contributions at the frontier of astronomical research, to prepare undergraduate majors for entry into a graduate program, and to provide insight and understanding for nonmajors and nonscience students.

Graduate training of future astronomers, up to the Ph.D. level, is the department's first responsibility. Applicants must have solid backgrounds in physics and mathematics. The program provides training in both theoretical and observational astronomy; its strengths, at present, are in solar physics, stellar structure and evolution, magnetohydrodynamics, gaseous nebulae and interstellar medium, infrared instrumentation, galaxies, quasars, and observational and theoretical cosmology.

The department's second responsibility is to the undergraduate astrophysics major who hopes for a career in astrophysics. Some Bachelor of Science degree recipients go on to graduate work; some opt for teaching careers, for which their training in physics, astrophysics, and mathematics is most useful; still others find excellent jobs in industry, where their broad background in physical science with a specialty in astrophysics makes them particularly valuable (especially in computer science, space, and aeronautical fields).

## Classes for Nonmajors

The department offers general courses to all University students, including those who are not science oriented.

The Astronomy 2A-2B two-term sequence covers the material in courses 3, 4, and 6. You may take one sequence or the other, but not both.

Astronomy 3 is the fundamental one-term course for students who do not major in physical sciences and should be taken in the first or second year. If you had an astronomical introductory course in high school, you should take either courses 2A-2B, or 3H.

Astronomy 4, 5, and 6 develop the topics covered in course 3 to somewhat greater depths. They use more mathematics but are still aimed at nonscience majors. Course 4 details the stars and stellar systems; course 5 concentrates on the problem of life in the universe; course 6 discusses endpoints of stellar evolution and the structure and evolution of the universe. These three courses may be taken in any order by students with a grade of C or better in course 3, or whose astronomical knowledge is on a similar level.

Students who have had at least two courses in high school algebra and one course in trigonometry are advised to take, instead of Astronomy 3, the parallel honors course, Astronomy 3H. Declared or potential majors in astrophysics or in physical sciences should take course 3H if they need an elementary introductory course in astronomy.

Astronomy 81 and 82 are general survey courses recommended for science majors in their second year. They systematically introduce astrophysics and require a good background in physics and mathematics (at least two terms of the Physics 8 series and two terms of the Mathematics 31/32 series).

Students of junior and senior standing in physics or related sciences are invited to select any of these courses: 115, 117, 127, 140, 180.

## Bachelor of Science in Astrophysics

### Preparation for the Major

*Required:* Astronomy 81, 82, Physics 8A/8AL, 8B/8BL, 8C/8CL, 8D/8DL, 8E, Mathematics 31A, 31B, 32A, 32B, 33A, 33B, Program in Computing 3 or 10A. *Recommended:* Astronomy 3H, Chemistry and Biochemistry 11A. Systematic study of astrophysics should begin with Astronomy 81 and 82, taken in the second year.

### The Major

*Required:* Astronomy 115, 117, 127, 140, 180; Physics 105A, 105B, 110A, 110B, 115A, 115B, 131. *Recommended:* Physics 108, 112, 123, 124, 132.

## Honors Program

Senior majors in astrophysics with a 3.4 grade-point average in all astronomy, mathematics, and physics courses are eligible for the honors program in astrophysics. In addition to completing all courses required for the major, you must complete two terms of Astronomy 199. To receive honors and highest honors at graduation, your grade-point average must remain at 3.4 or better, and your work in course 199 must reflect original research and be accepted by the departmental honors committee.

## Graduate Study

### Admission

The basic requirement for admission is a bachelor's degree in physics or astronomy. Students in closely related fields (e.g., mathematics or chemistry) may be admitted at the discretion of the department. All students who apply should submit at least three letters of recommendation and take the Graduate Record Examination (GRE) General Test and Subject Test in Physics. For further information, contact the Graduate Adviser, Department of Astronomy, 8979 Math Sciences, UCLA, Los Angeles, CA 90024-1562.

New students and those who have not been admitted to candidacy for the Ph.D. should consult with the graduate adviser at the beginning of Fall Quarter to determine a program for the year.

## Master of Science in Astronomy

### Course Requirements

Nine courses are required for the master's degree, of which at least five must be at the graduate level in astronomy (excluding Astronomy 200). The B segments of the graduate multiple-term courses (Astronomy 204B, 208B, 217B, 219B, 227B, 230B) count as 1.5 courses each for the purpose of receiving degree credit. Courses taken in the 300 or 500 series may not be applied toward the total course requirement or the graduate course requirement.

### Comprehensive Examination Plan

To receive the master's degree, you must obtain at least a B average in all the departmental written comprehensive examinations taken. The examinations are divided into sections, with one section for each course in the A or B series that you may apply toward the M.S., M.A.T., or Ph.D. requirements. The examination is scheduled at the time the final examination for the course would normally be scheduled and is letter graded. You may repeat failed courses for credit but may not repeat the departmental examinations for departmental credit.

## Master of Arts in Teaching

The department is not admitting students to the program at this time.

### Course Requirements

Nine courses are required for the academic portion of the M.A.T. program. They must include at least five graduate courses in astronomy (excluding Astronomy 200), mathematics, or physics, or 100- or 200-series courses in education required for the instructional credential. The B segments of the graduate multiple-term courses (Astronomy 204B, 208B, 217B, 219B, 227B, 230B) count as 1.5 courses each for the purpose of receiving degree credit. Although it does not count for degree credit, Physics 370 is also required. Courses taken in the 300 or 500 series may not be applied toward the total course requirement or the graduate course requirement.

In order to obtain a secondary credential with the M.A.T. in Astronomy, additional courses in education, including supervised teaching, should be taken.

### Comprehensive Examination Plan

This plan is the same as for the M.S. degree.

## Ph.D. in Astronomy

### Course Requirements

Required for the degree are Astronomy 200, 204A, 208A, 217A, 219A, 227A, 230A; at least four courses from 204B, 208B, 217B, 219B, 227B, 230B; and at least two courses (projects) from 204C, 208C, 217C, 219C, 227C, 230C. You are required to take course 250 each term in residence.

### Teaching Experience

Before receiving a Ph.D., you are required to spend at least three terms as a teaching assistant at UCLA or have equivalent experience elsewhere.

### Comprehensive Examinations

The departmental written comprehensive examinations are the same as described under the M.S. degree. To be qualified to go on to the Ph.D., you must receive a minimum score on these examinations.

After the written comprehensive examinations are completed, you must then fulfill the normal University requirements for a dissertation and pass the University Oral Qualifying Examination.

### Projects

During the Fall Quarters of your second and third years, you are expected to complete a research project. You should work closely with one of the staff both when the project subject is selected and throughout the course of the work. The project may be a continuation of

work begun during the preceding Spring Quarter; the goals of the project should be selected to reflect the amount of work completed in the Spring Quarter.

Evaluation of the project is based as much on the quality of the written report as on the quality of the research itself. The project report should include statements of the project goals, the relationship of the project to broader issues in astronomy, the techniques selected to attack the project problem, and the reasons for this choice. If the project is original and interesting, but incomplete, you are encouraged to complete it later, but the grade assigned is based on the portion completed by the end of the Fall Quarter.

### Final Oral Examination

You must pass a final examination after completing your dissertation.

## Lower Division Courses

**2A-2B. Introduction to the Physical Universe.** Lecture, three hours; discussion, one hour. Thorough introductory survey of astronomy for students not planning to major in physical sciences. Same topics as course 3 but in greater depth, with emphasis on physical reasoning. **2A.** Planets and Stars; **2B.** Galaxies and Cosmology. Prerequisite: course 2A with a grade of C or better. Mr. Malkan

**3. Astronomy: Nature of the Universe.** Lecture, three hours; discussion, one hour. Not open to students with credit for or currently enrolled in course 3H or 81 or 82. No special mathematical preparation required beyond that necessary for admission to the University in freshman standing. Course for general University students, normally not intending to major in physical sciences, on development of ideas in astronomy and what has been learned of the nature of the universe, including recent discoveries and developments. (F,W,Sp)

**3H. Introductory Astronomy and Astrophysics.** Lecture, three hours; discussion, one hour. Not open to students with credit for or currently enrolled in course 3. Introduction to astronomy and astrophysics for freshmen who are seriously interested in science. Requires ability to understand mathematical and physical concepts, but high school algebra and trigonometry classes provide sufficient qualification. Particularly recommended for declared or potential majors in astrophysics or in physical and mathematical sciences. Mr. Morris (F)

**4. Universe of Stars and Stellar Systems.** Lecture, three hours; discussion, one hour. Prerequisite: course 3 or 3H or equivalent. Essentially nonmathematical course for general University students with previous introduction to astronomy; sequel to course 3, dealing in greater detail with stars and stellar systems. Various observed types of stars in relation to their internal structure and evolutionary state. Interacting binary stars, pulsating stars, explosive stars (novae and supernovae). Mass loss from stars, stellar wind. Galactic and planetary nebulae and their relation to stars. Interstellar medium. Initial stages of stellar evolution (protostars, T Tauri stars) and final stages (degenerate and collapsed stars). Stellar systems from clusters to galaxies. Mr. Plavec (F)

**5. Life in the Universe.** Prerequisite: prior introduction to astronomy or consent of instructor. Life on Earth and prospects for life elsewhere in the context of the evolution of the universe from the simple to complex. Course material primarily from astronomy and biology but includes some chemistry, geology, and physics. Selected topics treated in some depth, but with little or no formal mathematics.

Mr. Zuckerman (W)

**6. Cosmology: Our Changing Concepts of the Universe.** Lecture, three hours; discussion, one hour. Prerequisite: course 3 or 3H or equivalent. Essentially nonmathematical exposition of our ideas about the structure and evolution of the universe. Historical development of ideas up to the present time. Problem of cosmic center and cosmic edge. Space and time. Curvature of space. General relativity. Black holes. Expanding universe and cosmological redshift. Early stages of the universe, Big Bang, current ideas of the inflationary universe. Mr. Malkan, Mr. Wright (Sp)

**81. Astrophysics I: Stars and Nebulae.** Lecture, three hours; laboratory, one hour. Prerequisites: Mathematics 31A, 31B, and Physics 8A, or equivalent, or consent of instructor. Open to qualified sophomore and upper division students. Survey of our knowledge about stars: their distances, masses, luminosities, temperatures, and interrelations between these parameters. Methods and importance for astrophysics. Variable stars. Planetary and gaseous nebulae. Mr. Morris, Mr. Plavec (W)

**82. Astrophysics II: Stellar Evolution, Galaxies, and Cosmology.** Lecture, three hours; discussion, one hour. Prerequisites: Mathematics 31A, 31B, Physics 8A, or equivalent. Recommended: course 81, Physics 8B, 8C. Open to qualified sophomore and upper division students. Basic principles of stellar structure and evolution. Red giants, white dwarfs, novae, supernovae, neutron stars, and black holes. Pulsars and galactic X-ray sources. Milky Way galaxy and the interstellar medium. Extragalactic astronomy, galaxy clustering, active galactic nuclei, and quasars. Introduction to cosmology: Hubble law, thermal history of the Big Bang, and earliest moments of the universe. Mr. Coroniti, Mr. Malkan (Sp)

## Upper Division Courses

**115. Statistical Mechanics and Its Application to Astrophysics.** Lecture, three hours. Prerequisites: Mathematics 31A, 31B, 32A, 32B, 33A, 33B, Physics 8A, 8B, 8C, 8D. Particle distributions, partition functions, black body radiation, Saha equation, degeneracy. Applications to stellar atmospheres, stellar interiors, and the interstellar medium. Mr. Jura (W)

**117. Radiation and Fluids in Astrophysics.** Lecture, three hours. Prerequisites: course 115 or equivalent and junior standing in astrophysics or physics, or consent of instructor. Emission and absorption of radiation by matter, spectroscopy, spectral lines, and radiative transfer. Hydrodynamics and shock waves. Applications to stars, to interstellar and intergalactic media, and to the early universe. Mr. Jura, Mr. Morris (Sp)

**127. Stellar Atmospheres, Interiors, and Evolution.** Lecture, three hours. Prerequisite: senior standing in astrophysics or physics or consent of instructor. Recommended: courses 115, 117. Physical conditions in stellar interiors. Energy production in stars. Stellar evolution from star formation through normally observed stages to white dwarfs, neutron stars, and black holes. Novae, supernovae, other variable stars, chromospheres and coronae of sun and stars. Evolution of binary stars. Analysis of stellar atmospheres. Mr. Plavec, Mr. Ulrich (Sp)

**140. Stellar Systems and Cosmology.** Lecture, three hours. Prerequisite: senior standing in astrophysics or physics or consent of instructor. Properties of star clusters and galaxies, with particular emphasis on Milky Way galaxy. Clusters and superclusters of galaxies. Extragalactic distance scale. Quasars and active galaxies. Topics in cosmology, including expansion of the universe, microwave background, galaxy formation from primordial fluctuations, and observational constraints on the Big Bang. Mr. Morris, Mr. Wright (W)

**180. Astrophysics Laboratory.** Lecture, two hours; laboratory, four hours. Prerequisites: junior or senior standing in astrophysics, physics, or a related field, consent of instructor. Lectures cover statistical methods in astrophysics, one- and two-dimensional random processes, and numerical methods. Laboratory experiments involve radio astronomy, interferometry, narrowband solar imaging, and visual photometry. Emphasis on use of computers for automatic collection of data and for processing two-dimensional astronomical images. Mr. McLean, Mr. Wright (F)

**199. Special Studies (2 or 4 units).** Prerequisites: senior standing in astrophysics or physics (with an outstanding record), consent of instructor. Special studies with an individual faculty member.

## Graduate Courses

Prerequisite to all graduate courses is consent of instructor. Courses 204A through 230C are offered in alternate years and consist of three terms according to the following scheme: level A (Winter Quarter, four units) — a basic survey course presenting the minimum knowledge in the field expected of all students who wish to obtain the Ph.D., but who do not necessarily plan to specialize in the field covered by the course; level B (Spring Quarter, six units) — advanced level for those considering the possibility of taking up a research project in the field; level C (Fall Quarter, following academic year, 10 units) — individual research projects supervised by the instructor in the form of a laboratory. Course 240 is equivalent to the B courses.

**200. Introduction to Graduate Study of Astronomy.** Required of all new graduate students. Survey of various fields of astronomy and astrophysics; first acquaintance with working methods and with department. Survey of basic astronomical nomenclature; background in physics and mathematics outlined as required in graduate courses. Mr. Plavec

**204A-204B-204C. Observational Astronomy (4 units, 6 units, 10 units).** Star catalogs and charts. Radiation measurements, photoelectric photometry, and solid-state detectors. Radio and infrared techniques. Spectroscopic observations. Includes laboratory work. Mr. McLean, Mr. Ulrich, Mr. Wright

**208A-208B-208C. Interstellar Medium (4 units, 6 units, 10 units).** Dynamics and physics of interstellar gas and dust. Radio observations of interstellar medium. Diffuse and planetary nebulae. Magnetic fields in space. Star formation. Topics in high-energy astrophysics. Mr. Jura, Ms. Turner, Mr. Zuckerman

**217A-217B-217C. Stellar Photospheres (4 units, 6 units, 10 units).** Physics of stellar photospheres and radiative transfer. Continuous and line spectra of stars. Chemical abundances in stars. Stars with extended and unstable atmospheres. Mr. Plavec, Mr. Ulrich

**219A-219B-219C. Stellar Systems (4 units, 6 units, 10 units).** Statistical astronomy. Distance determination. Stellar motions and populations. Stellar dynamics. Structure of the galaxy. Galaxies and clusters of galaxies. Distribution of matter in space. Cosmology. Mr. Malkan, Mr. Wright

**227A-227B-227C. Stellar Structure and Evolution (4 units, 6 units, 10 units).** Structure and evolution of stars. Stellar energy sources and problems of nucleosynthesis. Theory of variable stars. Evolution of and mass exchange in binary stars. Final state of stellar evolution and degenerate stars. Supernova processes. Practical computation of stellar structure and evolution. Mr. Plavec, Mr. Ulrich, Mr. Zuckerman

**230A-230B-230C. High-Energy Astrophysics (4 units, 6 units, 10 units).** High-energy radiation processes. Observational techniques of X-ray and gamma ray astronomy. Theory and observational results of X-ray and gamma ray sources, pulsars, radio galaxies, and quasars. Mr. Coroniti, Mr. Wright

**240. Modern Problems in Astronomy and Astrophysics.** Open to qualified graduate students in astronomy and in related fields (physics, atmospheric sciences, Earth and space sciences). Special topics offered by distinguished visiting professors. May be repeated for credit.

**250. Seminar: Current Astronomical Research (2 units).** Required of all graduate students. Current astronomical problems. S/U grading. (F,W,Sp)

**M285. Origin and Evolution of Solar System.** (Same as Earth and Space Sciences M285.) Dynamical problems of solar system; chemical evidences from geochemistry, meteorites, and solar atmosphere: nucleosynthesis; solar origin, evolution, and termination; solar nebula, hydromagnetic processes, formation of planets and satellite systems. Content varies from year to year. May be repeated for credit. S/U grading. Mr. Newman (Sp)

**296A-296Z. Seminars: Research Topics in Astronomy (2 to 4 units each).** Discussion, two hours. Prerequisite: consent of instructor. Advanced study and analysis of current topics in astronomy. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. S/U grading.

**296A.** Active Galactic Nuclei. Mr. Malkan

**296B.** Solar Physics. Mr. Ulrich

**296C.** Infrared Instrumentation. Mr. Becklin, Mr. McLean

**M297. Research Tutorial: Astroparticle Physics (2 or 4 units).** (Same as Physics M297.) Lecture, one hour; discussion, two hours. Required of each graduate student doing research in this field. Seminar and discussion by faculty, postdoctoral fellows, and graduate students on topics of current interest in astroparticle physics. May be repeated for credit. S/U grading. Mr. Becklin, Mr. Cline

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

The following courses may be repeated at the discretion of the department:

**596A. Directed Individual Studies (4 to 10 units).**

**596L. Advanced Study and Research at Lick Observatory (4 to 12 units).** Intended for graduate students who require observational experience, as well as those working on observational problems for their thesis. Mr. Kraft

**599. Ph.D. Research and Writing (10 to 12 units).**

## Atmospheric Sciences

7127 Math Sciences, (310) 825-1217, Fax (310) 206-5219

### Professors

Akio Arakawa, D.Sc. (*Atmospheric Dynamics*)

Michael Ghil, Ph.D. (*Climate Dynamics*)

Carlos R. Mechoso, Ph.D. (*Atmospheric Dynamics*)

Richard M. Thorne, Ph.D. (*Atmospheric Physics*)

Richard Turco, Ph.D. (*Atmospheric Chemistry*)

Sekharipuram V. Venkateswaran, Ph.D.

(*Atmospheric Physics*)

Roger M. Wakimoto, Ph.D. (*Atmospheric Dynamics*)

Michio Yanai, D.Sc. (*Atmospheric Dynamics*)

James G. Edinger, Ph.D., *Emeritus*

George L. Siscoe, Ph.D., *Emeritus*

Morton G. Wurtele, Ph.D., *Emeritus*

### Associate Professor

J. David Neelin, Ph.D. (*Atmospheric Dynamics*)

### Assistant Professors

Warren Blier, Ph.D. (*Atmospheric Dynamics*)

Robert Fovell, Ph.D. (*Atmospheric Dynamics*)

### Adjunct Professor

David Halpern, Ph.D. (*Physical Oceanography*)

### Adjunct Assistant Professor

Jeffrey Lew, Ph.D. (*Cloud Physics*)

## Scope and Objectives

The atmospheric sciences present a wide variety of problems of compelling scientific interest and increasing social concern. This is exemplified by efforts to improve air quality, depredations caused by severe storms and floods, attempts to control or modify weather phenomena, problems of long-range weather forecasts and climate change, and expanding scientific frontiers into our outer atmosphere and atmospheres of other planets.

The department offers a broad curriculum in dynamic and synoptic meteorology, atmospheric physics and chemistry, and upper atmosphere and space physics.

The Bachelor of Science degree qualifies students for entry-level technical positions or represents valuable background for training in other professions. Master of Science and Ph.D. degree holders work in universities, research centers, laboratories, and government services and, increasingly, in the rapidly burgeoning private sector.

## Bachelor of Science Degree

### Preparation for the Major

*Required:* Atmospheric Sciences 2A or 6A, 3A, Chemistry and Biochemistry 11A, Mathematics 31A or 31AQ, 31B, 32A, 32B, 33A, 33B, Physics 8A/8AL, 8B/8BL, 8C/8CL, 8D/8DL, Program in Computing 3.

### The Major

*Required:* Atmospheric Sciences 104A, 104B, 104C, C105, 161; two courses from Atmospheric Sciences CM140, C141, C142, 143, 144, C152, C154, C162; two courses from Chemistry and Biochemistry 11B, 11C, 103, 110A, 110B, 113A, C113B, Mathematics 115A, 115B, 132, 135A, 135B, 136, 145, 146, M150A, 150B, Physics 110A, 110B, M122, 123, 131, 132, Statistics 154A, 154B. *Recommended:* Four units of Atmospheric Sciences 198 for students preparing for a career in the operational meteorology field.

Students preparing for graduate studies in atmospheric chemistry should take Chemistry and Biochemistry 11B, 103, Mathematics 115A, 135A, 136, Physics 8E, 131, 132; students preparing for graduate studies in upper atmosphere and space physics should take Mathematics 115A, 135A, Physics 8E, 110A, 110B, M122; students preparing for graduate studies in atmospheric dynamics and physics should take Atmospheric Sciences CM140, C141, C142, Mathematics 115A, 135A, 136, 145, Physics 8E, 131, 132.

## Graduate Study

The Department of Atmospheric Sciences offers the M.S., C.Phil., and Ph.D. degrees.

### Admission

There are no admission requirements in addition to University minimum requirements and no application form in addition to the one used by UCLA Graduate Application Processing. Three letters of recommendation are required. For departmental brochures and information, write to Department of Atmospheric Sciences, 7127 Math Sciences, UCLA, Los Angeles, CA 90024-1565. In addition to students holding bachelor's degrees in meteorology or atmospheric sciences, graduates with degrees in related disciplines — astronomy, chemistry, engineering, geophysics, mathematics, oceanography, and physics — are encouraged to apply for graduate standing in the department. Programs are arranged by consultation between the student and the department's graduate advisers, and considerable flexibility is maintained so that maximum advantage may be taken of the candidate's previous education.

### Major Fields or Subdisciplines

Dynamic and synoptic meteorology; atmospheric physics and chemistry; upper atmosphere and space physics.

## Master of Science Degree

### Course Requirements

A total of nine courses must be completed, five of which must be in the 200 or 500 series. You must also attain a grade of B (3.0) or better in one course in each of two fields other than your field of specialization. Atmospheric Sciences C200A is required of all students without formal background in fluid dynamics, while course C200B is required of all students without formal background in atmospheric sciences. Major field requirements are as follows: *atmospheric physics and chemistry* — courses M203A, C203B, 203C; *dynamic and synoptic meteorology* — courses C201A, 201B, 201C; *upper atmosphere and space physics* — courses C205A, 205B, 205C.

Only one 500-series course (four units) may be applied toward the minimum graduate course requirement for the M.S. degree.

## Comprehensive Examination Plan

The comprehensive examination is based on selected coursework and is conducted at the end of Fall and Spring Quarters. It is composed of two parts — one written, one oral. Grading of the examination is based on a 4.0 scale, with a 3.0 required for a pass at the M.S. level, and a 3.5 or better to continue toward the Ph.D. You are permitted two attempts to obtain the requisite grade either for termination at the M.S. level or for continuation toward a Ph.D. You are encouraged to take the examination as soon as possible. You must, however, attempt the examination by the end of your first two years of study and, if necessary, retake the examination at the earliest available time.

Contact the department for the specific examination requirements of the three major fields.

The special oral examination, conducted by a three-member departmental guidance committee, is based on an individual list of topics which you select in consultation with the guidance committee members. The list should represent the equivalent of three advanced courses (one of which may be 596) in your area of research specialization.

### Thesis Plan

If you have a grade-point average of 3.5 or better, you may petition the department to obtain the M.S. by writing an original thesis. The petition must be received by the graduate advisers at least one year before you complete the degree (at the end of your first year of study). Provided you maintain a high academic standard in coursework, the accepted thesis may be used instead of the comprehensive examination for continuation toward the Ph.D. program.

## Ph.D. Degree

### Course Requirements

Students entering the department with an M.S. degree have no specific course requirements other than Atmospheric Sciences 270 in which you must present a formal seminar attended and graded by all faculty members. The graduate advisers may, at their discretion, prescribe courses in areas in which they deem students to have insufficient background to help them in preparing to pass the comprehensive examination.

### Teaching Experience

There is no formal requirement for teaching experience, but it is strongly encouraged, and approximately 65 percent of our graduate students serve as teaching assistants for one or more terms.

### Qualifying Examinations

If you selected the M.S. comprehensive examination plan, you must also take an in-depth oral examination in your area of research specialization. A doctoral committee is appointed

to conduct the University Oral Qualifying Examination on your selected dissertation topic and related areas, and the final oral examination which is required of all students. Each of these examinations must be passed in no more than two attempts.

## Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

## Final Oral Examination

This examination is required of all students.

## Lower Division Courses

**1. Introduction to Weather Maps and Weather Forecasting.** Lecture, three hours. Introduction to weather maps and satellite imagery and their use in making a weather forecast. Discussions also include structure of the National Weather Service and services it provides to the general public. Course allows students to make weather forecasts for Los Angeles and one city east of the Rocky Mountains.

**2. Air Pollution.** Lecture, three hours; discussion, one hour. Causes and effects of high concentrations of pollution in the atmosphere. Topics include nature and sources of gaseous and particulate pollutants, their transport, dispersion, modification, and removal, with emphasis on atmospheric processes on scales ranging from individual sources to global effects; interaction with biosphere and oceans; stratospheric pollution.

Mr. Cassmassi (Sp), Mr. Lew (F), Mr. Turco (W)

**2A. Air Pollution (5 units).** Lecture, three hours; discussion, three hours. Prerequisite: major in physical sciences, life sciences, or engineering, or other majors who have completed Physics 6B and Mathematics 3A, or consent of instructor. Course for majors parallel to course 2; discussion section includes use of calculus. Discussion topics include composition of the atmosphere, air pollution, depletion of stratospheric ozone layer, global geochemical cycles, global greenhouse warming, polar ozone hole, nuclear winter.

Mr. Lew (F)

**3. Introduction to the Atmospheric Environment.** Lecture, three hours; discussion, one hour. Nature and causes of weather phenomena, including winds, clouds, rain, lightning, tornadoes and hurricanes, solar and terrestrial radiation; phenomena of the higher atmosphere; ionosphere and auroras; causes of air pollution; proposed methods and status of weather modification.

Mr. Lew (W), Mr. Neelin (Sp), Mr. Wakimoto (F)

**3A. Introduction to the Atmospheric Environment (5 units).** Lecture, three hours; discussion, three hours. Prerequisite: Physics 8B. Course for majors parallel to course 3; discussion section includes use of calculus. Discussion topics include atmospheric thermodynamics, extratropical synoptic-scale disturbances, atmospheric aerosol and microphysical processes, clouds and storms, radiative processes, atmospheric dynamics.

Mr. Wakimoto (F)

**4. California Weather and Climate.** Lecture, three hours; discussion, one hour. Prerequisite: course 3 or 3A or equivalent or consent of instructor. Sequel to course 3 dealing in greater detail with atmospheric phenomena relevant to the weather of California, and nature of weather and climate of various regions of the state. Topics include extratropical cyclones and fronts, thunderstorms, severe weather, sea and land breezes, Santa Ana winds, low-level temperature inversions, air pollution, climate change, and discussion of present weather.

**5. Climates of Other Worlds.** Lecture, three hours; discussion, one hour. Introduction to atmospheres of planets and their satellites in the solar system using information obtained during the recent planetary exploration program. Elementary description of origin and evolution of atmospheres on the planets. Climates on the planets, conditions necessary for evolution of life, and its resulting effect on planetary environment. Mr. Thorne (W)

**6. Climate and Climatic Change.** Lecture, three hours; discussion, one hour. Introduction to physical causes of climate, classification of climate, and global distribution of climate types. Description of climate changes over time scales ranging from lifetime of Earth to el niño events. Discussion of causes of climatic change (e.g., long-term steady increase in solar luminosity, short-term fluctuations in solar luminosity, changes in Earth's orbit, changes in atmospheric composition, volcanoes, anthropogenic changes such as increased CO<sub>2</sub> and nuclear war). State of the art in modeling and predicting climate. Mr. Mechoso (Sp)

**6A. Climate and Climatic Change (5 units).** Lecture, three hours; discussion, three hours. Prerequisites: atmospheric sciences major, Physics 8D. Course for majors parallel to course 6; discussion section includes use of calculus. Discussion topics include atmospheric circulation, oceanic circulation, greenhouse effect, ice ages, ocean/atmosphere interactions, ozone hole, past climates, climate prediction. Mr. Mechoso (Sp)

**8. Clouds, Rain, and Storms.** Lecture, three hours; discussion, one hour. The raindrop and the ice crystal. Relation of meteorological conditions to cloud types. Precipitation mechanisms from clouds. Different scales of atmospheric cloud organization. Description and dynamics of spectacular weather systems, ranging from tornadoes to hurricanes. Severe weather forecasting.

**88. Lower Division Seminar.** Seminar, three hours. Variable topics; consult *Schedule of Classes* or department for topics to be offered in a specific term. P/NP or letter grading.

**94. Survey of Atmospheric Sciences (2 units).** Prerequisite: undergraduate physical sciences major. General introductory seminar on current research topics in atmospheric sciences. Students are directed in a library research project and prepare a brief class presentation/term paper under supervision of participating faculty member. P/NP or letter grading.

## Upper Division Courses

**104A. Atmospheric Thermodynamics.** Lecture, three hours; discussion, two hours. Prerequisites: Mathematics 32B, Physics 8B. Basic thermodynamics, including first, second, and third laws. Atmospheric statics. Dry adiabatic processes. Phase changes of water and moist adiabatic processes. Introduction to cloud microphysics. Gravitational stability. Mr. Neelin (F)

**104B. Introduction to Dynamic Meteorology.** Lecture, three hours; discussion, two hours. Prerequisite: course 104A. Kinematic properties of velocity field; streamlines and trajectories, vorticity and divergence. Equations governing atmospheric motions: equation of motion, equation of mass continuity, thermodynamic energy equation. Static equilibrium, pressure as vertical coordinate. Geostrophic flow. Circulation and vorticity. Quasi-geostrophic motion. Dynamics of extratropical cyclones, baroclinic instability, fronts. Mr. Yanai (W)

**104C. Introduction to Synoptic Meteorology.** Laboratory, six hours. Prerequisite: course 104B. Weather map analysis. Thermodynamic diagrams. Satellite interpretation. Severe weather forecasting. Isentropic analysis. Mr. Blier (Sp)

**C105. Advanced Synoptic Meteorology.** Lecture, three hours; discussion, one hour. Prerequisite: course 104C or consent of instructor. Structure and analysis of the wave cyclone. Characteristics of frontal zones. Frontogenesis. Diagnosis of vertical velocity; quasi-geostrophic omega equation: derivation, applications, and alternative formulations. Sawyer/Eliassen equation. Diabatic effects on cyclogenesis. Modeling studies. Discussion of current research topics. Concurrently scheduled with course C227. Mr. Blier (F)

**CM140. Introduction to Fluid Dynamics.** (Same as Earth and Space Sciences M140.) Lecture, three hours; discussion, one hour. Corequisite: Physics 131. Equations of fluid motion. Circulation theorems. Irrotational flow. Vortex motion. Rotating frame. Hydrostatic and geostrophic balance. Sound and shock waves. Viscous flow. Concurrently scheduled with course C200A. Mr. Fovell (F)

**C141. Introduction to Geophysical Fluid Dynamics.** Lecture, three hours. Prerequisite: Physics 131 or consent of instructor. Recommended: course CM140. Equations of motion in a rotating frame, with special emphasis on shallow-water model. Potential vorticity. Geostrophic motion. Gravity and Rossby waves. Geostrophic adjustment. Quasi-geostrophic motion. Laplace tidal equation. Kelvin and mixed Rossby gravity waves. Baroclinic instability. Concurrently scheduled with course C201A. Mr. Arakawa (F)

**C142. Introduction to Atmospheric Dynamics and Physics.** Lecture, three hours; discussion, one hour. Prerequisites: Mathematics 32A, Physics 8B. Composition, mean structure, and circulations of the atmosphere. Introduction to atmospheric thermodynamics and cloud physics. Radiative transfer and global energy balance. Structure, evolution, and basic dynamics of extratropical cyclones. Concurrently scheduled with course C200B. Mr. Blier (W)

**143. Physical Oceanography.** Lecture, three hours; discussion, one hour. Prerequisite: Mathematics 3B or 31B. Physical structure of oceans. Observations of ocean currents. Boundary layers. Wind-driven oceanic circulations. Barotropic and thermohaline oceanic circulations. Models of the Gulf Stream. Coastal upwelling. Wind-mixed layers and thermoclines. Surface waves. Tides. Mr. Halpern (W)

**144. Micrometeorology and Air Pollution Meteorology.** Lecture, three hours; discussion, one hour. Prerequisite: course C142. Wind and temperature structure in the surface layer; mesoscale weather and wind systems; turbulence and diffusion; evaporation; transport, diffusion, and transformation of atmospheric contaminants.

**145. Atmospheric Physics.** Lecture, three hours; discussion, one hour. Prerequisites: Physics 8E, 131. Physics of gases; properties and behavior of cloud particles; atmospheric electricity; solar and terrestrial radiation; atmospheric waves, scattering, visibility, and optics; remote sensing.

**C152. Physics of Clouds and Precipitation.** Lecture, three hours. Recommended (but not prerequisite): Physics 110A. Thermodynamics of moist air, phase changes of water substance, latent heats, moist adiabatic processes; elementary cloud dynamics; cloud microstructure; microphysics of cloud droplets, nucleation phenomena, droplet hydrodynamics, coalescence and precipitation; ice physics; charge separation mechanisms; macrostructure of clouds and storms. Concurrently scheduled with course C203B. Mr. Lew (W)

**C154. Introduction to Solar System Plasmas.** (Formerly numbered CM154.) Lecture, three hours; discussion, one hour. Prerequisites: Mathematics 33A and Physics 8D, or consent of instructor. Introduction to basic plasma physical processes occurring in the sun, solar wind, magnetospheres, and ionospheres of planets, using simple fluid (magnetohydrodynamic) models as well as individual particle (radiation belt dynamics) approach. Solar-planetary coupling processes, geomagnetic phenomena, aurora. Concurrently scheduled with course C205A. Mr. Thorne (F)

**161. Numerical Methods in Atmospheric Sciences.** Lecture, two hours; laboratory, three hours. Prerequisites: Mathematics 33B and Program in Computing 3, or consent of instructor. Numerical solutions of problems selected from atmospheric sciences. Matrix inversion. Solution of oscillation, decay, advection, and vorticity equations. Mr. Fovell (Sp)

**C162. Statistics in Atmospheric Sciences.** Lecture, three hours; discussion, one hour. Prerequisite: Mathematics M150A or Statistics M152A or equivalent. Survey of methods used for data analysis in atmospheric sciences, with emphasis on practical applications. Methods include linear regression, factor analysis, and cluster analysis. Concurrently scheduled with course C213.

**195. Senior Paper.** Prerequisite: senior standing in atmospheric sciences. Supervised through individual consultation with an appropriate faculty member, students write a research paper on a topic of their own choosing within their area of concentration in the major. May be used for writing honors thesis. (F,W,Sp)

**198. Operational Meteorology (2 units).** Laboratory, six hours. Prerequisites: course 104C, junior or senior standing in atmospheric sciences. Daily contact with weather data and forecasting, satellite and radar data. Introduction to weather forecasting for aviation, air pollution, marine weather, fire weather, and public use. Includes daily weather map discussions and visits to observing, radiosonde, and radar installations. Mr. Blier (Sp), Mr. Wakimoto (F,W)

**199. Special Studies in Meteorology (2 or 4 units).** Prerequisite: consent of instructor. Special individual studies.

## Graduate Courses

**C200A. Introduction to Fluid Dynamics.** (Formerly numbered C200.) Lecture, three hours; discussion, one hour. Corequisite: Physics 131. Equations of fluid motion. Circulation theorems. Irrotational flow. Vortex motion. Rotating frame. Hydrostatic and geostrophic balance. Sound and shock waves. Viscous flow. Concurrently scheduled with course CM140. Mr. Fovell (F)

**C200B. Introduction to Atmospheric Dynamics and Physics.** (Formerly numbered C201.) Lecture, three hours; discussion, one hour. Intended for first-year graduate students with little or no prior background in atmospheric sciences. Composition, mean structure, and circulations of the atmosphere. Introduction to atmospheric thermodynamics and cloud physics. Radiative transfer and global energy balance. Structure, evolution, and basic dynamics of extratropical cyclones. Concurrently scheduled with course C142. Mr. Blier (W)

**C201A. Introduction to Geophysical Fluid Dynamics.** (Formerly numbered C202.) Lecture, three hours. Equations of motion in a rotating frame, with special emphasis on shallow-water model. Potential vorticity. Geostrophic motion. Gravity and Rossby waves. Geostrophic adjustment. Quasi-geostrophic motion. Laplace tidal equation. Kelvin and mixed Rossby gravity waves. Baroclinic instability. Concurrently scheduled with course C141. Mr. Arakawa (F)

**201B. Atmospheric Wave Motions.** (Formerly numbered 210A.) Lecture, three hours. Prerequisite: course C141/C201A. Wave motions in a compressible, stratified, and rotating atmosphere. Acoustic and gravity waves, anelastic and quasi-static approximations. Kelvin/Helmholtz instability. Quasi-static oscillations of a planetary atmosphere. Quasi-geostrophic motions. Baroclinic and barotropic instabilities. Propagation of planetary waves. Mr. Arakawa (W)

**201C. Introduction to Atmospheric Turbulence and Convection.** (Formerly numbered 226.) Lecture, three hours. Prerequisite: course C200A or consent of instructor. Small-scale nonhydrostatic motions in the atmosphere. Introduction to turbulence and thermal convection. Planetary boundary layer, effects of moisture on atmospheric motions, theory of moist convection, cumulus convection. Mr. Yanai (Sp)

**M203A. Introduction to Atmospheric Chemistry.** (Same as Civil Engineering M262A.) Lecture, three hours. Prerequisite for undergraduates: Chemistry 11C. Principles of chemical kinetics, thermochemistry, spectroscopy, and photochemistry; chemical composition and history of Earth's atmosphere; biogeochemical cycles of key atmospheric constituents; basic photochemistry of troposphere and stratosphere, upper atmosphere chemical processes; air pollution; chemistry and climate. (F)

**C203B. Physics of Clouds and Precipitation.** (Formerly numbered 203B.) Lecture, three hours. Thermodynamics of moist air, phase changes of water substance, latent heats, moist adiabatic processes; elementary cloud dynamics; cloud microstructure; microphysics of cloud droplets, nucleation phenomena, droplet hydrodynamics, coalescence and precipitation; ice physics; charge separation mechanisms; macrostructure of clouds and storms. Concurrently scheduled with course C152. Mr. Lew (W)

**203C. Atmospheric Radiation.** Lecture, three hours. Survey of atmospheric radiation and radiative processes; thermal radiation, infrared radiative transfer in atmospheres, energy balance relationships; solar radiation, Rayleigh and Mie scattering, atmospheric optics; radiation climatology, energy balance and climate; remote sensing of atmospheres.

Mr. Venkateswaran (Sp)

**C205A. Introduction to Solar System Plasmas.** Lecture, three hours; discussion, one hour. Introduction to basic plasma physical processes occurring in the sun, solar wind, magnetospheres, and ionospheres of planets, using simple fluid (magnetohydrodynamic) models as well as individual particle (radiation belt dynamics) approach. Solar-planetary coupling processes, geomagnetic phenomena, aurora. Concurrently scheduled with course C154. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department. Mr. Thorne (F)

**205B. Descriptive Solar-Terrestrial Physics.** (Formerly numbered 205C.) Lecture, three hours; discussion, one hour. Solar, interplanetary, magnetospheric, ionospheric, auroral, geomagnetic phenomenological background for studies in space physics. Complements theoretical space physics courses. Contextual understanding and literacy in space physics terminology provided. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department. (W)

**205C. Planetary Upper Atmospheres.** (Formerly numbered 205B.) Lecture, three hours; discussion, one hour. Aeronomy of upper atmospheres of Earth and other planets and some of their satellites — thermospheric structure and morphology, circulations, and disturbances; ionospheres as collisional and magnetized (unmagnetized) plasmas: currents, drifts, and instabilities. Examples of upper atmospheric interaction with lower atmosphere and magnetosphere. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department. (Sp)

## Dynamic and Synoptic Meteorology

**210B. Dynamics of Planetary Circulations.** Lecture, three hours. Prerequisite: course 201B. Interaction between waves and mean zonal and meridional circulations. Vacillation. Regimes of thermally forced planetary circulations and their stability. Frontogenesis. Geostrophic turbulence. Forced planetary waves. Persistent anomalies of atmospheric circulation. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department. Mr. Ghil (Sp)

**212A. Numerical Methods in Geophysical Fluid Dynamics.** Lecture, three hours. Prerequisite or corequisite: course C201A. Basic numerical methods for initial-boundary value problems in fluid dynamics, with emphasis on applications to atmospheric and oceanographic problems. Finite-difference methods and truncation error. Linear and nonlinear computational instability. Computational modes and computational boundary conditions. Nonlinear shallow-water equation model. Spectral methods. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department. Mr. Mechoso (W)

**212B. Numerical Modeling of the Atmosphere I.** Lecture, three hours. Prerequisites: courses 201B and 212A, or consent of instructor. Dynamics of numerical weather prediction and climate models and their computational design. Basic governing equations. Vertical and horizontal coordinates. Quasi-geostrophic and balanced models. Shallow-water equation model. Three-dimensional primitive equation models. Limited-area modeling. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

**212C. Numerical Modeling of the Atmosphere II.** Lecture, three hours. Prerequisite: course 201C or consent of instructor. Formulation of physical processes in numerical weather prediction and climate models. Planetary boundary layer processes. Turbulence closure models. Condensation processes. Parameterization of moist-convective processes. Cloudiness parameterization. Parameterization of gravity wave drag. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

Mr. Arakawa (Sp)

**C213. Statistics in Atmospheric Sciences.** Lecture, three hours; discussion, one hour. Prerequisite: Mathematics M150A or Statistics M152A or equivalent. Survey of methods used for data analysis in atmospheric sciences, with emphasis on practical applications. Methods include linear regression, factor analysis, and cluster analysis. Concurrently scheduled with course C162. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

**214. Theoretical Climatic Dynamics.** Lecture, three hours. Radiative transfer and energy-balance models (EBMs). Multiple equilibrium climates and their stability. Coupled EBMs of the atmosphere and oceans. Climatic history of our planet. Continuum mechanics of ice sheets and mantle. Oscillatory models of Quaternary glaciation cycles. Transitions from equilibrium to periodic and aperiodic climate behavior. Climatic predictability. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

**216A. Tropical Motions with Moist Processes.** Lecture, three hours. Prerequisite: course 201C. Cumulus convection and the boundary layer in the tropics. Cloud clusters and mesoscale convection systems. Interaction of cumulus convection with large-scale environment. Tropical cyclones. Monsoon meteorology. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

**216B. Wave Motions in the Tropical Atmosphere.** Lecture, three hours. Prerequisite: course 201B. Basic theory of equatorially trapped waves. Observations of tropical wave disturbances. Generation mechanisms of tropical waves. Tropical 30-50 day oscillation. Quasi-biennial and semiannual oscillations. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department. Mr. Yanai (F)

**218. Dynamics of the Atmosphere/Ocean System.** Lecture, three hours. Transfer of properties between atmosphere and ocean; wind-driven ocean currents; coastal upwelling. Air/sea interactions. Effects of oceans on climate. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

Mr. Neelin

**220. Dynamics of the Middle Atmosphere.** Lecture, three hours. Prerequisites: courses C200B, C201A. Structure and composition of the middle atmosphere. Waves in the middle atmosphere, including tides, planetary waves, and gravity waves. Quasi-biennial oscillations. Stratospheric sudden warmings. Semiannual oscillations. Wave-mean flow interactions. Interactions between middle and lower atmosphere. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

**224A. Atmospheric Turbulence.** Lecture, three hours. Kinematics of homogeneous and shear flow turbulence. Surface and planetary boundary layers, including heat transfer and turbulent convection. Survey of field and laboratory observations and their interpretation by theory. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

**M224B. Atmospheric Diffusion and Air Pollution.** (Same as Civil Engineering M262B.) Lecture, three hours. Nature and sources of atmospheric pollution; diffusion from point, line, and area sources; pollution dispersion in urban complexes; meteorological factors and air pollution potential; meteorological aspects of air pollution. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

**C227. Advanced Synoptic Meteorology.** Lecture, three hours; discussion, one hour. Prerequisite: course 104C or consent of instructor. Structure and analysis of the wave cyclone. Characteristics of frontal zones. Frontogenesis. Diagnosis of vertical velocity; quasi-geostrophic omega equation: derivation, applications, and alternative formulations. Sawyer/Eliassen equation. Diabatic effects on cyclogenesis. Modeling studies. Discussion of current research topics. Concurrently scheduled with course C105. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department. Mr. Blier (F)

**228. Mesometeorology.** Lecture, three hours. Prerequisite: consent of instructor. Observations of phenomena with length scales ranging from 20 km to 2,000 km. Topics include polar lows, airmass thunderstorms, multicell storms, supercell tornadoes, gust fronts, downbursts, microbursts, and the dry line. Discussions on design of field project. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department. Mr. Wakimoto (Sp)

**229. Mesoscale Modeling.** Lecture, three hours. Prerequisites: courses 201C and 228, or consent of instructor. Numerical and analytical modeling of convective and mesoscale motions, from shallow heat sources to large complex systems. Model frameworks, assumptions, parameterizations, and solution techniques. Role of modeling efforts in understanding dynamic structure and behavior of systems. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department. Mr. Fovell (W)

## Atmospheric Physics and Chemistry

**230A-230B. Atmospheric Chemistry I, II.** Lecture, three hours. Prerequisite: course M203A or consent of instructor. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

**230A.** Photochemistry of remote troposphere; physical chemistry of surfaces and solutions; precipitation chemistry and acid rain; atmospheric organic chemistry; regional and global biogeochemical cycles; current issues in global change. Mr. Turco

**230B.** Photochemistry of stratosphere and mesosphere; basic ionospheric processes; stratospheric pollution and the ozone layer; physical chemistry of upper atmosphere clouds and aerosols; comparative photochemistry of planetary atmospheres; observational techniques and results. Mr. Turco

**232. Chemical Transport Modeling.** Lecture, three hours. Prerequisites: courses M203A and 230A-230B, or consent of instructor. Equations of tracer transport and chemical kinetics modeling in three dimensions; numerical techniques; coupled simulations of gas-phase and aerosol microphysics and chemistry; computational versus observational results; current problems in tracer modeling. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

**234A-234B. Cloud and Precipitation Physics I, II.** Lecture, three hours. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

**234A.** Prerequisite: course C203B or consent of instructor. Microstructure of atmospheric clouds; structure of the three phases of water substance, including surface effects; thermodynamic theory for equilibrium between the three phases of water substance, including surface effects; theory of homogeneous and heterogeneous nucleation of water drops and ice crystals.

**234B.** Prerequisite: course 234A. Theory of growth and evaporation of water drops and ice crystals by diffusion of water vapor; hydrodynamics of rigid bodies in a viscous medium; hydrodynamics of cloud drops, rain drops, and atmospheric ice particles; growth of cloud drops and atmospheric ice particles by collision.

**240A. Radar Meteorology.** Lecture, three hours. Radar detection of spherical and nonspherical particles; use of radar in studying size distributions of cloud and precipitation particles, precipitation intensity and amount, updraft velocities, horizontal wind speed, and turbulence; radar observations of convective clouds, thunderstorms, tornadoes, hurricanes, squall lines, and fronts; clear air echoes. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

Mr. Wakimoto

**240B. Remote Sensing.** Lecture, three hours. Prerequisites: courses 203C and 240A, or consent of instructor. Theory and techniques of remote sensing; atmospheric spectroscopy; methods based on scattering, absorption, and extinction; passive and active techniques; inversion methods; remote sensing of terrestrial meteorological parameters and trace constituents; remote sensing of surfaces and biosphere; remote sensing of planetary atmospheres. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

Mr. Venkateswaran (F)

**244. Methods of Radiative Transfer.** Lecture, three hours; laboratory, one hour. Prerequisites: courses 203C and 240B, or consent of instructor. Analytical and numerical methods of radiative transfer, pure scattering atmospheres, and Chandrasekhar's solution; discrete ordinates; n-stream representations; exponential sums; Monte Carlo techniques and three-dimensional problems; computational laboratory. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

## Upper Atmosphere and Space Physics

**250A. Solar System Magnetohydrodynamics.** Lecture, three hours. Prerequisite: course C205A or consent of instructor. Derivation of MHD equations with two fluid aspects, generalized Ohm's law, small amplitude waves, discontinuities, shock waves, and instabilities. Applications to statics and dynamics of solar wind and planetary magnetospheres and to solar wind/magnetosphere/ionosphere coupling. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

**250B. Solar System Microscopic Plasma Processes.** Lecture, three hours. Prerequisite: course C205A or consent of instructor. Adiabatic charged particle dynamics; incoherent radiation processes; collective effects in a plasma; propagation characteristics of electrostatic and electromagnetic waves; introduction to resonant interaction between charged particles and plasma waves. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

**256. Ionospheric Electrodynamics.** Lecture, three hours. Ionospheric structure, currents, and electric fields; equatorial and high-latitude ionospheres; ionospheric control of magnetospheric phenomena. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

**257. Radiation Belt Plasma Physics.** Lecture, three hours. Prerequisite: course 250B or consent of instructor. Turbulent plasma instabilities and their relation to satellite observations and magnetospheric structure. Processes responsible for source, loss, and transport of energetic radiation belt particles. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

Mr. Thorne (Sp)

## Special Studies

**270. Seminar: Atmospheric Sciences (2 units).** Lecture, one hour. May be repeated for credit. S/U or letter grading.

**271. Seminar: Atmospheric Dynamics (2 units).** Lecture, one hour. May be repeated for credit. S/U or letter grading.

**M272A-M272B-M272C. Seminars: Climate Dynamics (2 to 4 units each).** (Same as Earth and Space Sciences M270A-M270B-M270C and Geography M270A-M270B-M270C.) Lecture, two hours. Prerequisite: consent of instructor. Archaeological, geochemical, micropaleontological, and stratigraphic evidence for climate change throughout the geological past. Rheology and dynamics of climatic subsystems: atmosphere and oceans, ice sheets and marine ice, lithosphere and mantle. Climate of other planets. Modeling, simulation, and prediction of modern climate on monthly, seasonal, and interannual time scale. May be repeated for credit. S/U or letter grading.

Mr. Ghil

**273. Seminar: Atmospheric Physics (2 units).** Lecture, one hour. May be repeated for credit. S/U or letter grading.

**274. Seminar: Atmospheric Chemistry (2 units).** Lecture, one hour. May be repeated for credit. S/U or letter grading.

Mr. Turco

**M275A-M275B-M275C. Seminars: Space Physics (2 units each).** (Same as Earth and Space Sciences M288A-M288B-M288C.) Lecture, one hour. Problems of current interest concerning particles and fields in space. May be repeated for credit. S/U grading.

**276. Seminar: Mesoscale Processes (2 units).** Seminar, one hour. Selected topics of current research interest in convection, extratropical cyclones, and fronts. May be repeated for credit. S/U or letter grading.

Mr. Wakimoto

**281. Special Topics in Dynamic Meteorology (2 to 4 units).** Individual meetings with instructor to be arranged. Content varies from year to year. S/U grading.

**283. Special Topics in Atmospheric Physics (2 units).** Individual meetings with instructor to be arranged. May be repeated for credit. S/U or letter grading.

**284. Special Topics in Atmospheric Chemistry (2 units).** Individual meetings with instructor to be arranged. May be repeated for credit. S/U or letter grading.

**285. Special Topics in Solar Planetary Relations (2 to 4 units).** Individual meetings with instructor to be arranged. Selected topics of current research interest in solar wind, magnetospheric, or ionospheric physics.

**296A-296K. Advanced Topics in Atmospheric Sciences (2 units each).** Prerequisite: consent of instructor. Advanced study and analysis of current topics in atmospheric sciences. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. S/U grading:

**296A.** Numerical Modeling of the Atmosphere.

Mr. Arakawa

**296B.** Synoptic and Mesoscale Meteorology.

Mr. Blier

**296C.** Numerical Mesoscale Modeling.

Mr. Fovell

**296D.** Climate Dynamics.

Mr. Ghil

**296E.** Numerical Modeling of the Atmosphere and Ocean.

Mr. Mechoso

**296F.** Hierarchical Modeling of Ocean/Atmosphere System.

Mr. Neelin

**296G.** Upper Atmosphere and Space Physics.

Mr. Thorne

**296H.** Recent Advances in Atmospheric Chemistry.

Mr. Turco

**296I.** Upper Atmospheric Dynamics.

Mr. Venkateswaran

**296J.** Experimental Mesoscale Meteorology.

Mr. Wakimoto

**296K.** Tropical Meteorology.

Mr. Yanai

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**596. Directed Studies for Graduate Students (2 to 8 units).**

**597. Preparation for Comprehensive Examinations (2 to 8 units).**

**598. Research and Preparation of M.S. Thesis (2 to 8 units).**

**599. Research for Ph.D. Dissertation (2 to 8 units).**



## Related Courses in Other Departments

**Astronomy** 81, 82, 180

**Biomathematics** 202

**Chemical Engineering** 102, 108A, C240

**Chemistry and Biochemistry** 103, 110A, 110B, C123A-C123B, 215D, 223C, 225

**Civil Engineering** 163

**Computer Science** 10C

**Earth and Space Sciences** M140, 154, 202, 203, 204, 261, 265

**Electrical Engineering** 103, 161, 162A, M185

**Mathematics** 131A-131B, 132, 135A-135B, 136, 141A-141B, 142, 145, 146, M150A-150B, 151, 250C, 265A-265B, 266A, 266B-266C, 267A-267B, 269A-269B-269C, 271A, 271B, 271C, M274A, 274B, 276A-276B, 276C

**Mechanical, Aerospace, and Nuclear Engineering** 103, 131A, 150A, 150B, 192A, 192B, 192C, 250A, 250B, 250C, 251A, 251B, 252A, 252B, 259A

**Physics** 108, 110A, 110B, 112, 115A, 115B, M122, 131, 132, 210A, 210B, 215A, 215B, 222A-222B-222C, 231A, 231B, 231C

**Statistics** M152A, 152B

## Biology

2203 Life Sciences, (310) 825-3481

### Professors

Clifford F. Brunk, Ph.D., *Cochair*

David J. Chapman, Ph.D., D.Sc.

William R. Clark, Ph.D., *Cochair*

Martin L. Cody, Ph.D.

Franz Engelmann, Ph.D.

John H. Fessler, Ph.D.

Arthur C. Gibson, Ph.D.

Robert B. Goldberg, Ph.D. (*Luckman Distinguished Teaching Award*)

Malcolm S. Gordon, Ph.D.

Michael Grunstein, Ph.D.

William M. Hamner, Ph.D.

Ann M. Hirsch, Ph.D.

Harumi Kasamatsu, Ph.D.

James A. Lake, Ph.D.

Judith A. Lengyel, Ph.D.

John R. Merriam, Ph.D.

James G. Morin, Ph.D.

Leonard Muscatine, Ph.D.

Kenneth A. Nagy, Ph.D.

Peter M. Narins, Ph.D. (*Distinguished Teaching Award*)

Park S. Nobel, Ph.D.

Dan S. Ray, Ph.D.

Philip W. Rundel, Ph.D.

Winston A. Salsler, Ph.D.

Larry Simpson, Ph.D.

Charles C. Taylor, Ph.D.

J. Philip Thornber, Ph.D.

Allan J. Tobin, Ph.D.

Elaine M. Tobin, Ph.D.

Eduardo Zeiger, Ph.D.

### Professors Emeriti

David Appleman, Ph.D.

Albert A. Barber, Ph.D.

George A. Bartholomew, Ph.D. (*Distinguished Teaching Award*)

Joseph Cascarano, Ph.D. (*Distinguished Teaching Award*)

Nicholas E. Collias, Ph.D.

Wilbur T. Ebersold, Ph.D.

Eric B. Edney, Ph.D.

Arthur W. Haupt, Ph.D.

Thomas R. Howell, Ph.D.

Thomas W. James, Ph.D.

J. Lee Kavanau, Ph.D.

George G. Laties, Ph.D.

F. Harlan Lewis, Ph.D.

O. Raynal Lunt, Ph.D.

Austin J. MacInnis, Ph.D.

Mildred E. Mathias, Ph.D.

Everett C. Olson, Ph.D.

Bernard O. Phinney, Ph.D.

Charles A. Schroeder, Ph.D.

Richard W. Siegel, Ph.D.

Fritiof S. Sjostrand, Ph.D.

Clara M. Szego, Ph.D.

Henry J. Thompson, Ph.D.

Peter P. Vaughn, Ph.D.

Boyd W. Walker, Ph.D.

Vladimir Walters, Ph.D.

Samuel G. Wildman, Ph.D.

### Associate Professors

Donald G. Buth, Ph.D.

Elma Gonzalez, Ph.D.

Henry A. Hespeneide, Ph.D.

Paul H. O'Laque, Ph.D.

Richard K. Vance, Ph.D.

Blaire Van Valkenburgh, Ph.D.

### Assistant Professors

Renato J. Aguilera, Ph.D.

Utpal Banerjee, Ph.D.

Jeanne M. Erickson, Ph.D.

Robert Gibson, Ph.D.

Volker Hartenstein, Ph.D.

Frank A. Laski, Ph.D.

Dwayne D. Simmons, Ph.D.

Karambir Singh, Ph.D.

### Lecturers

Roger Bohman, Ph.D.

Carolee Caffrey, Ph.D.

W. Jaap Hillenius, Ph.D.

Eric Mundall, Ph.D.

Steve Strand, Ph.D., *Senior*

## Scope and Objectives

Studies in biology touch every aspect of life, and seeking answers to the problems of living organisms is a major challenge to modern biology. To meet this challenge, the Biology Department offers a wide spectrum of undergraduate and graduate instruction in population, organismic, developmental, cell, and molecular biology. All of these subject areas relate in some way to practical problems facing contemporary society, and all influence individual and collective decisions on matters ranging from environmental degradation to viruses and cancer.

The Bachelor of Science degrees combine essential background studies in mathematics, chemistry, and physics with a general introduction to all of the biological subjects, as well as advanced in-depth exposure to some of them. The Master of Arts and Ph.D. degrees provide opportunities for advanced, concentrated study. The Master of Arts degree requires, in addition to specified coursework, completion of either a comprehensive examination or the performance of original research culminating in a thesis. The Ph.D. degree requires independent and innovative research that ultimately results in a dissertation.

## Bachelor of Science in Biology

The Bachelor of Science degree is divided into four areas of concentration which build on similar lower division introductory courses and differ primarily in the upper division requirements. The first area of concentration — general biology — is designed for students who desire exposure to a wide range of biological subjects and for most students who will later seek admission to health sciences-related professional schools. The remaining three areas of concentration — ecology, behavior, and evolution (EBE), marine biology (MB), and plant biology (PB) — provide more specialized instruction and strong preparation for employment or subsequent graduate study in the respective disciplines.

### Prebiology Major

Students who have not completed all the courses required as preparation for the major are considered prebiology majors. After completing those courses with a grade of C- or better in each, you must petition to enter the biology major in the Undergraduate Advising Office, 2312 Life Sciences.

In order to be admitted as prebiology majors, transfer students who have 80 or more units must have completed one year of general chemistry with laboratory, Biology 5, 5L, and 9, or equivalent, and at least one of the following: (1) one year of calculus, (2) one year of calculus-based physics, or (3) two organic chemistry courses with laboratory.

### General Biology Concentration

This concentration is designed for students with a broad interest in biology who desire to pursue careers in a wide range of biological and related fields. It provides excellent background preparation for postgraduate training in medicine and other health sciences, in tracks leading to academic and public service careers in biology, in biological industries, and even in nonbiological careers such as business, agriculture, and law. The concentration emphasis is breadth of training to expose students to all levels of modern biology.

**Preparation for the Major:** Biology 5, 5L, 6, 9 or equivalent; Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL; Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A; Physics 6A, 6B, and 6C, or 8A/8AL, 8B/8BL, 8C/8CL, and 8D/8DL.

**The Major:** Biology 108 or equivalent; one morphology and systematics course (Biology 101A, 101B, 103, 105, 110, 153/153L, or Microbiology and Molecular Genetics 101); one developmental and molecular biology course (Biology 121, 138, C141, 146, or C149); one physiology course (Biology 158, 162, 166, 167, or 170); two additional upper division biology courses; Chemistry and Biochemistry 132A, 132B/132BL, 153A, 153L; four additional up-

per division courses in biology, chemistry, mathematics (except Mathematics 104, 106), microbiology, physics, or from Biomathematics 110, Biostatistics 100B, 100C, Earth and Space Sciences 116, Geography 112.

### Ecology, Behavior, and Evolution (EBE) Concentration

This concentration is appropriate for students preparing for graduate study in ecology, behavior, and evolution. A strong field component involving study in terrestrial and marine locales such as coastal, desert, and mountain environments in California and the Southwest and in the Neotropics is required. This provides suitable background for such fields as environmental biology, animal behavior, conservation, forestry, teaching, museum work, and governmental positions dealing with environmental issues of wide importance and impact.

**Preparation for the Major:** Biology 5, 5L, 6, 9 or equivalent; Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL, 15; Mathematics 31A, 31B, 32A, 32B, 33A; Physics 6A, 6B, and 6C, or 8A/8AL, 8B/8BL, 8C/8CL, and 8D/8DL.

**The Major:** Biology 108 or equivalent; one morphology and systematics course (Biology 101A, 101B, 103, 105, 110, or 152); one physiology course (Biology 162, 166, 167, or 170); three ecology, behavior, and evolution courses (Biology 111, 120, 122, 129, 135); one field quarter consisting of two to four courses from the Field Biology Quarter (FBQ), Marine Biology Quarter (MBQ), or equivalent; additional upper division courses in biology, chemistry, mathematics (except Mathematics 104, 106), microbiology, or physics (recommended: Biology C119, M127, 146, 168 in ecological and behavioral processes and Biology 103, 107, 112, 113A, 114, 115 in taxon-oriented biology; Chemistry and Biochemistry 132A, 132B/132BL, 153A, 153L may be substituted for Chemistry and Biochemistry 15, Mathematics 32B, 33A).

### Marine Biology (MB) Concentration

This concentration is designed for students who wish to specialize in the area of marine sciences. Completion of this concentration provides students with both an excellent background in biology and specialization in various disciplines such as oceanography, subtidal and intertidal ecology, and physiology of marine organisms. Graduates are well prepared for postgraduate opportunities in the marine sciences, many other areas of biology, and medicine. The concentration provides valuable field experience with concomitant individual research opportunities in marine biology.

**Preparation for the Major:** Biology 5, 5L, 6, 9 or equivalent; Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL, 132A, 132B/132BL, 153A; Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A; Physics 6A, 6B, and 6C, or 8A/8AL, 8B/8BL, 8C/8CL, and 8D/8DL; Statis-

tics 50; Earth and Space Sciences 15 or Atmospheric Sciences 6 or 6A.

**The Major:** Biology 108 or equivalent, C109; one marine organismic biology course (Biology 101A, 105, or 112); one physiology course (Biology 128, 162, 166, 167, or 170); one ecology, behavior, or evolution course (Biology 120, 122, 129, or 135); one field quarter consisting of four courses from the Marine Biology Quarter (MBQ) or equivalent field courses given elsewhere (for a 16-unit equivalent — see undergraduate adviser); two physical, chemical, or geological oceanography courses from Anthropology 177, Atmospheric Sciences CM140, 143, Chemistry and Biochemistry 103, Earth and Space Sciences C130, 131, 153, Geography 100, 101, 103, 190, Mechanical, Aerospace, and Nuclear Engineering 103 (strongly recommended), 150A.

### Molecular, Cellular, and Developmental Biology (MCD) Concentration

This concentration is closed to new students effective Fall Quarter 1993. Students currently enrolled may petition to transfer to the cell and molecular biology major in the Undergraduate Advising Office, 2312 Life Sciences.

### Plant Biology (PB) Concentration

This concentration prepares students for postgraduate programs in plant biology, including environmental biology, ecology, agricultural sciences, and plant molecular, developmental, and cellular biology. Students select key courses to obtain a sound, broad foundation in plant biology, learning state-of-the-art research techniques. They are also given opportunity to participate in individual supervised research projects using plants as experimental organisms.

**Preparation for the Major:** Biology 5, 5L, 6, 9 or equivalent; Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL, 132A, 132B/132BL, 153A; Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A; Physics 6A, 6B, and 6C, or 8A/8AL, 8B/8BL, 8C/8CL, and 8D/8DL.

**The Major:** Biology 108 or equivalent, 146 or 162; one plant morphology or anatomy course (Biology 101A, 101B, or 152); two molecular or cellular plant biology courses (Biology 121, C141, C149); one ecology or evolution course (Biology 103, 120, or 122); one field quarter course involving research in plant biology (Biology 118, 124, or 148) or a laboratory internship (Biology 190 series or 199) which requires a written paper on some aspect of plant research; additional upper division courses in biology, chemistry, computer science, geography, or microbiology.

### Additional Requirements

- (1) A six-unit course counts as only one course toward requirements for the major.
- (2) A maximum of eight units of Biology 190 or four units of Biology 199 may be applied to-

ward the major. Credit for 199 courses from other departments may not be applied.

(3) Courses applied toward requirements for preparation for the major and the major must be taken for a letter grade. Biology majors must earn a C- or better in each course taken as preparation for the major, and at least a 2.0 (C) overall average in all courses applied toward the major.

### Honors Program

An overall grade-point average of 3.4 and a 3.4 in the major are required for graduation with honors. Highest honors are awarded to majors who have a GPA of 3.6 overall and a 3.6 in the major at graduation and who have successfully completed Biology 190A-190B.

### Field Biology

The department offers two quarter-long programs of advanced courses in field biology: the Field Biology Quarter (FBQ) and the Marine Biology Quarter (MBQ). These programs focus on the biology of organisms living in their natural environments, emphasize independent student research projects, and take place at field sites away from the UCLA campus. The course composition varies somewhat from year to year, but each program always carries 16 units of course credit. The Field Biology Quarter occurs during Spring Quarter and involves some combination of Biology 103, 107, 113B, 114, 115, 118, 124, C125, C126, 131, 132, and 134B. The Marine Biology Quarter occurs during Fall Quarter and includes some combination of Biology 102, C104, 123, 147, 148, 163, 164, and 165. To participate, you must enroll in all courses in the respective program. It is strongly recommended that you complete Biology C109 or C215 prior to applying for MBQ. Participants in both programs are selected by personal interview during Winter Quarter. Although most participants are upper division biology majors, both programs are available to any upper division student with adequate biological background. Information and applications are available in the Undergraduate Advising Office.

### Bachelor of Science in Cell and Molecular Biology

The Bachelor of Science degree in Cell and Molecular Biology (CMB) is designed especially for students who intend to go on to postgraduate work in biology or medicine and for students aiming for entry-level positions in biotechnology-related fields. Students are exposed to basic biological and molecular concepts underlying recent technical advances in molecular, cell, and developmental biology in both animals and plants. Areas of emphasis include cell biology, immunology, molecular biology, plant biology, developmental biology, and neurobiology, among others.

Students currently enrolled in the molecular, cellular, and developmental biology (MCD)

concentration may petition to transfer into this major in the Undergraduate Advising Office, 2312 Life Sciences.

### Precell and Molecular Biology Major

Students who have not completed all the courses required as preparation for the major are considered precell and molecular biology majors. After completing those courses with a grade of C- or better in each and a grade-point average of 2.0 or better in all premajor courses, you may petition to enter the major in the Undergraduate Advising Office. If you transfer in your junior year from another institution, you must have completed courses equivalent to the above in order to be admitted to the major.

### Preparation for the Major

*Required:* Biology 5, 5L, 9; Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL; Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A; Physics 6A, 6B, and 6C, or 8A/8AL, 8B/8BL, 8C/8CL, and 8D/8DL.

### The Major

*Required:* Twenty units of core courses (Biology 100A, 100B, 108, either 138 or C141, and four units from C174A through C174F); Chemistry and Biochemistry 110A, 132A, 132B/132BL, 153A, 153B, 153L, 156; a minimum of three elective core courses from Biology C149, CM156, 157, 171, M175A, M185A, CM185B; 12 additional units selected from the following: any biology course listed above not used to satisfy the core requirement, Biology 110, 121, 142, 146, 150, 162, 166, M175B, M175C, Chemistry and Biochemistry 153C, Microbiology and Molecular Genetics 101, 102, C104A, C104B, C104C, C119, 154; eight units of upper division laboratory experience selected from Biology 155, 158, 162, 166, 190A through 190D, 199.

### Additional Requirements

- (1) A five- or six-unit course counts as only one course toward requirements for the major.
- (2) A maximum of eight units of Biology 190 or four units of Biology 199 may be applied toward the major. Credit for 199 courses from other departments may not be applied. All 190 research must be performed in CMB faculty laboratories.
- (3) Courses applied toward requirements for preparation for the major and the major must be taken for a letter grade. CMB majors must earn a C- or better in each course, and at least a 2.0 (C) overall average in all courses applied toward the major.

### Graduate Study

The department offers M.A. and Ph.D. degrees in Biology, with specialization in a wide spectrum of fields. Students who plan to enter graduate school are urged to seek the advice of staff members in their field of interest.

### Admission

The department encourages applications from students in all areas of science, but expects successful applicants to have or to acquire a background comparable to the requirements for the bachelor's degree in biology at UCLA. A background in chemistry, physics, and mathematics is desirable. Deficiencies in these or other subjects must be made up at the earliest opportunity. Undergraduates who are prospective applicants should remedy their deficiencies by preparatory study at an appropriate institution. The Graduate Division or the department may initially restrict applicants with less distinguished accomplishments.

The department is organized for administrative purposes into two divisions based on mutual interest. Applications should be directed to either Division I (molecular, cell, and developmental biology) or Division II (integrative biology: cells, organisms, and populations). The major fields and subdisciplines are listed under faculty interests in the departmental brochure.

All applicants must take the General Test (verbal, quantitative, and analytical) of the Graduate Record Examination (GRE). The Subject Test in Biology is also required.

Three letters of recommendation are required. These should be from professors, supervisors, or others who may provide an evaluation of motivation, accomplishments or potential in research, scholarly activities, teaching, and related academic functions.

Applications, departmental brochures, and additional information may be obtained from the Graduate Affairs Office, Department of Biology, 2316 Life Sciences, UCLA, Los Angeles, CA 90024-1606.

### Program of Study

Study consists of coursework and research within the department and within related programs in biochemistry, geology, microbiology, and molecular biology on campus. Opportunities are also available off campus for intensive study of marine biology at a marine science center in Fall Quarter (MBQ), field biology in Spring Quarter (FBQ), and tropical biology within the FBQ program and through courses offered by the Organization for Tropical Studies.

You also are required to complete the departmental written qualifying examination at an early point in your graduate career.

### Foreign Language Requirement

No foreign language is prerequisite to admission to the M.A. or Ph.D. program, and there is no uniform language requirement for obtaining the Ph.D. However, in the pursuit of certain subspecialties of biology, you may be required to gain proficiency in one or more foreign languages.

## Master of Arts Degree

### Admission

Applications are evaluated by the appropriate divisional admissions committee.

### Course Requirements

The program consists of at least nine courses completed in graduate standing, of which at least five must be graduate (200 series) courses. The remainder may be courses in the 100, 200, or 500 series as noted below. No more than two 596 courses (eight units) may be applied toward the nine courses required for the degree; only one 596 course (four units) may be applied toward the minimum graduate course requirement. Courses graded S/U may not be applied toward the minimum requirement, except that an S/U-graded course outside the major and applicable to the degree may be applied, provided that no more than one such course is taken per term.

Specific course requirements are established for you by your guidance committee.

### Thesis Plan

A thesis reporting the results of an original investigation, written to conform to the requirements of the Graduate Division, is presented to and approved by the master's thesis committee of three faculty members. Before beginning work on the thesis, you must obtain approval of the subject and general plan from the faculty members concerned and from the thesis committee.

### Comprehensive Examination Plan

If you select this plan, you must take a three-hour examination prepared and graded by your committee or committee chair and approved by the graduate adviser. The examination is graded pass or fail. If you fail, recommendation for or against a second examination must be made by the graduate adviser.

## Ph.D. Degree

### Admission

Each division determines admission of students to the Ph.D. program separately. Ph.D. students in Division I (molecular, cell, and developmental biology) are admitted in Fall Quarter only. Applications to Division II (integrative biology: cells, organisms, and populations) are reviewed by the division's admissions committee following a January 1 deadline.

### Course Requirements

There are no formal course requirements for the Ph.D. in Division II, although specific requirements may be established individually by your guidance committee. Division I students are required to take a minimum of four graduate-level courses, preferably in the first year (contact the Graduate Affairs Office for a

course list). You must enroll for full-time study, as defined by the Graduate Division.

You are strongly encouraged to rotate laboratory and/or course experience with several faculty members during your first year of study as an aid to selecting a permanent adviser.

### Teaching Experience

Each student is required to serve a minimum of three terms as a teaching assistant.

### Qualifying Examinations

You must pass the departmental written qualifying examination at the Ph.D. level before you are eligible to take the University Oral Qualifying Examination, which is conducted by your doctoral committee as prescribed by the Graduate Division. It includes your preparation, presentation, and defense of an original written research proposal. The examination is graded pass, fail, or repeat. A failure requires dismissal. The second attempt at the examination is graded pass/fail. The examination must be completed by the end of the third year following first registration. You are advanced to candidacy following successful completion of this examination.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Final Oral Examination

The final oral examination is administered by your doctoral committee after you complete your dissertation. This examination is highly recommended but may be waived by your doctoral committee.

### Lower Division Courses

If you do not complete course prerequisites as listed below, you may be dropped from those courses.

**2. Principles of Modern Biology.** Lecture, three hours; laboratory, two hours. Designed for nonmajors. Not open to students with credit for course 5 or 9 or equivalent. Major themes in biology, including evolution, behavior, ecology, cell biology, photosynthesis, genetics, organismal diversity, and energetics as they relate to events occurring on our Earth today. P/NP or letter grading.

**5. Biology of Organisms.** Lecture, three hours; discussion/demonstration, two hours. Comparative morphology and embryology of major plant and animal phyla; function of organ systems, including gas exchange, transport, regulation of internal environment, hormones, coordination, and nervous system.

**5L. Organismic and Environmental Biology Laboratory.** Discussion, two hours; laboratory, four hours. Prerequisite: course 5. Introductory biology laboratory, including selected topics on genetics and molecular biology, anatomy, physiology, behavior, and ecology of plants and animals.

**6. Ecology, Evolution, and Behavior.** Lecture, three hours; discussion, two hours. Prerequisites: course 5 and Mathematics 3A or 31A. Survey of principles of population and community ecology, behavioral ecology, population genetics, and evolution.

**9. Introduction to Cell and Molecular Biology.** (Formerly numbered 7A.) Lecture, three hours; discussion, one hour. Prerequisite: Chemistry 11A. Not open for credit to students with credit for former course 7. Biological macromolecules, energy production, principles of cellular organization and function, and principles of molecular biology.

**10. Plants and Civilization.** Lecture, three hours; demonstration, one hour. Designed for nonmajors. Origin of crop plants; man's role in development, distribution, and modification of food, fiber, medicinal, and other plants in relation to their natural history.

**11. Biomedical Research Issues in Minority Communities.** Prerequisite: consent of instructor. Limited to 30 students. Discussions and student presentations on biomedical research as it affects minority communities, with emphasis on methodology, design, consequences, and ethics of current research. Discussion leaders provide information on preparation and training for research careers. P/NP or letter grading. Ms. González (F)

**13. Evolution of Life.** Lecture, three hours; discussion, one hour. Not open to life sciences majors. Limited to 100 students. Introduction to biology within the framework of evolutionary theory. Relationships of evolutionary thought to other areas of knowledge and society. Natural selection and origin of variation examined in context of genetics, molecular biology, physiology, phylogeny, population dynamics, behavior, and ecology. Emphasis on critical role of historical processes.

**20. Introduction to Human Heredity.** Lecture, two hours; discussion, one hour; laboratory, two hours. Not open to students with a prior college course in genetics; not intended to satisfy requirements of medical or dental schools. Man's inheritance and its biological basis introduced through lectures, readings, and laboratory exercises with *Drosophila*. Topics include prenatal development, Mendelizing factors, role of chromosomes in heredity, and role of genes in disease and population structure.

**21. Field Biology.** Lecture, three hours; discussion, two hours, or field trips, three to four hours. Recommended (but not prerequisite): course 2. Not open for credit to students with credit for course 6 or 122. Introduction to natural history of Western North America, especially Southern California. Classification, distribution, and ecology of common plants and animals.

**25. Oceans.** Lecture, three hours; discussion, two hours. Not open for credit to students with credit for Earth and Space Sciences 15. Physical and chemical processes that take place in oceans, with emphasis on their effects on organisms.

**30. Biology of Cancer.** Introduction to molecular, cellular, and clinical aspects of cancer and consideration of sociological and psychological impacts of cancer on the individual and society. Each lecture/discussion period presented by an invited lecturer who is prominent in cancer research or treatment. P/NP or letter grading. Mr. Bohman

**40. AIDS and Other Sexually Transmitted Diseases.** Introduction to interdisciplinary debate surrounding the personal and societal response to AIDS and other sexually transmitted diseases. P/NP or letter grading. Mr. Bohman

**50. Desert Life.** Lecture, three hours; laboratory, two hours. Introduction to fundamental structural, physiological, and behavioral features of desert organisms, with special emphasis on deserts of Western North America. Mr. A. Gibson (F)

**70. Genetic Engineering and Society.** Lecture, three hours; discussion, two hours. Designed for nonmajors. Not open to students with credit for course 9 or 108. Basic principles of genetic engineering. Overview of genetic engineering techniques and relationship of genetic engineering to medicine, agriculture, and society. Emphasis on specific genetic engineering applications to generate discussion on its use in society. Mr. Goldberg

**80. The Green World: Plant Biology for Now and the Future.** Lecture, three hours; discussion, one hour. Designed for nonmajors. Basic principles of plant biology and introduction to techniques for manipulating plants for improved agriculture, sources of renewable "clean" energy, reclamation of deforested and nutritionally depleted soils, and "biological factories" to produce biodegradable plastics, antibodies, and other commodities. Underexploited agriculture crops also featured.

Ms. Hirsch, Mr. Thornber (F)

**88A. Lower Division Seminar: Conservation of Biodiversity.** Discussion, three hours; one weekend field trip. Introduction to patterns of biological diversity; selection, management, and use of natural reserves; human aspects on diversity; and effects of governmental and nongovernmental actions on biological conservation. P/NP or letter grading.

Ms. Mathias

**88B. Lower Division Seminar: Origin of Life.** Seminar, three hours. Training in science not required. Biological evolution as a central element in Earth history; theories of the origin of life based on observations, experimental simulations, and speculations. Students are guided in making class presentations and in writing papers. P/NP or letter grading.

**88C. Lower Division Seminar: Frontiers of Molecular Biology — Historical Perspective.** Seminar, three hours. Limited to freshmen who have not completed course 9; designed for nonmajors. Study of biology at molecular level has unlocked secrets of the gene, started the biotechnology revolution, and promises a new scientific age that will use gene therapy to cure human disease, produce superplants that grow in the desert, and uncover the mysteries of the mind. Exploration of origins and history of molecular biology by analyzing papers written by Mendel, Watson, Crick, and others who played a major role in changing society with their discoveries of new biological principles. P/NP or letter grading. Mr. Goldberg

**88D. First-Year Seminar: Genetics and Society.** Discussion, three hours. Some ways genetics affects us now and what changes are possible for our children. Examination of biological basis of inheritance in order to understand scientific methods and science teaching. Mr. Merriam (F)

### Upper Division Courses

Course 5L is prerequisite to all upper division laboratory courses. Course 108 is prerequisite to all upper division courses in cell, molecular, and developmental biology. If you do not complete the prerequisites, you may be dropped from those courses.

**100A. Introduction to Developmental Molecular Biology.** (Formerly numbered 7B.) Lecture, three hours; discussion, one hour. Prerequisites: course 9, Chemistry 11 series (may be taken concurrently). Recommended: course 108 (may be taken concurrently). Not open for credit to students with credit for former course 144. Introduction to principles of prokaryote and eukaryote molecular biology and their application to information storage and retrieval. Chromosome structure and function, gene transcription, RNA processing, basic principles of developmental biology, DNA synthesis and repair, gene regulation.

**100B. Introduction to Cell Biology.** (Formerly numbered 7C.) Lecture, three hours; discussion, one hour. Prerequisites: courses 100A, 108, Chemistry 11 series (may be taken concurrently). Not open for credit to students with credit for former course 143. Analysis of cell organization, structure, and function at molecular level. Cell membranes and organelles, membrane transport, cellular signaling, cytoskeleton and cell movement, intracellular trafficking, cell energetics.

**101A. Biology of Lower Plants (6 units).** (Formerly numbered 100.) Lecture, four hours; laboratory, six hours. Prerequisite: course 5 or equivalent or consent of instructor. Not open for credit to students with credit for former course 100. Introduction to biology of algae, fungi, and bryophytes, with emphasis on form, function, and development, and role of lower plants in the environment. Students are strongly encouraged to take both courses 101A and 101B since these represent a course sequence surveying the entire plant world as appropriate background for upper division courses in plant biology.

**101B. Biology of Vascular Plants (6 units).** (Formerly numbered 101.) Lecture, three hours; laboratory, six hours. Prerequisite: course 5 or equivalent or consent of instructor. Not open to students with credit for former course 101. Introduction to the diversity in form and reproduction of vascular plants, with emphasis on development, evolution, and function. Students are strongly encouraged to take both courses 101A and 101B since these represent a course sequence surveying the entire plant world as appropriate background for upper division courses in plant biology.

**102. Biology of Marine Invertebrates.** Five-week intensive course. Lecture, five hours; laboratory, 15 hours. Prerequisites: courses 5, 5L, and 6, or consent of instructor. Morphology, systematics, life histories and natural history, ecology, behavior, and physiology of marine invertebrates; emphasis on local invertebrates of Southern California and their habitats. Given off campus at a marine science center.

Mr. Morin

**103. Plant Evolution and Systematics.** Lecture, three hours; laboratory, three hours. Prerequisite: course 2 or 5 or consent of instructor. Evolution, systematics, morphology, principles of taxonomy, phyto-geography, phylogenetic analysis, speciation, and natural history of plants. P/NP or letter grading.

Mr. A. Gibson

**C104. Experimental Invertebrate Zoology (6 units).** Lecture, two hours; laboratory, 12 hours. Prerequisites: courses 5, 5L, 6, consent of instructor. Advanced treatment of physiology, behavior, and ecology of invertebrates, with emphasis on independent laboratory and field investigations. Concurrently scheduled with course C212.

Mr. Hamner, Mr. Morin

**105. Biology of Invertebrates (6 units).** Lecture, three hours; laboratory/field trips, six hours. Prerequisites: courses 5, 5L, and 6, or consent of instructor. Introduction to systematics, evolution, natural history, morphology, and physiology of invertebrates.

Mr. Hamner, Mr. Morin

**106. Experimental Marine Invertebrate Biology (4 or 6 units).** Lecture, two hours; laboratory, 12 hours. Prerequisites: courses 105, and 166 or 167 (either may be taken concurrently), or equivalent, or consent of instructor. Offered either as a six-unit quarter-long course or as a four-unit Marine Biology Quarter course. Advanced course of natural history, physiology, biochemistry of invertebrates, with emphasis on independent laboratory and field investigations.

Mr. Hamner

**107. Entomology (6 or 8 units).** Prerequisites: courses 5, 5L, and 6, or consent of instructor. Offered either as a six-unit quarter-long course or as an eight-unit Field Biology Quarter course. Six-unit course has lecture, three hours; laboratory, six hours; additional field trips. Morphology, physiology, development, systematics, behavior, and ecology of insects. Eight-unit course covers same basic lecture and laboratory material in two and one-half intensive weeks, followed by extended field trip where students do individual field projects in insect biology.

**108. Introductory Genetics.** (Formerly numbered 8.) Lecture, three hours; discussion, 90 minutes. Prerequisites: course 9, Chemistry 11 series (may be taken concurrently). Not open for credit to students with credit for former course 8. Principles of Mendelian inheritance and chromosomal basis of heredity in prokaryotes and eukaryotes, recombination, biochemical genetics, mutation, DNA, genetic code, gene regulation, genes in populations.

**C109. Introduction to Marine Science.** Lecture, three hours; laboratory, three hours; weekend field trips. Prerequisites: courses 5, 5L, and 6, or consent of instructor. Strongly recommended for prospective MBQ students. Introduction to physical, chemical, and biological aspects of marine science. Emphasis on biological systems and natural communities. Concurrently scheduled with course C215.

**110. Vertebrate Morphology (6 units).** Lecture, three hours; laboratory, five hours. Prerequisites: courses 5, 5L, 6. Study of vertebrate morphology, function, and evolution from viewpoint of comparative anatomy of adult forms, biomechanics, development, and paleontology. Laboratory study of selected vertebrates.

Ms. Van Valkenburgh

**111. Biology of Vertebrates.** Lecture, three hours; demonstration/field trips/discussion, three hours. Prerequisites: courses 5, 5L, 6. Adaptations, behavior, and ecology of vertebrates.

**112. Ichthyology.** Lecture, two hours; laboratory, six hours; field trips. Prerequisites: courses 5 and 6, or consent of instructor. Highly recommended: courses 110, 111. Biology of freshwater and marine fishes, with emphasis on their evolution, systematics, morphology, zoogeography, and ecology. Field trips examine fishes of the Southern California shoreline, tidepools, and coastal streams.

Mr. Buth

**113A. Herpetology.** Lecture, three hours; laboratory, one hour; weekend field trips. Prerequisites: courses 5, 6. Vertebrate zoology course restricted to biology of reptiles and amphibians of the world, covering current systematics, ecology, behavior, morphology, and physiology of these animals.

Mr. Nagy

**113B. Field Herpetology.** Prerequisites: courses 5, 6. Recommended: course 111. Two weeks of off-campus research projects followed by two-week lecture course and offered only as part of Field Biology Quarter. Biology, particularly ecology and behavior, of reptiles and amphibians in their natural habitat. Students carry out supervised research projects, then write up and orally present their results in seminar fashion.

Mr. Nagy

**114. Ornithology.** Lecture, two hours; laboratory/discussion/field trips, six hours. Prerequisites: course 111, consent of instructor. Limited enrollment. Systematics, distribution, physiology, behavior, and ecology of birds.

**115. Mammalogy.** Lecture, three hours; laboratory, four hours. Prerequisite: course 110 or 111 or equivalent or consent of instructor. Evolution, ecology, behavior, and physiology of mammals.

Ms. Van Valkenburgh

**117. Vertebrate Paleontology.** Lecture, three hours; laboratory, three hours. Prerequisite: course 110. Recommended: one general geology course. Fossil record of the evolution of vertebrates, with emphasis on paleobiology and morphology of tetrapods.

Ms. Van Valkenburgh

**118. Plant Adaptations (8 units).** Lecture, one hour; field trip, 10 hours. Prerequisites: completion of preparation for the major courses, consent of instructor. Five-week course offered only as part of Field Biology Quarter. Field-oriented introduction to mechanisms by which vascular plants adapt themselves to their abiotic and biotic environments using community, population, and ecophysiological levels of integration.

Mr. Rundel (Sp)

**C119. Mathematical Ecology.** (Formerly numbered 119.) Lecture, three hours. Prerequisites: Mathematics 31A, 31B, 32A. Differential equation models of population growth explore theory of evolutionary ecology to determine why natural environments of the world support the kinds of living organisms they do and why organisms of the world possess the adaptations they do. Concurrently scheduled with course C219.

Mr. Vance

**120. Evolution.** Lecture, three hours; discussion, two hours. Prerequisites: courses 5, 5L, 6, Mathematics 3A and 3B, or 31A. Recommended: course 108 or equivalent. Designed for biology majors specializing in environmental and population biology. Introduction to mechanics and processes of evolution, with emphasis on natural selection, population genetics, speciation, evolutionary rates, and patterns of adaptation. P/NP or letter grading.

Mr. Buth, Mr. Cody, Mr. Hespenheide

**121. Molecular Biology and Evolution.** Lecture, three hours; discussion, one hour. Prerequisites: courses 9 and 108 or equivalent. Not open for credit to students with credit for former course 144. Molecular biology, with emphasis on evolutionary aspects. DNA replication, RNA transcription, protein synthesis, gene expression, and molecular evolution.

Mr. Brunk (W)

**122. Ecology.** Lecture, three hours; laboratory, three hours. Prerequisites: courses 5, 5L, 6, and Mathematics 3A and 3B, or 31A, or consent of instructor. Highly recommended: Mathematics 31B, 32A. Recommended for biology majors specializing in environmental and population biology. Introduction to population and community ecology, with emphasis on growth and distributions of populations, interactions between species, and structure, dynamics, and functions of communities and ecosystems.

Mr. Cody

**123. Ecology of Marine Communities.** Five-week intensive course. Lecture, five hours; laboratory, 15 hours. Prerequisites: courses 5, 5L, and 6, or consent of instructor. Field study of natural history and ecology of marine organisms and communities, involving independent research project. Given off campus at a marine science center.

Mr. Vance

**124. Field Ecology (4 or 8 units).** Lecture, two hours; laboratory or field trip, 10 hours. Prerequisites: courses 5, 6. Recommended: courses 111, 120, 122. Offered either as a four-unit quarter-long course with weekend field trips or as a single field trip conducted between quarters, followed by lectures and tutorials for three weeks. When course is given as part of Field Biology Quarter, it is eight units and lasts for five weeks. Field and laboratory research in ecology; collection, analysis, and write-up of numerical data, with emphasis on design and execution of field studies.

Mr. Cody

**C125. Tropical Animal Communication (4 or 8 units).** (Formerly numbered 125.) Prerequisites: courses 5, 6. Offered either as a four-unit quarter-long course or as an eight-unit Field Biology Quarter course. Four-unit course has lecture, three hours; discussion, two hours. Animal communication behavior, tropical vertebrate biology, and evolution of information processing systems. Eight-unit course covers same basic lecture material in five or six intensive weeks, followed by extended field trips where students do individual projects in animal communication. Concurrently scheduled with course C225.

Mr. Narins

**C126. Behavioral Ecology (4 or 8 units).** (Formerly numbered 126.) Prerequisites: course 6, Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A, or consent of instructor. Not open for credit to students with credit for course 129. Offered either as a four-unit quarter-long course or as an eight-unit Field Biology Quarter course. Four-unit course has lecture, three hours; discussion, three hours. Animal communication behavior, island biogeography, and evolution of social behavior. Eight-unit course covers same basic lecture material in five intensive weeks, followed by extended field trip where students do individual projects in behavioral ecology. Concurrently scheduled with course C227.

Mr. Narins

**M127. Soils, Plants, and Society.** (Same as Geography M127.) Lecture, three hours; field trip. Prerequisites: Chemistry 11A, 11B, and 11C, or equivalent, or consent of instructor. General treatment of soil development and morphology and physical and chemical properties of soils as they relate to plant growth and distribution; soil resources, management, conservation, and cultural aspects. Use of soil profiles examined on field trip to explain developmental phenomena.

**128. Plant Physiological Ecology.** Lecture, three hours; laboratory/field, three hours. Study of plant/environment interactions under natural conditions. Emphasis on transpiration and photosynthesis, leaf temperatures, and water movement in soil/plant/atmosphere continuum. Individual student projects.

Mr. Nobel (W)

**129. Animal Behavior.** Lecture, three hours; discussion, two hours. Prerequisites: courses 5, 6, 108 or equivalent. Introduction to behavioral ecology. Methods and results of evolutionary approaches to study of animal behavior, including foraging strategies, social competition, sexual selection, mating systems, cooperation, and social organization.

Mr. R. Gibson

**130. Principles of Systematic Biology.** (Formerly numbered 202.) Lecture, three hours; discussion, two hours. Prerequisite: course 6. Recommended: courses 120, 135. Concepts, principles, and methods of comparative biology as they apply to the inference of evolutionary relationships among organisms. Principles and application of biological nomenclature.

Mr. Ruth

**131. Insect Ecology (4 or 8 units).** Lecture, two hours; laboratory or field trip, eight hours. Prerequisite: course 6. Recommended: courses 120, 122. Offered either as a four-unit quarter-long course with weekend field trips or as an eight-unit Field Biology Quarter course with amount of fieldwork increased accordingly. Analysis of ecological roles of insects in terrestrial communities, with emphasis on interactions with both plants and vertebrates. Group and individual field projects.

Mr. Hesperheide

**132. Field Behavioral Ecology (8 units).** Lecture, two hours; laboratory/field trip, 10 hours. Prerequisites: courses 5, 6. Recommended: course 129. Five-week course offered only as part of Field Biology Quarter. Field research in behavioral ecology, emphasizing animal communication. Design and execution of individual and small group field projects during extended field trip.

Mr. Narins

**133. Vegetation and Ecosystem Dynamics.** Lecture, three hours. Prerequisite: course 6 or equivalent. Introduction to form and functional relationships of major world vegetation types in relation to their physical environments.

Mr. Rundel (W)

**C134A. Physiological Ecology of Desert Animals.** (Formerly numbered C134.) Lecture, three hours; laboratory, one hour; field trips, four hours. Prerequisites: courses 5, 6. Consideration of physiological, behavioral, morphological, and ecological mechanisms desert animals use to enhance their survival in an arid habitat. Concurrently scheduled with course C214.

Mr. Nagy

**134B. Field Physiological Ecology of Desert Animals (8 units).** (Formerly numbered C134.) Prerequisites: courses 5, 6. Two weeks of off-campus research projects with two-week lecture course (four hours per day) and offered only as part of Field Biology Quarter. Consideration of physiological, behavioral, morphological, and ecological mechanisms desert animals use to enhance their survival in an arid habitat. Students carry out supervised research projects, then write up and orally present their results in seminar fashion.

Mr. Nagy

**135. Population Genetics.** Lecture, three hours; discussion, one hour. Prerequisite: course 108 or equivalent. Highly recommended: Mathematics 31A, 31B. Basic principles of genetics of population, dealing with genetic structure of natural populations and mechanisms of evolution. Equilibrium conditions and forces altering gene frequencies, polygenic inheritance, molecular evolution, and methods of quantitative genetics.

Mr. Taylor

**138. Developmental Biology.** Lecture, three hours; discussion, one hour. Prerequisites: courses 100A, 108. Strongly recommended: course 100B. Cellular and molecular basis of animal embryology.

Mr. Crews, Mr. Hartenstein, Ms. Lengyel

**C141. Molecular Basis of Plant Differentiation and Development.** (Formerly numbered 141.) Lecture, three hours; discussion, one hour. Prerequisites: courses 5, 9 and 108 or equivalent, 100A. In-depth study of basic processes of growth differentiation and development in plants and molecular mechanisms underlying these processes. Discussion of a variety of plant systems, with focus on developing critical understanding of current experimental basis of research in this field. Concurrently scheduled with course C239.

Ms. Erickson, Ms. Tobin

**142. Seminar: Topics in Developmental Biology (2 units).** Prerequisites: course 138, consent of instructor. Undergraduate seminar on topics in developmental biology. Reading and group discussions on current research. P/NP or letter grading.

**146. Physicochemical Biology.** Lecture, three hours; discussion, one hour. Prerequisites: courses 5 and 9 or equivalent, or consent of instructor, Physics 6C or equivalent. Physicochemical analysis of physiology of cells and organelles, with emphasis on membranes, thermodynamics of solute and water movement, light absorption, and subcellular energy transduction.

Mr. Nobel (F)

**147. Biological Oceanography.** Five-week intensive course. Lecture, five hours; laboratory, 15 hours. Prerequisites: courses 5, 5L, 6, 9 or equivalent, Chemistry 11A, 11B/11BL, and 11C/11CL, or consent of instructor. Lectures include physical, chemical, and biological factors affecting abundance and distribution of organisms in marine environment. Laboratory includes experimental studies of local marine organisms, with emphasis on primary and secondary production and nutrient flux.

Mr. Muscatine

**148. Biology of Marine Plants.** Five-week intensive course. Lecture, five hours; laboratory, 15 hours. Prerequisites: courses 5, 5L, 9 or equivalent, Chemistry 11A, 11B/11BL, and 11C/11CL, or consent of instructor. Introduction to general biology of marine algae, including basics of structure reproduction, life histories, systematics, and introduction to physiology and ecology of marine algae. Techniques in culture and laboratory investigation and utilization of algae. Given off campus at a marine science center.

Mr. Chapman

**C149. Cell and Molecular Biology of Plants.** Lecture, three hours; discussion, one hour. Prerequisites: courses 9, 100A, 108. Strongly recommended: course 100B. Structure, function, and biogenesis of cells, with emphasis on organelles and metabolic processes specific to plants. Comparison with equivalent processes in algae and bacteria. Concurrently scheduled with course C220.

Mr. Thornber

**150. Plant Chemical and Molecular Communication.** Lecture, three hours; discussion, two hours. Prerequisite: completion of preparation for the major courses. Introductory course in chemical ecology and how natural compounds affect gene expression. Emphasis on role of natural compounds in plant/microbe, plant/plant, and plant/herbivore interactions; synopsis of principles of plant defense mechanisms and responses to microbial infections.

Mr. Chapman, Ms. Hirsch

**152. Functional Plant Anatomy.** Lecture, three hours; laboratory, six hours. Prerequisite: course 5 or equivalent or consent of instructor. Structure and functional significance of various cell and tissue types in higher plants, plus patterns of growth and differentiation in roots, stems, leaves, flowers, and fruits.

Mr. A. Gibson, Ms. Hirsch

**153. Cellular Physiology: Functional Histology.** Prerequisites: courses 5, 5L, 9 or equivalent, Chemistry 11A, 11B/11BL, 11C/11CL, Mathematics 3A, 3B, 3C, Physics 6A, 6B, 6C. Emphasis on how cellular organelles (nucleus, mitochondria, smooth and rough endoplasmic reticulum, golgi apparatus, lysosomes, cytoskeleton, plasma membrane, extracellular matrix) contribute to function of tissues and organs in vertebrates.

Mr. Cascarano

**153L. Laboratory for Cellular Physiology: Functional Histology (2 units).** (Formerly numbered 153.) Laboratory, four hours. Corequisite: course 153. Exploration of microanatomy of vertebrate tissues and organs.

Mr. Cascarano

**155. Genetics Methods.** Discussion, two hours; laboratory, eight hours. Gene mapping and detection and analysis of gene variants by means of inheritance patterns.

Mr. Merriam (F)

**CM156. Human Genetics.** (Same as Microbiology CM156.) Lecture, three hours; discussion, one hour. Prerequisites: courses 100A, 108 or equivalent. Strongly recommended: course 100B. Application of genetic principles in human populations, with emphasis on cytogenetics, biochemical genetics, population genetics, and family studies. Lectures and readings in the literature, with focus on current questions in the fields of medical and human genetics and methodologies appropriate to answer such questions. Concurrently scheduled with course CM256.

Mr. Lusia, Mr. Merriam

**157. Gene Manipulation: Genetic Engineering.** Lecture, three hours; discussion, two hours. Prerequisites: courses 100A, 108, 138, consent of instructor. Strongly recommended: course 100B. Survey of methods and applications of recombinant DNA research as applied to both basic scientific research and the biotechnology industry.

Mr. Salsar

**158. Cell Biology (6 units).** Lecture, three hours; laboratory, six hours. Prerequisites: courses 5, 5L, 9 and 108 or equivalent, Chemistry 11A, 11B/11BL, 11C/11CL. Cell biology of eukaryotic cells, with emphasis on correlation of structure and function at molecular, organellar, and cellular levels.

Mr. Cascarano

**162. Plant Physiology (6 units).** Lecture, four hours; laboratory, four hours. Prerequisites: courses 5, 9 or equivalent, Chemistry 153A, 153L. Basic aspects of plant function, including photochemical, biochemical, and physiological aspects of photosynthesis. Carbon and nitrogen metabolism and its regulation; organellar interactions and compartmentation. Water relations, ion transport, flowering, hormone action, and plant responses to stress.

Ms. Gonzalez, Mr. Zeiger

**163. Biology of Marine Tetrapods.** Five-week intensive course. Lecture, five hours; laboratory and fieldwork, 15 hours. Prerequisites: courses 5, 5L, 6, 9 or equivalent, Chemistry 11A, 11B/11BL, 11C/11CL. Highly recommended: course 111. Survey of "higher" vertebrates living in marine habitats, including estuarine amphibians, marine reptiles, seabirds, and marine mammals. Laboratory emphasizes observational and experimental approaches to study of morphology, systematics, ecology, and behavior of local marine birds and mammals. Given off campus at a marine science center.

**164. Field Biology of Marine Fishes.** Five-week intensive course. Lecture, five hours; laboratory, 15 hours. Prerequisites: courses 5, 5L, and 6, or consent of instructor. Recommended: Mathematics 3A, 3B, 3C. Selected aspects of natural history, ecology, and behavior of the diverse assemblage of local marine fishes. Fieldwork strongly emphasized. Given off campus at a marine science center.

Mr. Ruth

**165. Ecological Physiology of Marine Vertebrates.** Five-week intensive course. Lecture, five hours; laboratory, 15 hours. Prerequisites: courses 5, 5L, 6, 9 or equivalent, Chemistry 11A, 11B/11BL, and 11C/11CL, or consent of instructor. Recommended: Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A, Physics 6A, 6B, and 6C, or 8A/8AL, 8B/8BL, 8C/8CL, and 8D/8DL. Introduction to physiological adaptations of marine vertebrates to major physicochemical variables in the oceans of the world and to major marine habitats. Laboratory work emphasizes marine vertebrates of Southern California waters. Given off campus at a marine science center.

Mr. Gordon

**166. Animal Physiology (6 units).** Lecture, three hours; laboratory, five hours. Prerequisites: courses 5, 5L, 9 or equivalent, Chemistry 11A, 11B/11BL, 11C/11CL. Not open for credit to students with credit for course 167 or 170. Introduction to physiological principles, with emphasis on organ systems and intact organisms.

**167. Regulatory Physiology (6 units).** Lecture, three hours; laboratory, five hours. Prerequisites: courses 5, 5L, 9 or equivalent, Chemistry 11A, 11B/11BL, 11C/11CL. Not open for credit to students with credit for course 166 or 170. Introduction to whole animal and organ physiology. Primary considerations to neuronal and endocrine regulations of body functions and integration of organ systems.

Mr. Engelmann

**168. Insect Physiology.** Lecture, two hours; laboratory, six hours. Prerequisite: course 158 or 166 or 167 or equivalent. Survey of physiology of insects, with emphasis on functional adaptations.

Mr. Engelmann

**170. Animal Environmental Physiology (6 units).** Lecture, three hours; laboratory, eight hours. Prerequisites: courses 5, 5L, 9 or equivalent, Chemistry 11A, 11B/11BL, 11C/11CL. Not open for credit to students with credit for course 166 or 167. Recommended for students with interests in zoology or concentration in ecology, behavior, and evolution (EBE). Introduction to animal function, especially concerning exchanges of energy and materials between organism and environment.

Mr. Nagy

**171. Principles of Neurobiology.** Lecture, three hours; discussion, one hour. Prerequisites: courses 9, 100A, and 166, or consent of instructor. Strongly recommended: course 100B. Introduction to basic principles of neurobiology, including description of structure of neurons and nervous systems; ionic mechanisms responsible for generating membrane potentials, action potentials, and synaptic potentials; properties of synaptic transmission, information transduction and coding in sensory pathways, and neural control of movement; development of and trophic interactions between cells of nervous system.

Mr. O'Lague

**M173. Anatomy and Physiology of Sense Organs.** (Formerly numbered 173.) (Same as Physiological Science M173.) Lecture, three hours; discussion, one hour. Prerequisites: courses 171 (or Physiological Science 111A) or M175A-M175B (or Physiological Science M180A-M180B) or equivalent. Structure and function of sense organs. Adoption of quantitative and comparative approach to provide insight into evolution of sense organs in both invertebrates and vertebrates.

Mr. Fain, Mr. Narins, Mr. Simmons

**C174A-C174F. Advanced Topics in Cell and Molecular Biology (2 units each).** (Formerly numbered 174A-174F.) Lecture, three hours; discussion, one hour. Series of five-week two-unit courses on recent developments in fields of cell and molecular biology. Two courses to be presented in succession in same term whenever offered; students may take either or both. Concurrently scheduled with courses C222A-C222F:

**C174A. Molecular Evolution.** Prerequisites: courses 100B, 108, Chemistry 153B. Current developments in the field of molecular evolution. Constructing evolutionary trees at molecular level; formal testing of evolutionary hypotheses using sequencing data.

Mr. Lake

**C174B. Molecular Biology of Cell Nucleus.** Prerequisites: courses 100B, 108, Chemistry 153B. Animal cell nucleus regulation of cell metabolism. Structure/function relationships, nuclear-cytoplasmic exchange, DNA replication and gene expression.

Ms. Kasamatsu

**C174C. Eukaryotic DNA Replication and Cell Cycle Control.** Prerequisites: courses 100B, 108, Chemistry 153B. Enzymatic mechanisms of DNA replication, protein kinases and cell cycle control, regulation of genes encoding DNA replication proteins.

Mr. Ray

**C174D. Molecular Biology of Extracellular Matrix.** Prerequisites: courses 100B, 108, Chemistry 153B. Recommended: course 138. Synthesis of key extracellular matrix proteins and their assembly into supramolecular structures. Interactions of matrix proteins with cells and their influence on tissue formation.

Mr. Fessler

**C174E. Chromosome Structure and Gene Expression.** Prerequisites: courses 100B, 108, Chemistry 153B. Genetic and biochemical approaches to analysis of relation between chromosome structure, genetic regulatory factors, and gene expression.

Mr. Grunstein

**C174F. Molecular Parasitology.** Examination of recent advances in molecular biology of parasites and host/parasite relationship. Specific topics include parasite development, antigenic variation in trypanosomes, RNA editing, prospects for parasitic vaccines.

Mr. Simpson

**M175A-M175B-M175C. Neuroscience: From Molecules to Mind (5 units each).** (Same as Neuroscience M101A-M101B-M101C, Physiological Science M180A-M180B-M180C, and Psychology M117A-M117B-M117C.) Lecture, four hours; discussion, one hour:

**M175A. Cellular Mechanisms.** Prerequisites: course 9, Chemistry 132A, Physics 3B or 6B or 8C. Cellular physiology, pharmacology, molecular biology, and development of nervous system.

Mr. Feldman, Mr. Narins (F)

**M175B. Integrative Mechanisms.** Prerequisite: course 171 (or Physiological Science 111A or Psychology 115) or M175A (or Neuroscience M101A or Physiological Science M180A or Psychology M117A). Central and reflex mechanisms of homeostasis, sensory information processing, and motor control.

Mr. Schein, Ms. Smith (W)

**M175C. Neural Bases of Behavior.** Prerequisite: course 171 (or Physiological Science 111A or Psychology 115) or M175B (or Neuroscience M101B or Physiological Science M180B or Psychology M117B). Neural mechanisms underlying motivation, learning, and cognition.

Mr. Gallistel (Sp)

**179. Invertebrate Endocrinology.** Lecture, three hours. Prerequisite: course 158 or 166 or 167 or consent of instructor. Comprehensive treatment of invertebrate endocrinology.

Mr. Engelmann

**181. Parasitology and Symbiosis (6 units).** Lecture, three hours; laboratory, six hours. Prerequisites: courses 5, 9 or equivalent. Introduction to principles, biology, and evolution of infectiousness, symbiosis, and parasitism, emphasizing protozoan and helminth parasites, including those of man.

**182. Experimental Parasitology.** Laboratory, eight hours. Prerequisite: consent of instructor. Introduction to use of parasites in experiments concerning basic biological problems and to problems concerning parasitism.

**M185A. Immunology.** (Formerly numbered CM185.) (Same as Microbiology M185A and Microbiology and Immunology M185A.) Lecture, three hours; discussion, one hour. Prerequisites: courses 9, 100A, 108 or equivalent. Recommended prerequisites or corequisites: course 100B, Chemistry 153A, 153L. Introduction to experimental immunobiology and immunology; cellular and molecular aspects of humoral and cellular immune reactions.

Mr. Clark, Ms. Morrison

**CM185B. Intermediate Immunology.** (Same as Microbiology CM185B.) Lecture, three hours; discussion, one hour. Prerequisite: course M185A or equivalent. In-depth exploration of topics introduced in course M185A. Concurrently scheduled with course CM285.

Mr. Aguilera, Mr. Kronenberg, Mr. Sercarz

**188. Seminar: Biology and Society (2 units).** Prerequisite: consent of instructor. Investigations and discussions of current socially important issues involving substantial biological considerations, either or both as background for policy and as consequences of policy. May be repeated once for credit.

**M189A-M189B. Theoretical Behavioral Ecology.** (Same as Anthropology M189A-M189B.) Lecture, three hours. Prerequisites: one upper division introduction to behavioral ecology course, one university-level mathematics course (preferably calculus or probability and statistics). Course M189A or consent of instructor is prerequisite to M189B. Students expected to do simple algebra, elementary calculus, and probability. A rich body of mathematical theory describing the evolution of animal behavior exists. Introduction to this body of theory at a pace and mathematical level that allows students to grasp this information. Within each area of theory (e.g., kin selection, optimal foraging theory, etc.), presentation of basic corpus of models so that students understand assumptions that underlie the models, and how main results are derived. Presentations supplemented by a survey of results printed in the literature, especially those derived using more advanced methods.

Mr. Boyd

**190A-190D. Honors Research in Biology (2 to 4 units each).** Prerequisites: course 5L, senior standing, consent of undergraduate adviser. Individual research designed to broaden and deepen students' knowledge of some phase of biology. Must be taken with Biology Department faculty for at least two terms and for a total of at least eight units. In Progress grading (credit to be given only on completion of course 190B). Students may elect to enroll in additional research through courses 190C-190D (letter grading). A report on progress must be presented to undergraduate adviser each term a 190 course is taken. Eight units may be applied toward Biology Department majors.

(F,W,Sp)

**192. Teaching Practicum in Biology (1 to 4 units).** Prerequisites: junior or senior biology major, consent of department. Training and supervised practicum for advanced undergraduates in teaching biology. Students serve as junior teaching assistants and assist in preparation of materials and development of innovative programs. Consult Undergraduate Office for further information. May not be applied toward course requirements for any Biology Department major. P/NP or letter grading.

**193. Teaching Practicum in Cell and Molecular Biology (1 to 4 units).** Prerequisites: junior or senior cell and molecular biology major, consent of department. Training and supervised practicum for advanced undergraduates in teaching cell and molecular biology. Students serve as junior teaching assistants and assist in preparation of materials and development of innovative programs. Consult Undergraduate Office for further information. May not be applied toward course requirements for any Biology Department major. P/NP or letter grading.

**199. Special Studies (2 to 16 units).** Prerequisites: course 5L, consent of instructor and undergraduate adviser based on written proposal outlining the study or research to be undertaken. Studies to involve laboratory or field-related research, not literature surveys or library research. Proposal should be worked out in consultation with instructor and submitted for approval to undergraduate adviser before the day instruction begins in that term. At end of term a report describing progress of the study or research and signed by the student and instructor must be presented to undergraduate adviser. Students who wish to take more than eight units of course 199 in any one term must obtain authorization from department chair and appropriate dean. Only one 199 course may be applied toward Biology Department majors.

(F,W,Sp)

## Graduate Courses

Consent of instructor is required for admission to all graduate courses. Additional prerequisites are stated in the course descriptions.

**200A. Seminar: Integrative Biology (1 unit).** (Formerly numbered 200.) Limited to and required of all first-year integrative biology graduate students. Orientation to integrative biological research through attendance at integrative biology division's weekly seminar series. S/U grading.

(F,Sp)

**200B. Research Trends in Integrative Biology (2 units).** (Formerly numbered 200.) Lecture, one hour; discussion, two hours. Limited to and required of all first-year integrative biology graduate students. Orientation to integrative biological research through attendance at integrative biology division's weekly seminar series, together with weekly discussions of recently published articles on related topics. (W)

**201. Use of the Computer in Biology (2 units).** Lecture, two hours; laboratory, one hour. Introduction to use of IBM PC microcomputer and VAX minicomputer in biological research. S/U grading.

Mr. Simpson

**203. Marine Botany and Physiology.** Lecture, two hours; discussion, one hour; laboratory, six hours; experimental project. Prerequisites: graduate standing, consent of instructor. Structure, reproduction, life histories, and biology of marine algae, with emphasis on physiological ecology and biochemistry. Techniques in culture and physiological, ecological, and biochemical investigation of algae. Given off campus at a marine science center.

**204. Advanced Biology of Algae.** Lecture, four hours; discussion, one hour. Prerequisite: consent of instructor. Consideration of current research in experimental phycology. Topics include discussion of appropriate aspects of chemical and physical oceanography and limnology; algal physiology; biochemistry, physiological ecology, and algal processes in ocean and freshwater habitats. Mr. Chapman

**205. Marine Invertebrate Biology.** Lecture, four hours; laboratory, eight hours. Prerequisite: consent of instructor. Functional morphology, life histories, and systematics of marine invertebrates of all major and most minor taxa; emphasis on the living animal and its habitat. Given off campus at a marine science center.

**206. Advanced Ichthyology.** Lecture, three hours; laboratory, three hours. Prerequisite: course 111 or 112. Advanced study of various aspects of fish biology. Theme varies from year to year. May be repeated for credit.

Mr. Buth

**208. Advanced Vertebrate Morphology.** Lecture, two hours; laboratory, eight hours. Prerequisites: course 110 or equivalent, consent of instructor. Emphasis on a functional approach to evolution of vertebrate locomotor, feeding, and circulatory systems. Laboratory includes comparative and experimental analyses of morphological adaptation. Independent project required. May be repeated once for credit.

Ms. Van Valkenburgh

**209. Behavior of Arthropods.** Lecture, three hours; discussion, one hour. Prerequisites: course 105 or 107 or equivalent, consent of instructor. Advanced study of topics in behavior of terrestrial arthropods, including communication, feeding, reproductive, and social behavior. Emphasis on both mechanistic and adaptive approaches toward understanding behavior. Independent project required.

**210. Advanced Ornithology.** Lecture, two hours; laboratory, two hours; fieldwork, two hours. Prerequisites: course 114 or equivalent, consent of instructor. Advanced study of topics in modern avian biology. Emphasis on experimental approaches to investigations of physiology (energetics, nutrition, osmoregulation), ecology (population and community organization), and behavior (foraging, breeding, sociality).

**211. Physiology and Ecology of Digestion.** Lecture, two hours; discussion, two hours; laboratory, two hours. Prerequisite: course 166 or 167 or 170 or equivalent. Introduction to function of digestive systems and intestinal adaptations to diet, stage of development, and nutritional state. Principles of digestion and membrane transport emphasized in lecture and discussion sections; modern techniques taught in laboratory. Students conduct individual projects in lab and field.

**C212. Experimental Invertebrate Zoology (6 units).** Lecture, two hours; laboratory, 12 hours. Prerequisites: courses 5, 5L, 6, consent of instructor. Advanced treatment of physiology, behavior, and ecology of invertebrates, with emphasis on independent laboratory and field investigations. Concurrently scheduled with course C104. Mr. Hamner, Mr. Morin

**C214. Physiological Ecology of Desert Animals.** Lecture, three hours; laboratory, one hour; field trips, four hours. Prerequisites: courses 5, 6. Consideration of physiological, behavioral, morphological, and ecological mechanisms desert animals use to enhance their survival in an arid habitat. Concurrently scheduled with course C134A.

Mr. Nagy

**C215. Introduction to Marine Science.** (Formerly numbered C219.) Lecture, three hours; laboratory, three hours; weekend field trips. Prerequisites: courses 5, 5L, and 6, or consent of instructor. Strongly recommended for prospective MBQ students. Introduction to physical, chemical, and biological aspects of marine science. Emphasis on biological systems and natural communities. Concurrently scheduled with course C109.

**216. Quantitative Methods in Behavior and Ecology.** Lecture, two hours; laboratory, six hours. Prerequisites: course 122 or 129 or equivalent, consent of instructor. Quantitative methods of data collection and analysis in behavioral and ecological research. Lectures review general nature of quantitative problems that arise in behavior and ecology and statistical methods used to solve them. Laboratory exercises emphasize analysis, using comprehensive statistical software routines on personal microcomputers, of the kinds of data that frequently arise in field biological research.

Mr. R. Gibson

**217. Marine Ecology.** Lecture, four hours; discussion, one hour. Prerequisites: graduate standing, consent of instructor. Structure, diversity, and energetics of marine communities; behavior, population dynamics, and biogeography of component species; associated oceanography and geology. Given off campus at a marine science center.

Mr. Vance

**218. Oceanology.** Lecture, four hours; discussion, one hour. Prerequisites: graduate standing, consent of instructor. Ecology and dynamics of pelagic and benthic associations; physicochemical properties of seawater and marine substrates and their biological significance; qualitative and quantitative methods of oceanology. Given off campus at a marine science center.

**C219. Mathematical Ecology.** (Formerly numbered 215.) Lecture, three hours. Prerequisites: Mathematics 31A, 31B, 32A. Differential equation models of population growth explore theory of evolutionary ecology to determine why natural environments of the world support the kinds of living organisms they do and why organisms of the world possess the adaptations they do. Concurrently scheduled with course C119.

Mr. Vance

**C220. Cell and Molecular Biology of Plants.** Lecture, three hours; discussion, one hour. Prerequisite: graduate standing. Structure, function, and biogenesis of cells, with emphasis on organelles and metabolic processes specific to plants. Comparison with equivalent processes in algae and bacteria. Concurrently scheduled with course C149.

Mr. Thornber

**C222A-C222F. Advanced Topics in Cell and Molecular Biology (2 units each).** Lecture, three hours; discussion, one hour. Series of five-week two-unit courses on recent developments in fields of cell and molecular biology. Two courses to be presented in succession in same term whenever offered; students may take either or both. Concurrently scheduled with courses C174A-C174F:

**C222A. Molecular Evolution.** Prerequisites: courses 100B, 108, Chemistry 153B. Current developments in the field of molecular evolution. Constructing evolutionary trees at molecular level; formal testing of evolutionary hypotheses using sequencing data. Original research proposal required. S/U or letter grading.

Mr. Lake

**C222B. Molecular Biology of Cell Nucleus.** Prerequisites: courses 100B, 108, Chemistry 153B. Animal cell nucleus regulation of cell metabolism. Structure/function relationships, nuclear-cytoplasmic exchange, DNA replication and gene expression. Original research proposal required.

Ms. Kasamatsu

**C222C. Eukaryotic DNA Replication and Cell Cycle Control.** Prerequisites: courses 100B, 108, Chemistry 153B. Enzymatic mechanisms of DNA replication, protein kinases and cell cycle control, regulation of genes encoding DNA replication proteins. Original research proposal required.

Mr. Ray

**C222D. Molecular Biology of Extracellular Matrix.** Prerequisites: courses 100B, 108, Chemistry 153B. Recommended: course 138. Synthesis of key extracellular matrix proteins and their assembly into supra-molecular structures. Interactions of matrix proteins with cells and their influence on tissue formation. Original research proposal required.

Mr. Fessler

**C222E. Chromosome Structure and Gene Expression.** Prerequisites: courses 100B, 108, Chemistry 153B. Genetic and biochemical approaches to analysis of relation between chromosome structure, genetic regulatory factors, and gene expression. Original research proposal required.

Mr. Grunstein

**C222F. Molecular Parasitology.** Examination of recent advances in molecular biology of parasites and host/parasite relationship. Specific topics include parasite development, antigenic variation in trypanosomes, RNA editing, prospects for parasitic vaccines. Original research proposal required.

Mr. Simpson

**224. Marine Molecular Biology (8 units).** Lecture, three hours; laboratory, eight hours. Prerequisites: background in marine sciences, basic cell biology and biochemistry, consent of instructor. Ten-week intensive course designed to train marine biologists in advanced techniques of cell and molecular biology. Independent project required. Given off campus at a marine science center.

**C225. Tropical Animal Communication (4 or 8 units).** Prerequisites: courses 5, 6. Offered either as a four-unit quarter-long course or as an eight-unit Field Biology Quarter course. Four-unit course has lecture, three hours; discussion, two hours. Animal communication behavior, tropical vertebrate biology, and evolution of information processing systems. Eight-unit course covers same basic lecture material in five or six intensive weeks, followed by extended field trips where students do individual projects in animal communication. Concurrently scheduled with course C125. S/U or letter grading.

Mr. Narins

**M226A-M226B. Principles of Microbial Pathogenesis.** (Same as Microbiology M226A-M226B and Microbiology and Immunology M226A-M226B.) Lecture, one hour; discussion, three hours. Prerequisites: Microbiology and Immunology 202A, 202B, 202C, and 202D, or equivalent, or consent of instructor. Lecture/discussion format designed to analyze basic pathogenesis of infections. Emphasis on molecular and cellular approaches to understand host-microbial interaction. **M226A.** Bacterial and Mycotic Infections; **M226B.** Parasitic and Viral Infections.

Mr. Ahmed

**C227. Behavioral Ecology (4 or 8 units).** Prerequisites: course 6 and Mathematics 3 or 31 series, or consent of instructor. Offered either as a four-unit quarter-long course or as an eight-unit Field Biology Quarter course. Four-unit course has lecture, three hours; discussion, three hours. Animal communication behavior, island biogeography, and evolution of social behavior. Eight-unit course covers same basic lecture material in five intensive weeks, followed by extended field trip where students do individual projects in behavioral ecology. Concurrently scheduled with course C126. S/U or letter grading.

Mr. Narins

**228. Prokaryotic and Eukaryotic Gene Systems (2 units).** Presentations concerning current experimental approaches in study of DNA replication, organization, transcription, and translation.

Mr. Grunstein, Mr. Ray

**229. Structural Macromolecules.** Lecture, three hours; discussion, one hour. Comprehensive molecular biology of selected structural proteins and polysaccharides, including cellular synthesis, structure and physical properties, and integrated biological functions.

Mr. Fessler



**M230B. Structural Molecular Biology.** (Same as Chemistry M230B.) Lecture, three hours; discussion, one hour. Prerequisites: Physics 6C, Mathematics 3C, consent of instructor. Selected topics from principles of biological structure; structures of globular proteins and RNAs; structures of fibrous proteins, nucleic acids, and polysaccharides; harmonic analysis and Fourier transforms; principles of electron, neutron, and X-ray diffraction; optical and computer filtering; three-dimensional reconstruction. S/U or letter grading. Mr. Eisenberg

**M230D. Structural Molecular Biology Laboratory (2 units).** (Same as Chemistry M230D.) Laboratory, 10 hours. Corequisite: course M230B. Methods in structural molecular biology, including experiments utilizing single crystal X-ray diffraction, low angle X-ray diffraction, electron diffraction, optical diffraction, optical filtering, three-dimensional reconstruction from electron micrographs, and model building. Mr. Eiserling, Mr. Lake

**M231A-M231B-M231C. Advanced Evolutionary Biology.** (Formerly numbered 231A-231B-231C.) (Same as Earth and Space Sciences M243A-M243B-M243C.) Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. Series of advanced studies of concepts and methods in evolutionary biology. Topics may include speciation, extinction, coevolution, fossil record, rates of evolution, contributions of molecular biology in evolutionary studies, and development of evolutionary thought. Students encouraged to take each course in sequence. Themes vary from year to year. May be repeated for credit. S/U or letter grading. **M231A.** Mechanisms of Evolution. Prerequisites: courses 120 and/or 135 or equivalent; **M231B.** Patterns of Evolution; **M231C.** Molecular Evolution.

**M233. Principles, Practices, and Policies in Biotechnology (2 units).** (Same as Biological Chemistry M233, Chemical Engineering M233, Chemistry M233, Microbiology M233, Microbiology and Immunology M233, and Radiological Sciences M233.) Prerequisite: graduate standing or consent of instructor. Presentation of technologies, regulatory practices, and policies required for product development and review of current opportunities for new technology development. Topics include fermentation processes, pilot and large-scale bioprocess technologies, scaleup strategies, industrial recombinant DNA processes, hybridomas, protein engineering, peptide mimetics and rational drug design, medical and microscopic imaging, and intellectual property issues. S/U or letter grading. Mr. Fox, Ms. Morrison

**234. Genetic Control of Development.** (Formerly numbered 234A.) Topics at forefront of molecular developmental biology, including problems in oogenesis and early embryogenesis, pattern formation, axis determination, nervous system development, cellular morphogenesis, and cell-cell and cell-matrix interactions. S/U or letter grading.

**235. Current Topics in *Escherichia coli* Genetics (2 units).** Prerequisite: course 596. Seminar on topics from current literature in *Escherichia coli* molecular genetics, with emphasis on using nonsense suppression to effect protein engineering and to study mechanisms of mutagenesis.

**236. Seminar: Marine Molecular Biology.** Discussion, 10 hours. Prerequisites: course 224, consent of instructor. Seminar on current issues and work in marine molecular biology. Given off campus at a marine science center.

**M237. Introduction to Cellular Physiology and Biophysics (6 units).** (Same as Physiological Science M212 and Physiology M212.) Lecture, five hours. Prerequisites: graduate standing, consent of department and instructor; for upper division undergraduates: consent of instructor. Development of fundamental physiological and biophysical concepts associated with all membranes, membrane channels and transporters, membrane potential, membrane excitability, electrical signal transmission and transduction, and muscle contraction and their application to study of basic cellular processes. Emphasis in laboratory on development of skills using computer programming languages, spreadsheets, and graphics for modeling and analysis of cellular processes.

**238. Structure, Function, and Biogenesis of the Mitochondrion.** Lecture, three hours. Prerequisites: course 158, consent of instructor. Origin, maintenance, and function of the mitochondrion as example of a highly organized subcellular organelle in the eukaryotic cell. Mr. Simpson

**C239. Molecular Basis of Plant Differentiation and Development.** Lecture, three hours; discussion, one hour. Prerequisites: courses 5, 9 and 108 or equivalent, 100A. In-depth study of basic processes of growth differentiation and development in plants and molecular mechanisms underlying these processes. Discussion of a variety of plant systems, with focus on developing critical understanding of current experimental basis of research in this field. Concurrently scheduled with course C141. Preparation and presentation of term paper, in addition to other coursework, required of graduate students. Ms. Erickson, Ms. Tobin

**240. Physiology of Marine Animals.** Lecture, four hours; discussion, one hour. Prerequisite: graduate standing or consent of instructor. Lecture and laboratory studies on cellular, tissue, organ, and animal physiology; regulatory biology; metabolic characteristics of cells, energy transformations. Given off campus at a marine science center.

**241. Laboratory in Advanced Electrophysiology (8 units).** Laboratory, 12 hours. Prerequisite: consent of instructor. In-depth involvement in individual research projects under staff guidance. Approximately two projects each term. May be repeated twice for credit. Mr. O'Laigue

**242. Topics in Neurobiology.** Lecture, three hours. Prerequisite: course 171 or equivalent. Selected current problems in neurobiology discussed in depth, with emphasis on analysis of original papers. May be repeated for credit. Mr. O'Laigue

**243. Animal Communication.** Lecture, three hours; discussion, one hour. Prerequisites: Mathematics 3C, Physics 6C, consent of instructor. Open to qualified undergraduates with consent of instructor. Physical properties of animal signals and physiological mechanisms underlying their generation and reception. Lectures treat signal analysis, signal transmission, and receptor design in light of constraints placed on each of the sensory modalities. Examples of communication systems using visual, auditory, chemical, electrical, and magnetic cues, with emphasis on biological adaptations for efficiently signaling species-specific information. Mr. Narins

**244. Advanced Insect Physiology.** Lecture, two hours; laboratory, five hours. Prerequisite: course 168 or consent of instructor. Detailed discussion of current problems in insect physiology, with advanced laboratory. Mr. Engelmann

**245. Advanced Topics in Cell Biology (2 units).** Seminar, one hour; discussion, one hour. Prerequisite: course 138 or 158 or equivalent. Includes seminar section on a current topic in cell biology and discussion section on seminar topic. Students prepare one such seminar each term, using reading list provided as background, and select a topic with aid of current literature and consent of instructor. May be repeated for credit. S/U grading.

**M246. Computer Analysis of Genetic Organization.** (Same as Microbiology M246.) Lecture, two hours; laboratory, six hours. Prerequisite: course 108 or Microbiology C119 or equivalent. Lectures and laboratory instruction in contemporary procedures for analysis of nucleic acid and protein sequence data with the computer. No prior computer experience necessary; students gain both general and specialized facility with IBM PC and Digital VAX computers. Mr. Nierlich, Mr. Simpson (F, alternate years)

**247. Advanced Plant Biology.** Lecture, three hours; discussion, two hours. Prerequisite: course C141 or 162 or equivalent. Open to undergraduates with consent of instructor. Designed to expose first-year graduate students to topics of current interest in plant biology. Subjects include plant genetics, growth and development, organelle structure, development and function, and plant-specific metabolic processes (photosynthesis, nitrogen fixation, metabolism of small molecules). S/U or letter grading.

**M248. Molecular Genetics.** (Same as Biological Chemistry M248 and Microbiology M248.) Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Basic concepts in modern genetics, with examples from both eukaryotic and prokaryotic systems. Emphasis on use of genetic techniques for addressing fundamental questions in biochemistry and molecular biology. Topics include mutagenesis, mutant selection, recombination, genetic mapping, complementation, transposable elements, gene organization, genetic regulation, and molecular evolution.

**249. Biochemistry of Parasitism.** Lecture, three hours. Biochemical and physiological aspects of parasite/host relationships.

**251. Seminar: Systematics (2 units).** Discussion, two to four hours. Prerequisite: consent of instructor. Current topics in systematic biology, including methods development and specific applications in study of phylogeny. Theme varies from year to year. May be repeated for credit. Mr. Buth

**253. Seminar: Plant Structure (2 units).** Mr. A. Gibson

**254. Seminar: Plant Morphogenesis (2 units).** Ms. Hirsch

**255. Seminar: Invertebrate Zoology (2 units).** Mr. Morin, Mr. Muscatine

**CM256. Human Genetics.** (Same as Microbiology CM256.) Lecture, three hours; discussion, one hour. Prerequisites: courses 100A, 108 or equivalent. Strongly recommended: course 100B. Application of genetic principles in human populations, with emphasis on cytogenetics, biochemical genetics, population genetics, and family studies. Lectures and readings in the literature, with focus on current questions in the fields of medical and human genetics and methodologies appropriate to answer such questions. Concurrently scheduled with course CM156. Independent research project required of graduate students. Mr. Lusia, Mr. Merriam

**257A. Gene Manipulation: Genetic Engineering.** (Formerly numbered 257.) Lecture, three hours; discussion, two hours. Prerequisite: course 138. Survey of methods and applications of recombinant DNA research as applied to both basic scientific research and the biotechnology industry. Mr. Salsler

**257B. Gene Manipulation: Advanced Course (2 units).** Lecture, 90 minutes; discussion, one hour. Prerequisite: course 157 or 257A. Additional topics in methods and applications of recombinant DNA research as applied to both basic scientific research and the biotechnology industry. S/U or letter grading. Mr. Salsler

**M258A. Molecular Genetic Mechanisms of Immune Response (2 units).** (Same as Microbiology M258A and Microbiology and Immunology M258A.) Lecture, two hours; discussion, two hours. Prerequisite: course CM185B or CM285 or Microbiology and Immunology 202A or consent of instructor. Reading and discussion of current research articles on immunoglobulin I and II, oncogenes of immune system, T cell antigen receptor, and loci affecting differentiation. S/U or letter grading.

Mr. Kronenberg, Mr. Wall (W, five weeks)

**M258B. Biology of B Cells: Development, Repertoire, and Activation (2 units).** (Same as Microbiology M258B and Microbiology and Immunology M258B.) Lecture, two hours; discussion, two hours. Prerequisite: course CM185B or CM285 or Microbiology and Immunology 202A or consent of instructor. Reading and discussion of current research articles on B cell development, repertoire, and growth and differentiative regulation. S/U or letter grading.

Mr. Braun, Mr. Stevens (W, five weeks)

**M258C. T Cells (2 units).** (Same as Microbiology M258C and Microbiology and Immunology M258C.) Lecture, two hours; discussion, two hours. Prerequisites: course CM185B, Microbiology and Immunology 202A. Reading and discussion of current research articles on molecular and cellular aspects of T cell function, including receptors and activation pathways, memory, tolerance, and specialized subjects and their functions. Mr. Clark (Sp, five weeks)

**M258D. Molecular Interactions in Immune Responses (2 units).** (Same as Microbiology M258D and Microbiology and Immunology M258D.) Lecture, two hours; discussion, two hours. Prerequisite: course CM185B or CM285 or Microbiology and Immunology 202A or consent of instructor. Reading and discussion of current research articles on immunology of antibodies, antigens, and complement, antigenic recognition, antibody restriction. S/U or letter grading. Ms. Morrison (F, five weeks)

**M258E. Immunopathology: Immunology of Disease (2 units).** (Same as Microbiology M258E and Microbiology and Immunology M258E.) Lecture, two hours; discussion, two hours. Prerequisite: course CM185B or CM285 or Microbiology and Immunology 202A or consent of instructor. Reading and discussion of current research articles on tolerance and autoimmunity, autoimmune disease models, immune complex disease, immediate hypersensitivity and its cellular basis, and natural and acquired immune deficiency disease. S/U or letter grading.

Mr. Porter (Sp, five weeks, alternate years)

**M258F. Immune Regulation (2 units).** (Same as Microbiology M258F and Microbiology and Immunology M258F.) Lecture, two hours; discussion, two hours. Prerequisite: course CM185B or CM285 or Microbiology and Immunology 202A or consent of instructor. Reading and discussion of current research articles on idiotype networks, suppressor T cells, tolerance at T and B cell levels, and Ir gene control. S/U or letter grading. Mr. Sercarz (F, five weeks)

**259. Seminar: Herpetology (2 units).** Discussion, three hours. Prerequisite: consent of instructor. Seminar on current approaches to herpetology. Main theme varies from year to year in areas such as biogeography, ecology, behavior, environmental physiology.

**260. Seminar: Biology of Terrestrial Vertebrates (2 units).** Mr. R. Gibson

**261. Molecular Neurobiology.** Lecture, two and one-half hours; discussion, one hour. Prerequisite: course 171. Examination of impact of molecular biology on study of neuroscience. Topics include molecular biological approaches to structure and function of proteins important in nervous system, gene expression and regulation in nervous system, neural development, learning behavior, and neurological disease. S/U or letter grading. Mr. Tobin

**262. Seminar: Vertebrate Paleontology (2 units).** Ms. Van Valkenburgh

**263. Seminar: Population Genetics (2 or 4 units).** Discussion, three to six hours. Prerequisite: consent of instructor. Seminar on topics of current interest in population genetics, such as kin selection, sociobiology, cultural evolution, conservation genetics, etc.

Mr. Taylor

**264. Seminar: Stomatal Function.** Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. Open to undergraduates with consent of instructor. Structure and function of guard cells; gas exchange; environmental and hormonal regulation of stomatal responses; sensory transduction; stomatal adaptations. Mr. Zeiger

**265. Seminar: Biophysical Plant Ecology (2 units).** Mr. Nobel

**M266A-M266B-M266C. Seminars: Molecular Embryology (2 units each).** (Same as Biological Chemistry M266A-M266B-M266C.) Prerequisite: consent of instructor. Advanced course in developmental genetics and biochemistry, with emphasis on early development. Intended mostly for students actively working or highly interested in embryology. S/U grading. Ms. Lengyel, Mr. Merriam

**267. Seminar: Current Topics in Evolutionary Ecology (2 units).** Mr. Cody

**268. Seminar: Population Biology (2 units).** Mr. Cody, Mr. Hespeneheide, Mr. Vance

**269. Seminar: Animal Ecology (2 units).** Discussion, three hours. Advanced study of specific topics in animal ecology and related fields.

Mr. Cody, Mr. Hespeneheide

**270. Seminar: Environmental Physiology (2 units).** S/U grading. Mr. Nagy

**271. Seminar: Phycology and Mycology (2 units).** Prerequisite: course 101A or equivalent or consent of instructor. Advanced study in biology of algae and fungi. Topics in physiological ecology, physiology, and biochemistry of algae and fungi, and their industrial uses. Algae and fungi as experimental organisms. Phylogeny and origin of eukaryote organisms. Evolutionary origin of chloroplasts. Mr. Chapman

**272. Seminar: Marine Biology (2 units).** Mr. Gordon, Mr. Morin, Mr. Muscatine

**273. Seminar: Entomology (2 units).** Discussion of specific topics in entomology and related fields. Main theme varies from year to year, but usually emphasizes areas such as behavior, ecology, and evolution. S/U grading.

**274. Seminar: Behavioral Ecology (2 units).** Discussion of theoretical and empirical aspects of topics in behavioral ecology. S/U or letter grading.

Mr. R. Gibson (W)

**276. Seminar: Molecular Genetics (2 units).** Topics vary each term. Mr. Salsler

**277. Seminar: Genetics (2 units).** Mr. Merriam

**278. Seminar: Molecular Genetics of Development (2 units).** Prerequisites: graduate standing, consent of instructor. Topics vary from year to year, with focus on establishment of position and pattern during embryogenesis by interaction of signal transduction systems and transcription factors. S/U or letter grading. Ms. Lengyel

**279. Seminar: Molecular Neurobiology (2 units).** Lecture, three hours. Prerequisite: graduate standing. Current topics in molecular and developmental neurobiology. S/U or letter grading.

Mr. Crews, Mr. Tobin

**M280. Cellular and Molecular Developmental Neurobiology.** (Same as Anatomy M204, Neuroscience M204, Physiology M204, and Psychiatry M204.) Lecture, three hours; discussion, one hour. Prerequisites: Neuroscience M201, M202, and M203, or Biological Chemistry 201A-201B, or consent of instructor. Cellular and molecular processes that regulate development of nervous systems of vertebrates and invertebrates. Topics include regional specification in early neurogenesis, generation of neuronal diversity, cell surface interactions and growth factors, neuronal and glial proliferation and migration, axonal outgrowth and guidance, synaptogenesis, trophic interaction, plasticity, regeneration, and aging.

Mr. de Vellis (W)

**281. Seminar: Molecular Biology (2 units).** Ms. Kasamatsu

**282. Seminar: Ichthyology (2 units).** Prerequisite: course 111 or 112. Student presentations and discussion of specific topics in ichthyology. Theme varies from year to year. May be repeated for credit.

Mr. Buth

**283. Seminar: Topics in Cell Biology (2 units).** Discussion of various topics on biology of eukaryotic cells. Topics vary from year to year and include bioenergetics, motility, organelle DNA, membrane structure and function, oncogenic transformation, nuclear organization and function. Mr. Simpson

**284. Seminar: Structural Macromolecules (2 units).** Lecture, one hour; discussion, three hours. Presentation and discussion of current topics in extracellular active structural macromolecules — their synthesis, structure, and roles in cell and developmental biology. Mr. Fessler

**CM285. Intermediate Immunology.** (Formerly numbered CM285B.) (Same as Microbiology CM285 and Microbiology and Immunology M285.) Lecture, three hours; discussion, one hour. Prerequisite: course M185A or equivalent. Recommended corequisite: Chemistry 153B. In-depth exploration of topics introduced in course M185A. Concurrently scheduled with course CM185B.

Mr. Aguilera, Mr. Kronenberg, Mr. Sercarz (W)

**286. Seminar: Plant Development (2 units).** Lecture, one hour; discussion, two hours. Prerequisites: one plant physiology course and at least one advanced undergraduate or graduate plant development or biochemistry course. Seminar on specific topics in plant development. Content varies each term. S/U grading. Mr. Phinney, Ms. Tobin

**288. Seminar: Plant Cell Biology (2 units).** Recommended (but not prerequisite): course 162. Ms. Gonzalez

**289. Current Topics in Plant Molecular Biology (2 units).** (Formerly numbered 296.) Discussion, one hour. Recent research developments in the field of plant molecular biology. Opportunities for graduate students to discuss individual research work. S/U grading. Ms. Hirsch

**290. Seminar: Comparative Physiology (2 units).** Mr. Gordon, Mr. Narins

**291. Seminar: Physiology and Biochemistry of Arthropods (2 units).** Mr. Engelmann

**292. Seminar: Molecular Evolution (2 units).** (Formerly numbered 285.) Discussion, three hours. Detailed analysis of current understanding of evolution of molecular sequences and structures. Mr. Lake

**M293A. Seminar: Current Topics in Immunobiology of Cancer (2 units).** (Same as Microbiology M262A and Microbiology and Immunology M262A.) Prerequisite: consent of instructor. Review of recent literature in immunology, biology, and biochemistry of cancer, with emphasis on fundamental studies involving cell-mediated immunity, humoral response, tumor specific antigens, and new techniques. Discussion of reports on scientific meetings. May be repeated for credit. S/U grading. Mr. Bonavida (F,W,Sp)

**M293B. Immunology of AIDS (2 units).** (Same as Epidemiology M214, Microbiology M262B, and Microbiology and Immunology M262B.) Lecture, one hour; discussion, one hour. Prerequisites: courses M258B, M258C, Microbiology and Immunology 202A, 202B, 202C, 202D, or equivalent, consent of instructor. Lecture and student discussion of assigned publications. Topics include specific anti-HIV immune responses, activation of immune system by HIV, and basic mechanisms that underlie HIV-induced immunodeficiency. S/U or letter grading. Ms. Giorgi (W)

**M293C. Biological Individuality and Immunity (2 units).** (Same as Microbiology M262C and Microbiology and Immunology M262C.) Prerequisite: course M258C. Review of current literature in the field of immunogenetics, with emphasis on fundamental studies involving genetic and immunologic principles and techniques. Selected topics discussed and results interpreted; conclusions and experimental methods evaluated. (Sp, alternate years)

**M293D. Selected Topics in Immunology (2 units).** (Same as Microbiology M262D and Microbiology and Immunology M262D.) Prerequisite: consent of instructor. Student participation in discussions related to various topics in immunology. May be repeated for credit. S/U or letter grading. (F,W,Sp)

**294. Seminar: Current Aspects of Photosynthesis (2 units).** Mr. Thornber

**295. Seminar: Neurophysiology (2 units).** Mr. O'Lague

**296AA-296AZ. Advanced Topics in Molecular, Cellular, and Developmental Biology (2 units each).** Discussion, three hours. Prerequisite: consent of instructor. Advanced study and analysis of current topics in cell, molecular, and developmental biology. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading.

**296BA-296BZ. Seminars: Integrative Biology — Cellular, Organismic, and Population (1 to 4 units each).** Discussion, three hours. Prerequisite: consent of instructor. Advanced study and analysis of current topics in cellular, organismic, and population biology. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading.

**297. Advances in Molecular Analysis of Plant Development and Plant/Microbe Interactions (2 units).** Prerequisite: consent of instructor. Recent advances in plant molecular biology, with emphasis on control of gene expression both during plant development and in plant/microbe interactions. S/U grading. Ms. Hirsch, Mr. Singh

**M298. Seminar: Current Topics in Molecular Biology (2 units).** (Same as Biological Chemistry M298, Chemistry M298, Microbiology M298, Microbiology and Immunology M298, and Molecular Biology M298.) Prerequisite: consent of instructor and graduate adviser of interdepartmental Molecular Biology Ph.D. Program. Each student conducts or participates in discussions on assigned topics. May be repeated for credit. (F,W,Sp)

**299. Seminar: Parasitology (2 units).**

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495. Preparation for Teaching Biology in Higher Education (2 units).** Prerequisite: graduate standing. Study of problems and methodologies in teaching biology, which includes workshops, seminars, apprentice teaching, and peer observation. S/U grading.

**496. Preparation for Teaching Biology in Higher Education (2 units).** Prerequisite: graduate standing. Strongly recommended as sequel to course 495 discussions on teaching, theory, and development of advanced skills. Study of methods and approaches to teaching of specific areas in biology, with emphasis on laboratory teaching, instructor/student interaction, and undergraduate motivation. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual (or Tutorial) Studies (2 to 12 units).**

**596F. Directed Individual (or Tutorial) Studies (2 to 8 units).** Given off campus at a marine science center.

**597. Preparation for M.A. Comprehensive Examination or Ph.D. Qualifying Examination (2 to 12 units).** May not be applied toward M.A. or Ph.D. course requirements. S/U grading.

**598. M.A. Thesis Research and Writing (2 to 12 units).**

**599. Ph.D. Dissertation Research and Writing (2 to 12 units).**

## Business and Administration (Interdepartmental)

A316 Murphy Hall, (310) 825-1965

### Additional Coursework for Students Interested in Business and Administration

The specialization in business and administration is not a major, but a sequence of supplemental courses designed to prepare students for the complexities of a career in business and administration. Students complete one of the many majors in the College of Letters and Science, as well as a sequence of courses.

For example, if you are interested in international business, you might major in a foreign language to become familiar with the literature and culture of other countries, and then add this program to gain basic understanding of economics, accounting, and statistics. Other students interested in working for a governmental agency or nonprofit corporation might add this program to a social sciences major. Students with an interest in a liberal arts area, who are not planning to go to graduate school, may want to complete this program to prepare for a job in business while pursuing a major of their choice. (Note: This program may **not** be taken with any economics major.)

Completion of this program in addition to a Letters and Science major will give you the basic skills and knowledge most employers seek. Courses used to satisfy either the major or general education requirements may also be applied toward the requirements of this program.

A minimum grade of C- is necessary to apply courses to this program, with an overall C average in the specialization. All courses must be taken for a letter grade; the P/NP option is not acceptable. You may satisfy one of the field studies course requirements by completing an independent studies course (199), taken in an appropriate department with prior consent of the program faculty adviser. You also are required to seek guidance from a field studies coordinator in choosing and researching your topic.

To enter the specialization, you must file a petition with the College Counseling Service in the College of Letters and Science. If you do not complete the program prior to graduation, you must petition out of the program to be eligible to graduate. (Such petitions are automatically granted; there is no penalty for not completing the program.) *All degree requirements, including the specific requirements for this specialization, must be fulfilled within 228 units.* A statement of completion is noted on your tran-

script and diploma when you have successfully completed the requirements for this specialization and for graduation.

For further information and help in assessing the appropriateness of this program and how it relates to your career/education goals, contact the College Counseling Service in the College of Letters and Science.

### Core Courses

*Required:* Economics 1 and 2; Management 1A-1B; one statistics course; one mathematics course (except Mathematics A, 1, 38A, 38B, 104); two courses from English 4, 100W, 129, 131A through 131J, 136A, 136B, 136C (136A and 136B are In Progress courses; credit is given only on completion of both courses).

### Analytical Skills

*Required:* Three courses from one of the following areas: (1) *quantitative methods and formal reasoning:* Anthropology 186A, 186B, Computer Science 141, Economics 141, 147A, 147B, Geography 171, Philosophy 9, 31, 32, Political Science 102, Program in Computing 10A, 10B, 10C, Psychology M142, 144, 150, 151, Sociology 104, 112, 113; (2) *administration:* Political Science M105, 138C, 173, 174, 180, 181, 183A, 183B, 183C, 184, 185, 186.

### Field Studies

*Required:* Any three courses listed below, preferably from within **one** of the 10 fields:

(1) *Communications* — Communication Studies 100, 101, Sociology CM124A, CM124B, 135

(2) *Urban and Regional Development Studies* — Geography 148, M149, 150, 155, 157

(3) *Applied Psychology* — Linguistics 1 or 20, 10, Materials Science and Engineering M107A or Psychology M153, Psychology 110, 111, 120, 121, 187

(4) *Economy and Society* — Anthropology 60, 60P, 150, 167, History 149A, 149B, Political Science 142, M148, Psychology 175, Sociology 158, 168, 173

(5) *Economic Systems* — Economics 110, 180, 190, Political Science 124, 129, 130, Sociology 173

(6) *Professional Writing* — English 129\*, 131A\* through 131J\*, 136A\*, 136B\*

(7) *Accounting* — Management 120A, 120B, 122, 123, 124, 127, 128

(8) *Artificial Intelligence* — Economics 141, 142, 148, Mathematics 142, 149, 172A, 172B

(9) *Operations Research* — Mathematics 115A, 115B, 141A, 141B

(10) *Labor Studies* — History 155A, 155B, Political Science 174, Psychology M137E, 148, Sociology 171

\*Unless taken as part of the core.

# Chemistry and Biochemistry

3010 Young Hall, (310) 825-3958

## Professors

Mario E. Baur, Ph.D. (*Physical Chemistry*)  
 Kyle D. Bayes, Ph.D. (*Physical Chemistry*)  
 Orville L. Chapman, Ph.D. (*Organic Chemistry*)  
 Steven G. Clarke, Ph.D. (*Biochemistry*)  
 Donald J. Cram, Ph.D. (*Saul Winstein Professor of Organic Chemistry, University Professor*)  
 Richard E. Dickerson, Ph.D. (*Biochemistry, Molecular Biology*)  
 David S. Eisenberg, D.Phil. (*Physical Chemistry, Molecular Biology; Distinguished Teaching Award*)  
 Mostafa A. El-Sayed, Ph.D. (*Physical Chemistry; Distinguished Teaching Award*)  
 Christopher S. Foote, Ph.D. (*Organic Chemistry and Biochemistry*)  
 William M. Gelbart, Ph.D. (*Physical Chemistry*)  
 Jay D. Gralla, Ph.D. (*Biochemistry*)  
 M. Frederick Hawthorne, Ph.D. (*Inorganic and Organometallic Chemistry*)  
 Kendall N. Houk, Ph.D. (*Organic and Theoretical Chemistry*)  
 Wayne L. Hubbell, Ph.D. (*Biochemistry; Jules Stein Professor of Ophthalmology*)  
 Michael E. Jung, Ph.D. (*Organic Chemistry and Biochemistry; Distinguished Teaching Award*)  
 Herbert D. Kaesz, Ph.D. (*Inorganic and Organometallic Chemistry*)  
 Daniel Kivelson, Ph.D. (*Physical Chemistry; Distinguished Teaching Award*)  
 Charles M. Knobler, Ph.D. (*Physical Chemistry; Distinguished Teaching Award*)  
 Raphael D. Levine, Ph.D. (*Physical Chemistry*)  
 Harold G. Martinson, Ph.D. (*Biochemistry, Molecular Biology*)  
 Malcolm F. Nicol, Ph.D. (*Physical Chemistry*)  
 Emil Reisler, Ph.D. (*Biochemistry, Molecular Biology*)  
 Howard Reiss, Ph.D., *Recalled* (*Physical Chemistry*)  
 Verne N. Schumaker, Ph.D. (*Biochemistry, Molecular Biology; Distinguished Teaching Award*)  
 Robert L. Scott, Ph.D., *Recalled* (*Physical Chemistry*)  
 David S. Sigman, Ph.D. (*Organic and Biological Chemistry*)  
 Charles E. Strouse, Ph.D. (*Inorganic Chemistry*)  
 Joan S. Valentine, Ph.D. (*Inorganic Chemistry and Biochemistry*)  
 John T. Wasson, Ph.D. (*Geochemistry, Chemistry*)  
 Richard L. Weiss, Ph.D. (*Biochemistry*)  
 Charles A. West, Ph.D., *Recalled* (*Biochemistry; Distinguished Teaching Award*)  
 R. Stanley Williams, Ph.D. (*Physical Chemistry*)  
 Jeffrey I. Zink, Ph.D. (*Inorganic and Physical Chemistry*)

## Professors Emeriti

Frank A.L. Anet, Ph.D.  
 Daniel E. Atkinson, Ph.D.  
 Paul D. Boyer, Ph.D.  
 Paul S. Farrington, Ph.D.  
 Clifford S. Garner, Ph.D., D.Sc.  
 E. Russell Hardwick, Ph.D.  
 Thomas L. Jacobs, Ph.D.  
 John M. Jordan, Ph.D.  
 William G. McMillan, Jr., Ph.D.  
 Roberts A. Smith, Ph.D.  
 Kenneth N. Trueblood, Ph.D. (*Distinguished Teaching Award*)

## Associate Professors

Robert W. Armstrong, Ph.D. (*Organic and Bioorganic Chemistry*)  
 Emily A. Carter, Ph.D. (*Theoretical Chemistry*)  
 Juli F. Feigon, Ph.D. (*Biochemistry*)  
 Peter M. Felker, Ph.D. (*Chemical Physics*)  
 Richard B. Kaner, Ph.D. (*Inorganic and Solid-State Chemistry; Luckman Distinguished Teaching Award*)  
 Sabeeha Merchant, Ph.D. (*Biochemistry, Molecular Biology*)

## Assistant Professors

Delroy A. Baugh, Ph.D. (*Physical Chemistry*)  
 Albert J. Courey, Ph.D. (*Biochemistry*)  
 Miguel Garcia-Garibay, Ph.D. (*Organic Chemistry*)  
 Robin L. Garrell, Ph.D. (*Physical and Analytical Chemistry*)  
 James W. Gober, Ph.D. (*Biochemistry*)  
 Craig A. Mertic, Ph.D. (*Organic and Organometallic Chemistry*)  
 David C. Myles, Ph.D. (*Organic and Bioorganic Chemistry*)  
 Daniel Neuhauser, Ph.D. (*Physical Chemistry*)  
 Yves Rubin, Ph.D. (*Organic and Bioorganic Chemistry*)  
 Todd O. Yeates, Ph.D. (*Biochemistry*)

## Lecturers

Max Kopelevich, Ph.D. (*Chemistry*)  
 Sandra I. Lamb, Ph.D. (*Chemistry*)  
 Betty A. Luceigh, Ph.D. (*Chemistry; Distinguished Teaching Award*)  
 Ariene A. Russell, Ph.D. (*Chemistry*)

## Scope and Objectives

Chemistry is concerned with the composition, structure, and properties of substances, the transformations of these substances into others by reactions, and the kinds of energy changes that accompany these reactions. The department is organized in four interrelated and overlapping subdisciplines that deal primarily with the chemistry of inorganic substances (inorganic chemistry), the chemistry of carbon compounds (organic chemistry), the chemistry of living systems (biochemistry), and the physical behavior of substances in relation to their structures and chemical properties (physical chemistry).

The department offers three undergraduate majors: one in chemistry with emphasis on inorganic, organic, or physical chemistry, a second major in biochemistry, and a third in general chemistry. The chemistry and biochemistry majors are designed to prepare students for graduate studies in each field, for entry into professional schools in the health sciences, and for careers in industries and businesses that depend on chemically and biochemically based technology. The general chemistry major is intended for students who wish to acquire considerable chemical background in preparation for careers outside chemistry.

Graduate research and training programs leading to the M.S. and Ph.D. degrees in Chemistry and in Biochemistry are also offered.

## Undergraduate Study

### Admission

Regular and transfer students who have the prerequisites for the various courses are not thereby assured of admission to those courses. The department may deny admission to any course if a grade of D or below was received in a prerequisite, or if in the opinion of the department the student shows other evidence of inadequate preparation.

**Transfer students** with more than 84 quarter units are accepted into the departmental majors only if they have completed the following courses or their equivalents: the entire Chemistry and Biochemistry 11 series, Mathematics 31A, 31B, 32A, Physics 8A, 8C/8CL, and 8D/8DL, or 6A, 6B, and 6C (or a year of calculus-based physics). For *biochemistry* majors, a year of biology may replace the physics. For *chemistry* majors, Mathematics 32B is recommended.

Transfer students with more than 105 quarter units are accepted into the departmental majors only if they have completed the following courses or their equivalents: the entire Chemistry and Biochemistry 11 series and one term of organic chemistry, Mathematics 31A, 31B, 32A, Physics 8A, 8C/8CL, and 8D/8DL, or 6A, 6B, and 6C (or a year of calculus-based physics). *Biochemistry* majors also should have completed a course in the biology of organisms; *chemistry* majors should have completed Mathematics 32B.

Entering transfer students who have successfully completed a year course (including laboratory) in general college chemistry intended for science and engineering students should enter course 132A. Transfer students should consult the department's Undergraduate Advising Office for assistance in planning their programs.

You may not take or repeat a chemistry or biochemistry course for credit if it is a prerequisite for a more advanced course for which you already have credit.

Courses used to fulfill any of the requirements for any of the departmental majors must be taken for a letter grade. Seminar courses, individual study courses, and research courses (e.g., 190, 199) may not be applied toward the requirements for the majors.

Requirements for the majors are outlined below. For additional information, contact the Undergraduate Advising Office in 4016 Young Hall.

### Preliminary Examination for Chemistry and Biochemistry 11A

If you wish to enroll in Chemistry and Biochemistry 11A or 11AH, you must take the Chemistry Diagnostic Test during the enrollment period for the term in which you intend to take these courses. Enrollment is limited to stu-

dents who have passed the examination. It will be given in CS50 Young Hall on Monday, September 27, 1993; Thursday, November 18, 1993; and Thursday, March 3, 1994.

If your performance on the examination does not qualify you for immediate admission to Chemistry and Biochemistry 11A, but you wish to enroll in a subsequent term, you may be eligible for enrollment in Los Angeles Valley College (LAVC) Chemistry 17. This course is given at UCLA during Fall Quarter expressly for UCLA students preparing for Chemistry and Biochemistry 11A. If you successfully complete LAVC course 17, you are entitled to admission to course 11A for the next three terms. Offered on a Passed/Not Passed basis, LAVC course 17 carries no UCLA graduation credit but does displace four units on your Study List. It is *not* an acceptable substitute for course 11A.

## Bachelor of Science in Chemistry

This program is for students who intend to pursue a career in chemistry.

### Preparation for the Major

*Required:* Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL; Mathematics 31A, 31B, 32A, 32B, 33A; Physics 8A, 8C/8CL, and 8D/8DL (8B/8BL strongly recommended), or 6A, 6B, and 6C\*. Physics 8 series is strongly recommended for students with interest in physical chemistry, biophysical chemistry, or physical organic chemistry. No specific foreign language is required; however, reading knowledge of German (at least at the level of German 3) is strongly recommended if you are planning to pursue graduate work in chemistry.

### The Major

*Required:* Chemistry and Biochemistry 110A, 110B, 113A, 114 (or 114H), 132A, 132B/132BL, 132C/132CL, either 136 or 144, 153A, 153L, 173, and two other upper division or graduate courses in the department, including at least one additional laboratory course from 136, 144, 154, 174, 184.

## Bachelor of Science in Biochemistry

This program is for students preparing for careers in biochemistry or other fields requiring extensive preparation in both chemistry and biology.

### Preparation for the Major

*Required:* Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL; Mathematics 31A, 31B, 32A (33A strongly recommended); Physics 6A, 6B, and 6C, or 8A, 8C/8CL, and 8D/8DL\* (8B/8BL strongly recommended); Biology 5, 5L, 9. Physics 8 series is recommended for students with interest in biophysical chemistry.

## The Major

*Required:* Chemistry and Biochemistry 110A, 132A, 132B/132BL, 132C/132CL, 153A, 153B, 153C, 153L, 154, 156, Biology 108, Microbiology and Molecular Genetics 101; one additional upper division or graduate course in chemistry and biochemistry; two elective upper division or graduate courses in biology, chemistry and biochemistry, mathematics, microbiology, or physics, which must be approved by the undergraduate adviser.

## Bachelor of Science in General Chemistry

This program is for students who wish to acquire considerable chemical background in preparation for careers outside chemistry. The requirements are accordingly quite flexible. The major may be appropriate for some students who plan to enter professional schools, such as those of medicine, dentistry, or public health.

### Preparation for the Major

*Required:* Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL; Mathematics 31A, 31B, 32A, 33A; Physics 6A, 6B, and 6C, or 8A, 8C/8CL, and 8D/8DL\*.

To enter the major, you must complete the preparation courses with at least a 2.0 average.

### The Major

*Required:* Chemistry and Biochemistry 110A, 132A, 132B/132BL, 132C/132CL, 153A, 153L; three additional upper division courses in the department (at least one must be a laboratory course); six additional upper division courses. A 2.0 average is required in all upper division courses in the department. The program should be coherent in terms of your interests and objectives and must be based on a written proposal and approved by the undergraduate adviser.

## Graduate Study

The department offers programs of study and research leading to the M.S. and Ph.D. degrees in both Chemistry and Biochemistry. Candidates for advanced degrees may specialize in the following fields: biochemistry, inorganic, organic, or physical chemistry.

If you are planning to work toward the Ph.D., you should not seek an M.S. degree first but should apply directly to the Ph.D. program. Application materials may be obtained by writing to Phyllis Jergenson, Student Services Director, Department of Chemistry and Biochemistry, 4006 Young Hall, UCLA, Los Angeles, CA 90024-1569.

\*If physics courses from both the 6 and 8 series are taken, undue duplication must be avoided.

## Admission

An excellent undergraduate record is required in addition to the University minimum requirements. Graduate Record Examination (GRE) General and Subject Tests are recommended. GRE examinations are required for international students.

Each student admitted to graduate standing in **chemistry** is given orientation examinations at the beginning of the first term. The main purpose of the orientation requirement is to help you and your adviser plan your course program. The examinations include material covered in upper division courses in physical, organic, and inorganic chemistry. All courses suggested because of deficiencies in undergraduate preparation are normally to be completed by the end of the first year.

There are no orientation examinations in **biochemistry**. You plan a course program in consultation with the biochemistry graduate adviser.

Chemistry students are encouraged to become familiar with research activities of all faculty members in their area of interest and to join a research group as soon as possible. Biochemistry students rotate through three research groups during Fall, Winter, and Spring Quarters, with a final selection made at the end of Spring Quarter.

## Master of Science Degrees

### Course Requirements

**Chemistry M.S.** — At least nine courses (36 units) are required, of which at least five (20 units) must be graduate courses and the remainder upper division courses. You must take a minimum of two courses in your major area and one course in an outside area. Choices may be made from the following:

Inorganic — Chemistry and Biochemistry 174, 207, 271A through 271Z, C275, C276A, 276B, 277, 279, C281

Organic — Chemistry and Biochemistry 207, 232, 236, 241A through 241Z, 242, C243A, C243B, 244A, 244B, 245, 246, C281

Physical — Chemistry and Biochemistry C215A, C215B, 215C, 215D, C223A, C223B, 223C, 225

Substitutions may be made with consent of the area adviser. Courses submitted as part of the M.S. program must be taken on a letter grade basis (exceptions noted below).

Up to 24 units of course 596 (S/U grading) or 598 may be applied toward the total course requirement; up to 20 units may be applied toward the minimum graduate course requirement.

Plan I (thesis plan) is the preferred method of attaining the M.S. in Chemistry.

Plan II (comprehensive examination plan) requires the satisfactory completion of three cumulative examinations in lieu of a thesis. In

exceptional cases where Plan II is used, an additional six units of course 597 and six units from course 228, 248, or 278 may be applied toward the graduate course requirement and the total course requirement.

**Biochemistry M.S.** — The M.S. in Biochemistry may be obtained by the thesis plan or the comprehensive examination plan. Course requirements vary for each plan, as follows.

*Plan I (Thesis Plan)* — A total of 36 units is required. Of these, 20 must be at the graduate level and include Chemistry and Biochemistry CM253 and M267. Up to 24 units of course 596 or 598 may be applied toward the total course requirement; up to eight units may be applied toward the graduate course requirement.

*Plan II (Comprehensive Examination Plan)* — A total of 36 upper division and graduate units is required. Of these, 20 must be at the graduate level and include Chemistry and Biochemistry CM253 and M267. You may apply six units of course 258 and six units of course 268 to the graduate course requirement and the total course requirement. Courses must be approved by the biochemistry graduate adviser. With the exception of Chemistry and Biochemistry 258 and 596, all courses must be taken for a letter grade. The written requirements associated with the Winter and Spring Quarter student seminars must be satisfactorily completed.

## Ph.D. Degrees

### Course Requirements

**Chemistry Ph.D.** — Candidates in each area of specialization should normally complete as a minimum the coursework indicated below. Some of these requirements can be met on the basis of orientation examinations and courses taken prior to entry into the graduate program. If your projected research falls in an area which differs appreciably from that anticipated by the field requirements listed below, you may be permitted appropriate modifications. Required coursework must be completed prior to advancement to candidacy.

*Inorganic Chemistry* — (1) Required background material: Chemistry and Biochemistry 173; (2) courses 174, C275, C276A, 276B; (3) two courses from 153C, 207, C213B, C215A, C215B, 215D, C223A, 232, 236, 241A through 241Z, 242, C243A, C243B, 244A, 244B, 245, 246, 271A through 271Z, 279, 280, C281, or other graduate courses with the approval of the area adviser; (4) Chemistry and Biochemistry 278.

*Organic Chemistry* — (1) Required background material: Chemistry and Biochemistry 132A, 132B, 132C, 136; (2) courses C243A, 244A; (3) course C243B or 244B; (4) one additional course from physical chemistry (C213B, 245) or inorganic chemistry (173, 174, C275, C276A) or biochemistry (153C); (5) two courses from 207, 232, 236, 241A through 241Z, 242, 245, 246, C281; (6) Chemistry and Biochemistry 248.

*Physical Chemistry* — (1) Required background material: Chemistry and Biochemistry 110A, 110B, 113A; (2) courses C215A, C215B, C223A, C223B, or equivalent; (3) course 228 each term; (4) one term of course 218 (for presentation of research); (5) two courses (for letter grade credit) from 215C, 215D, 223C, 225; (6) two courses (with S/U grading option) from 215C, 215D, 221A through 221F, 223C, 225, C243A, C276A, 277, Physics 105A, 110A, 110B, 131, 132, 140, or upper division mathematics courses (subject to approval). Substitutions may be made with consent of the physical chemistry area adviser.

**Biochemistry Ph.D.** — Candidates should normally complete as a minimum the coursework indicated below. Some of these requirements can be met on the basis of courses taken prior to entry into the graduate program with consent of the graduate adviser. Required coursework must be completed prior to advancement to candidacy.

(1) Required background material: one year of organic chemistry, one physical chemistry or biophysical chemistry course, one year of biochemistry, some coursework in the life sciences, and some biochemistry laboratory experience. Deficiencies in background may be made up after admission.

(2) Chemistry and Biochemistry CM253, M267.

(3) An additional 24 units of upper division or graduate courses, including units from item 2 but not from items 4, 5, or 6, of which 18 units must be completed in your first year. You should select the courses in consultation with the biochemistry graduate or Ph.D. adviser.

(4) Chemistry and Biochemistry 258 in your first four terms.

(5) Chemistry and Biochemistry 268 in your first three terms.

(6) Three laboratory rotations (Chemistry and Biochemistry 596) during your first year.

### Teaching Experience

One year of teaching experience is required.

### Qualifying Examinations

**Chemistry Ph.D.** — Rather than a single comprehensive examination, the department gives all chemistry Ph.D. candidates a series of written tests called cumulative examinations. These are designed to encourage and test the continued growth of professional competency through coursework, study of the literature, departmental seminars, and informal discussions with colleagues.

Three examinations are given per term at approximately monthly intervals. If you enter directly into the Ph.D. program and perform satisfactorily on the orientation examination in your special area, you may begin writing the examinations immediately. You must begin by

the start of your second term in residence and must continue until you have passed five. To remain in good standing, you should pass at least one of the first six examinations attempted. Students with a master's degree from an American university are required to pass three examinations out of nine attempts. Fifteen attempts are normally the maximum.

**Biochemistry Ph.D.** — The written examination requirement for all biochemistry Ph.D. candidates is coupled to the graduate student seminar, Chemistry and Biochemistry 258. Beginning with Winter Quarter of your first year, you are required to submit the following written reports based on the seminar course to the instructor and other designated faculty members:

(1) Winter Quarter — A presentation and written report based on the Fall Quarter rotation research experience or other designated topic, to be submitted to the instructor and rotation supervisor for grading.

(2) Spring Quarter — A written report which summarizes the current state of knowledge in a small, well-defined area and which identifies the general types of experiments needed for progress in that field, to be prepared for grading by the course instructors.

(3) Fall Quarter, Second Year — At the end of the preceding Spring Quarter, you select a research topic from a list prepared by the division. An in-depth seminar on this topic which summarizes the current state of knowledge in a field and which indicates likely future directions must be presented. The written report should go beyond the information presented in the seminar and should propose specific experiments. This examination is graded by two faculty members other than the research supervisor.

A failed report may be revised once. The written examination requirement for the biochemistry Ph.D. program is fulfilled after you satisfactorily complete all three different types of reports.

At the end of the first and second years in either Ph.D. program, your overall progress is evaluated by the graduate study committee or biochemistry faculty committee, taking into account performance in courses, written examinations, and research. The committee may recommend that you (1) proceed to the oral examination, (2) be redirected to the M.S. program, or (3) be terminated from the graduate program.

**Oral Qualifying Examination** — Your doctoral committee, appointed with approval of the Graduate Division, conducts the University Oral Qualifying Examination which is based on your research proposal. The proposal should represent independent work and should offer the doctoral committee an opportunity to judge your ability to think creatively and to formulate significant ideas for research. The examination is to be attempted during the sixth term in

residence by all biochemistry students and by chemistry students completing the written qualifying examinations by the end of the first year. All others must take the oral examination by the end of the seventh term. Failure to comply with this time schedule may result in disqualification from the Ph.D. program unless permission has been given by the area adviser. The committee's decision to advance you to candidacy, to allow you to repeat the oral, or to disqualify you is based on the quality of the written proposal, the adequacy of the oral presentation, your overall record at UCLA as reflected in coursework and examinations, and your research ability and productivity.

When a satisfactory report on the completion of the written and oral qualifying examinations is submitted, you are eligible for formal advancement to candidacy for the Ph.D.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Dissertation/Final Oral Examination

You are required to prepare a dissertation thesis based on independent, original research conducted under the supervision of your research adviser and doctoral committee.

The final oral examination is optional with the doctoral committee. The determination is made at the time of the oral qualifying examination.

### Lower Division Courses

**2. Introductory Chemistry.** Lecture, two hours; discussion, two hours. Not open to students with credit for course 11A. Concept of submicroscopic world of chemistry, ranging from protons to proteins in subject matter. (F,Sp)

**9. Beginning a Career in Molecular Sciences (1 unit).** Prerequisite: freshman or sophomore standing. Limited to 50 students. Recommended for students considering a career in chemical sciences. Introduction to and discussion of research and career opportunities in molecular sciences; establishment of a faculty/student mentorship for each student to help in preparing a paper on a student-selected research topic. May be repeated twice.

Mr. Jung, Mr. Williams

**11A. General Chemistry.** Lecture, four hours; discussion, one hour. Prerequisites: high school chemistry or equivalent background and three and one-half years of high school mathematics, successful completion of Chemistry Diagnostic Test. Recommended: high school physics. Required of all majors in chemistry and biochemistry. (Students lacking prerequisites may qualify for admission by exceptional performance on Chemistry Diagnostic Test.) Atomic picture of matter; periodicity of chemical properties; types of chemical reactions; reaction stoichiometry; chemical reaction calculations; quantum theory; atomic and molecular structure and bonding.

Mr. Baur, Ms. Garrell (F,W,Sp)

**11AH. General Chemistry (Honors).** Lecture, four hours; discussion, one hour. Prerequisites: high school chemistry and physics or equivalent background and three and one-half years of high school mathematics, or consent of instructor. (Students lacking prerequisites may qualify for admission by exceptional performance on Chemistry Diagnostic Test.) All students who intend to take this course must take the Chemistry Diagnostic Test (enrollment is usually limited to students who have passed the examination). Honors course parallel to course 11A.

Ms. Carter, Mr. Kivelson (F)

**11B. General Chemistry.** Lecture, three hours; discussion, one hour. Prerequisite: course 11A or 11AH with a grade of C- or better or consent of instructor. Kinetic theory and thermodynamics of gas phase; thermochemistry; molecular interactions in liquids and solids; acid-base and solubility equilibria; free energy and reactivity.

Mr. Felker, Mr. Nicol (F,W,Sp)

**11BH. General Chemistry (Honors).** Lecture, three hours; discussion, one hour. Prerequisites: course 11AH with a grade of B- or better or course 11A, and consent of instructor. Honors course parallel to course 11B.

Ms. Carter, Mr. Kivelson (W)

**11BL. General Chemistry Laboratory (2 units).** Laboratory, four hours; video laboratory, one hour. Prerequisite: course 11A with a grade of C- or better or consent of instructor. Corequisite: course 11B (or must already have been passed with a grade of C- or better). Use of the balance; volumetric techniques; equilibria; thermochemistry; quantitative analysis using volumetric and potentiometric procedures; Beer's law.

Ms. Russell (F,W,Sp)

**11C. General Chemistry (3 units).** Lecture, two hours. Prerequisite: course 11B or 11BH with a grade of C- or better or consent of instructor. Chemical kinetics; electrochemistry; main group and transition metal reactivity; coordination chemistry; special topics such as carbon chemistry, polymers, ceramics, biological molecules.

Mr. Strouse, Ms. Valentine (F,W,Sp)

**11CH. General Chemistry (Honors).** Lecture, three hours; discussion, one hour. Prerequisites: course 11BH with a grade of B- or better or course 11B, and consent of instructor. Honors course parallel to course 11C, but at a more advanced level.

Ms. Valentine (Sp)

**11CL. General Chemistry Laboratory (3 units).** Laboratory, eight hours; video laboratory, one hour. Prerequisite: course 11BL with a grade of C- or better. Corequisite: course 11C (or must already have been passed with a grade of C- or better). Rates of reactions; quantitative volumetric analysis; qualitative inorganic analysis; inorganic synthesis; column chromatography; colorimetric analysis.

Ms. Russell (F,W,Sp)

**15. Survey of Organic Chemistry and Biochemistry.** Prerequisite: course 11A with a grade of C- or better. Not open to students with credit for course 132A or former course 21. Recommended for students in prenursing, prephysical therapy, and pre-dental hygiene. Does not meet requirements for admission to medical and dental schools. Introduction to structures and reactions of organic compounds, particularly with respect to their roles and transformations in living systems.

Ms. Lamb (F)

**15L. Laboratory in Elementary Organic Chemistry and Biochemistry (1 unit).** Laboratory, four hours. Corequisite: course 15 (or must already have been passed with a grade of C- or better). Does not meet requirements for admission to medical and dental schools. Introduction to quantitative work with aqueous solutions and to preparation, isolation, and characterization of organic compounds, particularly some of those important in living systems.

Ms. Lamb (F)

**88. Lower Division Seminar (2 units).** Prerequisite: freshman or sophomore standing. General introduction to frontiers of molecular sciences or intensive exploration of a particular theme or topic. Variable topics; consult *Schedule of Classes* for topics to be offered in a specific term. May not be repeated for credit except by students who receive a grade of C-, D, or F. P/NP or letter grading:

**88A. Serendipity in Science.** Prerequisite: freshman standing. Limited to 20 students. Inquiry into unexpected discoveries in science that have had significant impact on society and analysis of circumstances which brought these about, beginning with discovery of helium in the sun by Janssen in 1868 (using the newly developed field of spectroscopy). Discovery of X rays by Röntgen in 1895 and of radioactivity by Becquerel in 1896. Other topics include discoveries important to medicine, such as penicillin by Fleming in 1928 and cis-platin by Rosenberg in 1969.

Mr. Kaesz (F)

**96. Special Courses in Chemistry (1 to 4 units).** To be arranged. Prerequisite: consent of undergraduate adviser (chemistry). May be repeated for a maximum of eight units.

(F,W,Sp)

### Upper Division Courses

**103. Environmental Chemistry.** Lecture, four hours; discussion, one hour. Prerequisites: courses 110A, 132A, 132B/132BL, 153A, and 153L, or consent of instructor. Chemical aspects of air and water pollution, solid waste disposal, energy resources, and pesticide effects. Chemical reactions in the environment and effect of chemical processes on the environment.

Mr. Baur, Mr. Bayes (Sp)

**110A. Physical Chemistry: Chemical Thermodynamics.** Lecture, four hours; discussion, one hour. Prerequisites: course 11C, Physics 8A, 8C, and 8D, or 6A, 6B, and 6C, Mathematics 31A, 31B, 32A or 3C (for life sciences majors). Fundamentals of thermodynamics, chemical and phase equilibria, thermodynamics of solutions, electrochemistry.

Mr. Baur, Mr. Knobler, Mr. Scott (F,W,Sp)

**110B. Physical Chemistry: Introduction to Statistical Mechanics and Kinetics.** Lecture, four hours; discussion, one hour. Prerequisites: course 110A and Mathematics 32B, or consent of instructor. Strongly recommended: course 113A (for biochemistry majors course 156 may be substituted). Kinetic theory of gases, principles of statistical mechanics, statistical thermodynamics, equilibrium structure and free energy, relaxation and transport phenomena, macroscopic chemical kinetics, molecular-level reaction dynamics.

Mr. Bayes, Mr. Nicol, Mr. Trueblood (W,Sp)

**113A. Physical Chemistry: Introduction to Quantum Mechanics.** Lecture, four hours; discussion, one hour. Prerequisites: course 11C, Physics 8A, 8C, and 8D, or 6A, 6B, and 6C, Mathematics 31A, 31B, 32A, 33A (may be taken concurrently). Departure from classical mechanics: Schrödinger vs. Newton equations; model systems: particle-in-a-box, harmonic oscillator, rigid rotor, and hydrogen atom; approximation methods: perturbation and variational methods; many-electron atoms, spin, and Pauli principle, chemical bonding.

Mr. Gelbart, Mr. Williams (F,Sp)

**C113B. Physical Chemistry: Introduction to Molecular Spectroscopy.** Lecture, four hours; discussion, one hour. Prerequisite: course 113A. Interaction of radiation with matter, microwave spectroscopy, infrared and Raman spectroscopy, vibrations in polyatomic molecules, electronic spectroscopy, magnetic resonance spectroscopy. Concurrently scheduled with course C213B.

Mr. Felker, Ms. Garrell (W)

**114. Physical Chemistry Laboratory.** Lecture, two hours; laboratory, eight hours. Prerequisites: courses 11CL, 110A, 110B, and 113A, or consent of instructor. Lectures include techniques of physical measurement, error analysis and statistics, special topics. Laboratory includes spectroscopy, thermodynamic measurements, and chemical dynamics.

Mr. Bayes, Mr. Felker (W,Sp)

**114H. Physical Chemistry Laboratory (Honors).** Lecture, two hours; laboratory, eight hours. Prerequisites: courses 11CL, 110A, 110B, and 113A, with grades of B or better, or consent of instructor. Lectures include techniques of physical measurement, error analysis and statistics, special topics. Laboratory includes topics in physical chemistry to be selected in consultation with instructor.

Mr. Bayes, Mr. Felker (F,W,Sp)

**C115A-C115B. Quantum Chemistry.** Lecture, four hours; discussion, one hour. Prerequisites: course 113A, Mathematics 31A, 31B, 32A, 32B, 33A. Recommended: knowledge of differential equations equivalent to Mathematics 135A or Physics 131 and of analytic mechanics equivalent to Physics 105A. Course C115A or Physics 115B is prerequisite to C115B. Students entering course C115A are normally expected to take course C115B the following term. Designed for chemistry students with serious interest in quantum chemistry. Postulates and systematic development of nonrelativistic quantum mechanics; expansion theorems; wells; oscillators; angular momentum; hydrogen atom; matrix techniques; approximation methods; time dependent problems; atoms; spectroscopy; magnetic resonance; chemical bonding. May be concurrently scheduled with courses C215A-C215B.

Mr. Neuhauser (F, C115A; W, C115B)

**121. Special Topics in Physical Chemistry.** Prerequisite: course 110B. Recommended: course 113A, Physics 8D. Topics of considerable research interest presented at level suitable for students who have completed junior-year courses in physical chemistry.

**C123A-C123B. Classical and Statistical Thermodynamics.** Lecture, four hours; discussion, one hour. Prerequisite: course 110B or 156. Recommended: course 113A. Rigorous presentation of fundamentals of classical thermodynamics. Principles of statistical thermodynamics: probability, ensembles, partition functions, independent molecules, and the perfect gas. Applications of classical and statistical thermodynamics selected from diatomic and polyatomic gases, solid and fluid states, phase equilibria, electric and magnetic effects, ortho-para hydrogen, chemical equilibria, reaction rates, the imperfect gas, nonelectrolyte and electrolyte solutions, surface phenomena, high polymers, gravitation. May be concurrently scheduled with courses C223A-C223B.

Mr. Kivelson, Mr. Knobler (F, C123A; W, C123B)

**125. Computers in Chemistry.** Lecture, three hours. Prerequisites: courses 110A, 110B, 113A, working knowledge of FORTRAN IV or PL/1. Discussion of computer techniques, including matrix manipulation, solution of differential equations, data acquisition, and instrumental control, and their applications to chemical problems in quantum mechanics, thermodynamics, and kinetics.

Mr. Kopelevich (F)

**132A. Organic Chemistry.** Lecture, three hours; discussion, one hour. Prerequisites: courses 11C or 11CH, 11CL (may be taken concurrently), with grades of C- or better, or consent of instructor. Structures and properties of organic molecules; chemical bond and its relation to organic molecular structure, stereochemistry, and reactivity; mechanisms and stereochemistry of organic reactions; physical/organic study of a chemical reaction; synthesis, properties, and reactions of alkanes, alkenes, alkynes, alkyl halides, ethers, and alcohols.

Mr. Chapman, Mr. Jung, Ms. Luceigh (F,W,Sp)

**132AH. Organic Chemistry (Honors).** Lecture, three hours; discussion, one hour. Prerequisites: courses 11C or 11CH, and 11CL, with grades of B- or better, or consent of instructor. Honors course parallel to course 132A.

Mr. Merlic (F)

**132B. Organic Chemistry.** Lecture, three hours; discussion, one hour. Prerequisite: course 132A or 132AH with a grade of C- or better or consent of instructor. Corequisite: course 132BL. Introduction to infrared, <sup>1</sup>H, and <sup>13</sup>C NMR spectroscopy; structure, reactivity, and spectroscopic properties of carbonyl and carboxyl derivatives, aromatic compounds, and amines; concepts of aromaticity; amino acids and the peptide bond.

Mr. Foote, Ms. Luceigh (F,W,Sp)

**132BH. Organic Chemistry (Honors).** Lecture, three hours; discussion, one hour. Prerequisite: course 132A or 132AH with a grade of B- or better or consent of instructor. Honors course parallel to course 132B.

Mr. Foote, Mr. Jung (W)

**132BL. Organic Chemistry Laboratory (2 units).** Lecture, one hour; laboratory, three hours. Prerequisites: courses 11CL, and 132A or 132AH, with grades of C- or better or consent of instructor. Corequisite: course 132B. Basic experimental techniques in organic synthesis (distillation, extraction, crystallization reaction setup and workup) and organic analytical chemistry (melting and boiling point, refractive index, chromatography, IR, NMR, GC). One-step synthesis of known organic compounds on microscale level.

Ms. Lamb, Ms. Russell (F,W,Sp)

**132C. Organic Chemistry.** Lecture, three hours; discussion, one hour. Prerequisites: courses 132B or 132BH, and 132BL, with grades of C- or better, or consent of instructor. Introduction to electron absorption and mass spectroscopy; modern NMR spectroscopy; pericyclic reactions; molecular orbital theory; polymers and organic materials; organic chemistry of silicon, phosphorus, and sulfur; organic synthesis; concepts and design; building blocks of biological systems: amino acids and the peptide bond, lipids, carbohydrates, and heterocycles; bioorganic chemistry; molecular modeling.

Ms. Luceigh, Mr. Merlic (F,Sp)

**132CH. Organic Chemistry (Honors).** Lecture, three hours; discussion, one hour. Prerequisite: course 132B or 132BH with a grade of B- or better or consent of instructor. Honors course parallel to course 132C.

Mr. Armstrong (Sp)

**132CL. Organic Chemistry Laboratory (2 units).** Lecture, one hour; laboratory, four hours. Prerequisites: courses 132B or 132BH, and 132BL, with grades of C- or better, or consent of instructor. Corequisite: course 132C. Modern techniques in organic synthetic and analytical chemistry. Micro-preparative and semi-preparative scale single and multistep synthesis of known organic molecules. One- and two-dimensional multinuclear NMR techniques. CAS on-line literature search and written synthesis proposal.

Ms. Lamb (F,Sp)

**136. Organic Structural Methods.** Lecture, two hours; laboratory, eight hours. Prerequisites: courses 132A, 132B/132BL, and 132C/132CL, or equivalent, with grades of C- or better, or consent of instructor. Laboratory course in organic structure determination by chemical and spectroscopic methods; microtechniques.

Mr. Armstrong, Mr. Myles (Sp)

**C143A. Structure and Mechanism in Organic Chemistry.** Lecture, three hours; discussion, one hour. Prerequisites: courses 110B, 113A, and 132C/132CL (may be taken concurrently), or equivalent, with grades of C- or better, or consent of instructor. Mechanisms of organic reactions. Acidity and acid catalysis; linear free energy relationships; isotope effects. Molecular orbital theory; photochemistry; pericyclic reactions. May be concurrently scheduled with course C243A.

Mr. Houk (F)

**C143B. Mechanism and Structure in Organic Chemistry.** Lecture, three hours; discussion, one hour. Prerequisite: course C143A with a grade of C- or better or consent of instructor. Mechanisms of organic reactions; structure and detection of reactive intermediates. May be concurrently scheduled with course C243B.

(W)

**144. Practical and Theoretical Introductory Organic Synthesis.** Lecture, two hours; laboratory, eight hours. Prerequisites: courses 132C/132CL or equivalent. Lectures on modern synthetic reactions and processes, with emphasis on stereospecific methods for carbon-carbon bond formation. Laboratory methods of synthetic organic chemistry, including reaction techniques, synthesis of natural products, and molecules of theoretical interest.

Mr. Jung, Mr. Merlic (F)

**153A. Biochemistry: Introduction to Structure, Enzymes, and Metabolism.** Lecture, three hours; discussion, one hour; tutorial, one hour. Prerequisite: course 132B or 132BH with a grade of C- or better. Structure of proteins, carbohydrates, and lipids; enzyme catalysis and principles of metabolism, including glycolysis, citric acid cycle, and oxidative phosphorylation.

Mr. Martinson, Ms. Merchant, Mr. Weiss (F,W,Sp)

**153B. Biochemistry: DNA, RNA, and Protein Synthesis.** Lecture, three hours; discussion, one hour; tutorial, one hour. Prerequisite: course 153A. Nucleotide metabolism; DNA replication; DNA repair; transcription machinery; regulation of transcription; RNA structure and processing; protein synthesis and processing.

Ms. Feigon, Mr. Gralla (F,W)

**153C. Biochemistry: Biosynthetic and Energy Metabolism and Its Regulation.** Lecture, three hours; discussion, one hour. Prerequisite: course 153A or consent of instructor. Metabolism of carbohydrates, fatty acids, amino acids, and lipids; photosynthetic metabolism and assimilation of inorganic nutrients; regulation of these processes.

Mr. Clarke, Mr. Gober, Mr. Weiss, Mr. West (F,W,Sp)

**CM153G. Macromolecular Structure (6 units).** (Same as Biological Chemistry CM153G.) Lecture, five hours. Prerequisites: courses 110A, 153A, 153B, 153C, 156, or equivalent. Chemical and physical properties of proteins and nucleic acids. Structure, cloning, and analysis of DNA; biosynthesis and processing of RNA; biosynthesis, purification, structure, and analysis of proteins; correlation of structure and biological properties. Concurrently scheduled with course CM253.

Mr. Eisenberg, Mr. Glitz (F)

**153L. Biochemical Methods I (2 units).** (Formerly numbered 153AL.) Lecture, one hour; laboratory, four hours. Prerequisites: courses 132B or 132BH, 132BL, 153A (may be taken concurrently). Integrated term-long project involving purification of an enzyme from meat obtained at local butcher, followed by characterization of purified enzyme, with emphasis on enzyme kinetics.

Mr. Gober, Mr. Weiss (F,W,Sp)

**154. Biochemical Methods II.** Lecture, two hours; laboratory, eight hours. Prerequisites: courses 153A, 153B, and 153L, or consent of instructor. Recommended: course 156. Two to three major laboratory projects using biochemical laboratory techniques to investigate contemporary problems in biochemistry. Topics include transcription activation, molecular basis of DNA-protein interactions, biochemical basis of platelet activation, and initiation of blood clotting cascade. Experiments entail characterizing function of proteins, nucleic acids, and lipids involved in these processes.

Mr. Cohen, Mr. Courey, Mr. Reisler (F,W,Sp)

**156. Physical Biochemistry.** Lecture, four hours; discussion, one hour. Prerequisites: courses 110A, 153A. Biochemical kinetics; solution thermodynamics of biochemical systems; multiple equilibria; hydrodynamics; energy levels, spectroscopy, and bonding; topics from structural, statistical, and electrochemical methods of biochemistry.

Mr. Courey, Mr. Gober, Mr. Reisler (F,Sp)

**C161A. Plant Biochemistry.** Lecture, three hours; discussion, one hour. Prerequisite: course 153C or equivalent or consent of instructor. Introduction to distinctive features of plant biochemistry. Topics include photosynthesis, nitrogen metabolism, plant cell wall metabolism, and secondary metabolism in relation to stress. Concurrently scheduled with course C261A.

Ms. Merchant, Mr. West (F, alternate years)

**173. Structural Inorganic Chemistry.** Lecture, three hours; discussion, one hour. Prerequisite: course 110A. Recommended: courses 113A or 156, and 132B/132BL. Introductory survey of structure and bonding in inorganic compounds; molecular stereochemistry; donor/acceptor interactions; coordination compounds of transition metals; elements of crystal-field and ligand-field theory.

Mr. Kaesz, Mr. Kaner, Mr. Zink (F,Sp)

**174. Inorganic and Metalorganic Laboratory Methods.** Lecture, two hours; laboratory, eight hours. Prerequisites: courses 132A, 132B/132BL, and 173, or consent of instructor. Synthesis of inorganic compounds, including air-sensitive materials; dry-box, vacuum line, and high-pressure techniques; Schlenk methods; chromatographic and ion exchange separations.

Mr. Hawthorne (W)



**C175. Inorganic Reaction Mechanisms.** Lecture, three hours. Prerequisites: courses 110A, 110B, 113A, 173, or equivalent. Survey of inorganic reactions; mechanistic principles; electronic structure of metal ions; transition-metal coordination chemistry; inner- and outer-sphere and chelate complexes; substitution, isomerization, and racemization reactions; stereochemistry; oxidation/reduction, free radical, polymerization, and photochemical reactions of inorganic species. May be concurrently scheduled with course C275. Mr. Hawthorne, Ms. Valentine (F)

**C176. Group Theory and Applications to Inorganic Chemistry.** Lecture, three hours; discussion, one hour. Prerequisites: courses 113A, 173, or equivalent. Group theoretical methods; molecular orbital theory; ligand-field theory; electronic spectroscopy; vibrational spectroscopy. May be concurrently scheduled with course C276A. Mr. Zink (F)

**C181. Polymer Chemistry.** Lecture, three hours; discussion, one hour. Prerequisites: courses 110A, 132A, 132B. Synthesis of organic and inorganic macromolecules, thermodynamic and statistical mechanical descriptions of unique properties of polymers, polymer characterization methods, and special topics such as conductive and biomedical polymers and polymeric reagents in synthesis. Concurrently scheduled with course C281. Ms. Garrell, Mr. Kaner (W)

**184. Chemical Instrumentation.** Lecture/quiz, two hours; laboratory, eight hours. Prerequisite: course 110A. Theory and practice of instrumental techniques of chemical and structural analysis, including atomic absorption spectroscopy, gas chromatography, mass spectrometry, nuclear magnetic resonance, polarography, X-ray fluorescence, and other modern methods. Mr. Strouse, Mr. Wasson (F)

**190. Undergraduate Thesis Research.** Prerequisites: two terms of course 199 on related material, consent of undergraduate adviser and research director. Final term of integrated one-year research project. May consist of experimental and/or theoretical research or, in some cases, comprehensive review of a given area. Thesis embodying totality of year's work to be submitted and oral presentation made. Course suggested, but not required, for those seeking departmental honors at graduation. (F,W,Sp)

**196A-196F. Special Courses in Chemistry (1 to 4 units each).** Hours to be arranged. Prerequisite: consent of undergraduate adviser (chemistry). (F,W,Sp)

**199A-199ZZ. Directed Individual Studies or Research for Undergraduate Students (2 to 8 units each).** To be arranged with faculty member who will direct the research. Prerequisites: advanced junior standing in the major with 3.0 GPA or senior standing in the major, consent of department chair. Proposal must be received one week prior to first day of term. Additional details on requirements and application may be obtained from undergraduate counselor. A maximum of three 199 courses (no more than 12 units) may be taken. P/NP grading (first eight units); P/NP or letter grading (final four units). (F,W,Sp)

## Graduate Courses

**207. Organometallic Chemistry.** Lecture/discussion, three hours. Prerequisite or corequisite: course C243A or consent of instructor. Survey of synthesis, structure, and reactivity (emphasizing a mechanistic approach) of compounds containing carbon bonded to elements selected from main group metals, metalloids, and transition metals, including olefin complexes and metal carbonyls; applications in catalysis and organic synthesis. Mr. Merlic (Sp)

**C213B. Physical Chemistry: Molecular Spectroscopy.** Lecture, four hours; discussion, one hour. Prerequisite: course 113A. Interaction of radiation with matter, microwave spectroscopy, infrared and Raman spectroscopy, vibrations in polyatomic molecules, electronic spectroscopy, magnetic resonance spectroscopy. Concurrently scheduled with course C113B. Independent study project required of graduate students. Mr. Felker, Ms. Garrell (W)

**C215A-C215B. Quantum Chemistry: Methods.** Lecture, four hours; discussion, one hour. Prerequisites: course 113A, Mathematics 31A, 31B, 32A, 32B, 33A. Recommended: knowledge of differential equations equivalent to Mathematics 135A or Physics 131 and of analytic mechanics equivalent to Physics 105A. Course C215A or Physics 115B is prerequisite to C215B. Students entering course C215A are normally expected to take course C215B the following term. Designed for chemistry students with serious interest in quantum chemistry. Postulates and systematic development of nonrelativistic quantum mechanics; expansion theorems; wells; oscillators; angular momentum; hydrogen atom; matrix techniques; approximation methods; time dependent problems; atoms; spectroscopy; magnetic resonance; chemical bonding. May be concurrently scheduled with courses C115A-C115B. Mr. Neuhauser (F, C215A; W, C215B)

**215C. Advanced Quantum Chemistry: Applications.** Lecture, three hours; discussion, one hour. Prerequisites: course C215B, Physics 131, or equivalent. Topics in quantum chemistry selected from molecular structure, collision processes, theory of solids, symmetry and its applications, and theory of electromagnetic radiation. S/U or letter grading. Ms. Carter (Sp)

**215D. Molecular Spectra, Diffraction, and Structure.** Lecture, three hours; discussion, one hour. Prerequisites: course C215B, Physics 131, or equivalent. Selected topics from electronic spectra of atoms and molecules; vibrational, rotational, and Raman spectra; magnetic resonance spectra; X-ray, neutron, and electron diffraction; coherence effects. S/U or letter grading. Mr. El-Sayed, Mr. Levine (F)

**218. Physical Chemistry Student Seminar (2 units).** Seminars presented by staff, outside speakers, postdoctoral fellows, and graduate students. May be repeated for credit. S/U grading.

**219A-219Z. Seminars: Research in Physical Chemistry (2 units each).** Discussion, three hours. Prerequisite: consent of instructor. Advanced study and analysis of current topics in physical chemistry. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading.

**219B. Chemistry and Physics of Surfaces.** Mr. Williams

**219C. Physical Chemistry of Complex Fluids.** Mr. Kivelson, Mr. Knobler

**219D. Computer Simulation in Chemistry.** (Formerly numbered 220A.) Ms. Carter

**219E. Dynamics of Molecule-Molecule and Molecule-Surface Reactions.** Mr. Baugh

**219F. Environmental Chemistry and Global Cycling.** Mr. Baur

**219G. Gas Phase Kinetics and Photochemistry.** Mr. Bayes

**219H. Spectroscopy and Dynamics of Molecules, Clusters, and Biological Systems.** Mr. El-Sayed

**219I. Spectroscopy of Isolated Molecules, Complexes, and Clusters.** Mr. Felker

**219J. Chemistry and Biophysics of Interfaces.** Ms. Garrell

**219K. Statistical Mechanics of Disordered Systems.** Mr. Gelbart

**219L. Modern Methods for Molecular Reactions and Structure.** Mr. Neuhauser

**219M. Chemistry of Materials at High Pressures.** Mr. Nicol

**219N. Cosmochemistry.** Mr. Wasson

**221A-221Z. Advanced Topics in Physical Chemistry (2 to 4 units each).** Prerequisite: consent of instructor. Each course encompasses a recognized specialty in physical chemistry, generally taught by a staff member whose research interests embrace that specialty. S/U or letter grading. Ms. Carter, Mr. Reiss, Mr. Williams

**C223A-C223B. Classical and Statistical Thermodynamics.** Lecture, four hours; discussion, one hour. Prerequisite: course 110B or 156. Recommended: course 113A. Presentation of fundamentals of classical thermodynamics. Principles of statistical thermodynamics; probability, ensembles, partition functions, independent molecules, and the perfect gas. Applications of classical and statistical thermodynamics selected from diatomic and polyatomic gases, solid and fluid states, phase equilibria, electric and magnetic effects, ortho-para hydrogen, chemical equilibria, reaction rates, the imperfect gas, nonelectrolyte and electrolyte solutions, surface phenomena, high polymers, gravitation. May be concurrently scheduled with courses C123A-C123B.

Mr. Kivelson, Mr. Knobler (F, C223A; W, C223B)

**223C. Statistical Mechanics.** Lecture, three hours; discussion, one hour. Prerequisites: courses C215B, C223B, Physics 131, or equivalent. Fundamentals of statistical mechanics; classical equations of state; Coulomb systems; phase transitions; quantum statistical mechanics; quantum corrections to the equation of state; density matrix; second quantization. S/U or letter grading. Mr. Gelbart

**225. Chemical Kinetics.** Lecture, three hours; discussion, one hour. Prerequisites: courses C215B, C223B. Classical experimental and theoretical approaches to study of rates and mechanisms of chemical reactions. Modern experimental techniques and molecular-level theory of reaction dynamics. Examples of well-studied elementary reactions. S/U or letter grading. Mr. Bayes, Mr. Levine (F or Sp)

**228. Chemical Physics Seminar (2 units).** Seminars presented by staff, outside speakers, postdoctoral fellows, and graduate students. May be repeated for credit. S/U or letter grading.

**229. Introduction to Physical Chemistry Research (2 units).** Lecture, 90 minutes. Intended primarily for entering physical chemistry graduate students. S/U grading.

**M230B. Structural Molecular Biology.** (Same as Biology M230B.) Lecture, three hours; discussion, one hour. Prerequisites: Physics 6C, Mathematics 3C, consent of instructor. Selected topics from principles of biological structure; structures of globular proteins and RNAs; structures of fibrous proteins, nucleic acids, and polysaccharides; harmonic analysis and Fourier transforms; principles of electron, neutron, and X-ray diffraction; optical and computer filtering; three-dimensional reconstruction. S/U or letter grading. Mr. Eisenberg, Ms. Feigon (W)

**M230D. Structural Molecular Biology Laboratory (2 units).** (Same as Biology M230D.) Laboratory, 10 hours. Corequisite: course M230B. Methods in structural molecular biology, including experiments utilizing single crystal X-ray diffraction, low angle X-ray diffraction, electron diffraction, optical diffraction, optical filtering, three-dimensional reconstruction from electron micrographs, and model building. Mr. Eisinger, Mr. Lake (W)

**232. Stereochemistry and Conformational Analysis.** Lecture/discussion, three hours. Prerequisite or corequisite: course C143A or consent of instructor. Molecular symmetry, chirality, prochirality, stereochemistry in vinyl polymers, atropisomerism, diastereomeric interactions in solution, conformations of acyclic and cyclic molecules. Mr. Jung

**M233. Principles, Practices, and Policies in Biotechnology (2 units).** (Same as Biological Chemistry M233, Biology M233, Chemical Engineering M233, Microbiology M233, Microbiology and Immunology M233, and Radiological Sciences M233.) Prerequisite: graduate standing or consent of instructor. Presentation of technologies, regulatory practices, and policies required for product development and review of current opportunities for new technology development. Topics include fermentation processes, pilot and large-scale bioprocess technologies, scaleup strategies, industrial recombinant DNA processes, hybridomas, protein engineering, peptide mimetics and rational drug design, medical and microscopic imaging, and intellectual property issues. S/U or letter grading. Mr. Fox, Ms. Morrison

**235A-235Z. Seminars: Research in Organic Chemistry (2 units each).** Discussion, three hours. Prerequisite: consent of instructor. Advanced study and analysis of current topics in organic chemistry. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading:

**235A.** Synthesis of Natural Products and Biopolymers. Mr. Armstrong

**235B.** Design, Preparation, and Characterization of New Organic Materials. Mr. Chapman

**235C.** Supramolecular Chemistry. Mr. Diederich

**235D.** Modern Photochemistry and Biooxidants. Mr. Foote

**235E.** Theoretical and Physical Organic Chemistry. Mr. Houk

**235F.** Synthetic Methods and Synthesis of Natural Products. Mr. Jung

**235G.** Organometallic Chemistry and Organic Synthesis. Mr. Merlic

**235H.** Reaction Mechanisms in Molecular Biology. Mr. Sigman

**235I.** Fullerene Chemistry and Materials Science. Mr. Rubin

**235J.** Organic and Bioorganic Chemistry. Mr. Myles

**235K.** Organic Chemistry in Organized and Restricted Media. Mr. Garcia-Garibay

**236. Spectroscopic Methods of Organic Chemistry.** Lecture, three hours. Prerequisite or corequisite: course C243A or consent of instructor. Problem solving using proton and carbon 13 nuclear magnetic resonance, infrared spectroscopy, and mass spectrometry; new techniques in NMR, IR, and MS, with emphasis on Fourier transform NMR.

**241A-241Z. Special Topics in Organic Chemistry (2 to 4 units each).** Prerequisite or corequisite: course C243A or equivalent or consent of instructor. Each course encompasses a recognized specialty in organic chemistry, generally taught by a staff member whose research interests embrace that specialty.

Mr. Armstrong, Mr. Houk, Mr. Jung

**242. Organic Photochemistry.** Lecture/discussion, three hours. Prerequisite or corequisite: course C243A or consent of instructor. Interactions of light with organic molecules; mechanistic and preparative photochemistry.

**C243A. Organic Chemistry: Structure and Mechanics.** Lecture, three hours; discussion, one hour. Prerequisites: courses 110B, 113A, and 132C/132CL (may be taken concurrently), or equivalent, with grades of C- or better, or consent of instructor. Mechanisms of organic reactions. Acidity and acid catalysis; linear free energy relationships; isotope effects. Molecular orbital theory; photochemistry; pericyclic reactions. May be concurrently scheduled with course C143A. S/U or letter grading. Mr. Houk (F)

**C243B. Organic Chemistry: Mechanism and Structure.** Lecture, three hours; discussion, one hour. Prerequisite: course C243A or consent of instructor. Mechanisms of organic reactions; structure and detection of reactive intermediates. May be concurrently scheduled with course C143B.

Mr. Diederich (W)

**244A. Organic Synthesis: Methodology and Stereochemistry.** Modern synthetic reactions and transformations involving organic substrates. Special emphasis on reagents useful in asymmetric induction and stereoselective synthesis of structurally complex target molecules. Mr. Armstrong

**244B. Strategy and Design in Organic Synthesis.** Lecture, three hours. Prerequisite or corequisite: course C243A or consent of instructor. Theory behind the planning of syntheses of complex molecules from simpler ones. Organic reactions and their use in the synthetic process. Reasoning and art involved in organic synthesis. Mr. Jung

**245. Applications of Electronic Theory in Organic Chemistry.** Lecture, three hours; discussion, one hour. Prerequisite or corequisite: course C243A or consent of instructor. Review of molecular orbital theory; introduction to alternative theoretical methods; aromaticity and homoaromaticity; Hückel and Möbius conjugation; Woodward/Hoffmann theory of concerted pericyclic reactions; through-bond and through-space interactions; introduction to photoelectron spectroscopy; frontier molecular orbital theory; related special topics. Mr. Houk

**246. Bioorganic Chemistry.** Lecture/discussion, three hours. Prerequisites: courses 110A and 132A, or equivalent, or consent of instructor. Reaction mechanisms relevant to biochemistry and molecular biology; experimental approaches for study of enzymes, including organic chemical models for catalysis and complexation, kinetics, stereochemistry, isotope labeling, and chemical modification; molecular design of pharmacologically active agents and artificial enzymes. Mr. Sigman

**247. Organic Colloquium (2 units).** Seminars in organic chemistry and related areas presented by staff, outside speakers, postdoctoral fellows, and graduate students. May be repeated for credit. S/U grading.

**248. Organic Chemistry Student Seminar (2 units).** Seminars presented by staff, outside speakers, postdoctoral fellows, and graduate students. May be repeated for credit. S/U or letter grading.

**249. Problems in Advanced Organic Chemistry (2 units).** Problems in organic reaction mechanisms, synthesis, structure determination, stereochemistry, spectroscopy, electronic theory, photochemistry, and organometallic chemistry, with emphasis on current literature. Intended primarily for first- and second-year graduate students as preparation for cumulative examinations. May be repeated for credit. S/U grading.

**250. Topics in Biochemistry and Molecular Biology of Animal Cells.** Lecture, three hours. Prerequisites: courses 132A, 132B/132BL, 132C/132CL, or equivalent, 153A, 153B, 153C, courses in genetics and molecular biology, consent of instructor. Structure and organization of animal cells, cell-cell contact, motility of cell and mobility of cellular components, chromosome structure, interactions between cytoplasm and nucleus, genetic analysis in higher eukaryotic cells, biochemistry of tissue development and organization.

**251A-251Z. Advanced Topics in Biochemistry (2 units each).** Prerequisite: consent of instructor. Each course encompasses a recognized specialty in biochemistry, generally taught by a staff member whose research interests embrace that specialty.

**CM253. Macromolecular Structure (6 units).** (Formerly numbered M253.) (Same as Biological Chemistry CM253.) Lecture, five hours. Prerequisites: courses 110A, 153A, 153B, 153C, 156, or equivalent. Chemical and physical properties of proteins and nucleic acids. Structure, cloning, and analysis of DNA; biosynthesis and processing of RNA; biosynthesis, purification, structure, and analysis of proteins; correlation of structure and biological properties. Concurrently scheduled with course CM153G. (F)

**254. Advanced Biochemical Methods.** Lecture, two hours; laboratory, eight hours. Prerequisite: course 156 or consent of instructor. Recommended: courses 153B, 153C. Theoretical and practical basis of metabolic, chromatographic, kinetic, electrophoretic, ultracentrifugal, isotopic, and other techniques as applied to biochemical systems. Mr. Eisenberg, Mr. Shumaker (W)

**M255. Biological Catalysis.** (Same as Biological Chemistry M255 and Pharmacology M255.) Prerequisites: courses 110A and 153A, or equivalent, or consent of instructor. Reaction mechanisms in molecular biology; experimental approaches for study of enzymes, including kinetics, isotopic labeling, stereochemistry, chemical modification, and spectroscopy; design of pharmacologically active agents and artificial enzymes. Drug metabolism and interactions addressed on a mechanistic level. Mr. Cho, Mr. Fukuto, Mr. Sigman (Sp)

**256A-256Z. Seminars: Research in Biochemistry (2 units each).** Discussion, three hours. Prerequisite: consent of instructor. Advanced study and analysis of current topics in biochemistry. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading:

**256A.** Biochemistry of Plasma Proteins. Mr. Schumaker

**256B.** Biochemistry of Protein Function. Mr. Clarke

**256C.** Biochemistry and Molecular Genetics of Fungi. Mr. Weiss

**256D.** Transcriptional Control Mechanisms in Drosophila Embryogenesis. Mr. Courey

**256E.** Secondary Metabolites in Higher Plants: Biosynthesis, Regulation, and Physiological Functions. Mr. West

**256F.** Current Topics in Prokaryotic Development. Mr. Gober

**256G.** Nucleic Acid Structure Determination by NMR. Ms. Feigon

**256H.** Basic Mechanisms of Promoter Activation. Mr. Gralla

**256J.** Contractile Proteins in Muscle Contraction and Cell Motility. Mr. Reisler

**256K.** Biochemistry and Molecular Biology of Chlamydomonas. Ms. Merchant

**256L.** Literature of Structural Biology. Mr. Dickerson, Mr. Eisenberg, Mr. Yeates

**256M.** Mechanism and Regulation of Transcription Termination in Eukaryotic Organisms. Mr. Martinson

**256N.** Advanced Topics in Structural Biology. Mr. Dickerson, Mr. Eisenberg, Mr. Yeates

**256O.** Membrane Biophysics. Mr. Hubbell

**M257. Physical Chemistry of Biological Macromolecules (2 units).** (Same as Biological Chemistry M257.) Prerequisites: courses 110A and 153A, or consent of instructor. Theory of hydrodynamic, thermodynamic, and optical techniques used to study structure and function of biological macromolecules. Mr. Schumaker (W)

**258. Biochemistry Student Seminar (2 units).** Seminars presented by graduate students on topics of current biochemical interest. May be repeated for credit. S/U grading.

**259. Mechanisms in Regulation of Transcription.** Lecture, three hours. Prerequisite: course CM253 or M267 or consent of instructor. Prokaryotic operons; initiation and termination; DNA regulatory sequences and regulator protein-DNA interactions; RNA polymerases; regulation of eukaryotic transcription; hormones, differentiation, cell cycle; role of chromatin structure in mediating regulation. Mr. Gralla, Mr. Martinson (Sp)

**C261A. Plant Biochemistry.** Lecture, three hours; discussion, one hour. Prerequisite: course 153C or equivalent or consent of instructor. Introduction to distinctive features of plant biochemistry. Topics include photosynthesis, nitrogen metabolism, plant cell wall metabolism, and secondary metabolism in relation to stress. Concurrently scheduled with course C161A. Ms. Merchant, Mr. West (F, alternate years)

**262. Biological Energy Transductions.** Lecture, three hours. Prerequisites: courses 153B and 153C, or equivalent, or consent of instructor. Molecular basis of energy-transducing processes, including oxidative and photosynthetic phosphorylation, other energy-linked oxidative functions, membrane active transport, muscle contraction, and special sensory functions. (W)

**M263. Metabolism and Its Regulation.** (Same as Biological Chemistry M263.) Lecture, three hours. Prerequisites: course 110A, one course from 153B, 153C, 156, or Biological Chemistry 201A-201B, or equivalent, or consent of instructor. Thermodynamic and kinetic aspects of metabolism; regulatory properties of enzymes; metabolic regulation; consideration of comparative aspects of metabolism in relation to physiological function. Mr. Atkinson, Mr. Weiss (Sp)

**M264A-M264B-M264C. Molecular Basis of Atherosclerosis: Selected Topics (2 units each).** (Same as Biological Chemistry M264A-M264B-M264C.) Prerequisite: consent of instructor. Biochemistry, morphology, and physiology of atherosclerosis. Emphasis on chemistry of lipoproteins and role of plasma lipoproteins in regulation of tissue lipid metabolism and development of atherosclerosis. Each course may be taken independently for credit.

(F, M264A; W, M264B; Sp, M264C)

**266. Seminar: Techniques for Study of Gene Regulation (2 units).** Prerequisite: course 259 or consent of instructor. Seminar to discuss specific experimental approaches being taken in study of gene regulation. Emphasis on specific biochemical techniques being used to study regulatory protein-DNA interactions in diverse biological model systems.

**M267. Macromolecular Metabolism and Subcellular Organization (6 units).** (Same as Biological Chemistry M267.) Lecture/discussion, five hours. Prerequisites: courses 153B and 153C or Biological Chemistry 201A-201B, or equivalent, or consent of instructor. Recommended: course M253. Cell cycle DNA replication and repair; structure and properties of cellular organelles; regulation of cell division; cell transformation; normal and aberrant expression of oncogenes; molecular aspects of development.

Mr. Martinson, Mr. McEntee (W)

**268. Biochemistry Research Seminar (2 units).** Seminars presented by staff, outside speakers, postdoctoral fellows, and graduate students on topics of current biochemical research interest. May be repeated for credit. S/U or letter grading.

**271A-271Z. Advanced Topics in Inorganic Chemistry (2 to 4 units each).** Prerequisite: consent of instructor. Each course encompasses a recognized specialty in inorganic chemistry, generally taught by a staff member whose research interests embrace that specialty.

Ms. Valentine

**272A-272Z. Seminars: Research in Inorganic Chemistry (2 units each).** Discussion, three hours. Prerequisite: consent of instructor. Advanced study and analysis of current topics in inorganic chemistry. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading:

**272A. Chemistry of Materials.** Mr. Kaner

**272B. Metalorganic. Inorganic Biometalorganic Chemistry.** Mr. Hawthorne

**272C. Inorganic Spectroscopy.** Mr. Zink

**272D. Bioinorganic Chemistry and Biology of Transition Metals and Oxygen.** Ms. Valentine

**272E. Organometallic Synthesis and Chemical Vapor Deposition.** Mr. Kaesz

**272F. Porphyrin-Based Lattice Clathrates.**

Mr. Strouse

**C275. Inorganic Chemistry: Reaction Mechanisms.** Lecture, three hours. Prerequisites: courses 110A, 110B, 113A, 173, or equivalent. Survey of inorganic reactions; mechanistic principles; electronic structure of metal ions; transition-metal coordination chemistry; inner- and outer-sphere and chelate complexes; substitution, isomerization, and racemization reactions; stereochemistry; oxidation/reduction, free radical, polymerization, and photochemical reactions of inorganic species. May be concurrently scheduled with course C175.

Mr. Hawthorne, Ms. Valentine (F)

**C276A. Inorganic Chemistry: Group Theory and Spectroscopy.** Lecture, three hours; discussion, one hour. Prerequisites: courses 113A, 173, or equivalent. Group theoretical methods; molecular orbital theory; ligand-field theory; electronic spectroscopy; vibrational spectroscopy. May be concurrently scheduled with course C176. S/U or letter grading.

Mr. Zink (F)

**276B. Physical Methods for the Characterization of Inorganic Compounds.** Lecture, three hours. Prerequisite: course C276A or consent of instructor. Applications of spectroscopic techniques, including IR, Raman, visible, UV, NMR, ESR, and NQR, to elucidation of structure and bonding in inorganic and organometallic compounds.

Mr. Strouse (W)

**277. Crystal Structure Analysis.** Lecture, three hours. Theory and practice of modern crystallography, with emphasis on practical experience in structure determination. Topics include crystallographic symmetry, scattering theory, data collection, Fourier analysis, heavy atom techniques, direct methods, isomorphous replacement, crystallographic refinement, error analysis, and common pitfalls. S/U or letter grading.

Mr. Dickerson, Mr. Eisenberg, Mr. Strouse

**278. Inorganic Chemistry Student Seminar (2 units).** Seminars presented by staff, outside speakers, postdoctoral fellows, and graduate students. May be repeated for credit. S/U or letter grading.

**279. Bioinorganic Chemistry.** Lecture, three hours. Prerequisites: courses 110A and either 156 or 173. Role of metal ions in biology; introduction to metalloenzymes and metalloproteins; metal ion interactions with nucleic acids; metal ion metabolism.

Ms. Valentine (W)

**280. Solid-State Chemistry.** Lecture, three hours. Prerequisite: course 173 or equivalent. Survey of important materials, their synthesis, and characterization as single crystals, powders, or polymers. Chemical, optical, and magnetic properties and their relationship to band theory.

Mr. Kaner

**C281. Polymer Chemistry.** Lecture, three hours; discussion, one hour. Prerequisites: courses 110A, 132A, 132B. Synthesis of organic and inorganic macromolecules, thermodynamic and statistical mechanical descriptions of unique properties of polymers, polymer characterization methods, and special topics such as conductive and biomedical polymers and polymeric reagents in synthesis. Concurrently scheduled with course C181.

Ms. Garrell, Mr. Kaner

**M298. Seminar: Current Topics in Molecular Biology (2 units).** (Same as Biological Chemistry M298, Biology M298, Microbiology M298, Microbiology and Immunology M298, and Molecular Biology M298.) Prerequisite: consent of instructor and graduate adviser of interdepartmental Molecular Biology Ph.D. Program. Each student conducts or participates in discussions on assigned topics. May be repeated for credit.

(F, W, Sp)

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**400. Safety in Chemical and Biochemical Research (2 units).** Survey of safe laboratory practices for experimental research in organic, inorganic, and physical chemistry and biochemistry. Topics include laser safety, cryogenic hazards, high- and low-pressure experimentation, gas and carcinogen handling, chemical spills, fire extinguishing, and chemical disposal. S/U grading.

Mr. Merlic (W)

**495. Teaching College Chemistry (2 units).** Lecture, two hours; discussion, two hours; 20 hours training during week prior to Fall Quarter. Course for teaching assistants designed to deal with problems and techniques of teaching college chemistry. S/U grading.

(F)

**596. Directed Individual Study or Research (2 to 16 units).** To be arranged with faculty member who will direct the study or research. May be repeated for credit. S/U grading.

**597. Preparation for M.S. Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 4 units).** Prerequisite: consent of graduate adviser (chemistry). S/U grading.

**598. Research for and Preparation of M.S. Thesis (2 to 16 units).** Each faculty member supervises research of M.S. students and holds research group meetings, seminars, and discussions with the students.

**599. Research for and Preparation of Ph.D. Dissertation (2 to 16 units).** Each faculty member supervises research of Ph.D. students and holds research group meetings, seminars, and discussions with the students.

## Chemistry/ Materials Science (Interdepartmental)

5731 Boelter Hall, (310) 825-5534

### Professors

Bruce S. Dunn, Ph.D. (*Materials Science and Engineering*)

M. Frederick Hawthorne, Ph.D. (*Chemistry and Biochemistry*)

John D. Mackenzie, Ph.D. (*Materials Science and Engineering*)

Malcolm F. Nicol, Ph.D. (*Chemistry and Biochemistry*)

R. Stanley Williams, Ph.D. (*Chemistry and Biochemistry*)

Jeffrey I. Zink, Ph.D. (*Chemistry and Biochemistry*)

### Associate Professors

Nancy M. Haegel, Ph.D. (*Materials Science and Engineering*), Chair

Richard B. Kaner, Ph.D. (*Chemistry and Biochemistry*; *Luckman Distinguished Teaching Award*)

### Assistant Professor

Mark S. Goorsky, Ph.D. (*Materials Science and Engineering*)

## Scope and Objectives

The undergraduate major is designed for students who are interested in solid-state chemistry, the preparation of engineering materials such as semiconductors, glasses, ceramics, metals, and polymers, the reactivity of such materials in different environments, and how chemical compositions affect properties. It provides appropriate preparation for graduate studies in many fields emphasizing interdisciplinary research involving chemistry, engineering, and applied science.

## Bachelor of Science Degree

### Preparation for the Major

*Required:* Chemistry and Biochemistry 11A or 11AH, 11B or 11BH, 11BL, 11C or 11CH, 11CL, English 3, Materials Science and Engineering 14, Mathematics 31A, 31B, 32A, 32B, 33A, Physics 8A, 8B or 8BH, 8C or 8CH, 8CL, 8D or 8DH, 8DL, Program in Computing 10A.

### The Major

*Required:* Chemistry and Biochemistry 110A, 110B, 113A, C113B or C115A-C115B, 114, 132A, 173, eight units from C123A, C123B, 132B or 132BH, 132BL, 132C or 132CH, 132CL, 174, C175, C176; Materials Science and Engineering 120, 131L or 161L, 132, 150, 160, eight units from 110, 111, 121, 122, 130, 131, 143A, 147B, 162.

For further information, contact Barbara Brooks, Materials Science and Engineering, 5732 Boelter Hall, (310) 825-5534.

# Chicana and Chicano Studies

## (Interdepartmental)

67 Kinsey Hall, (310) 206-7695

### Professors

Juan Gómez-Quiñones, Ph.D. (*History*)  
Fernando M. Torres-Gil, Ph.D. (*Social Welfare*)

### Associate Professors

Héctor Calderón, Ph.D. (*Spanish*)  
Leobardo Estrada, Ph.D. (*Urban Planning*)  
Guillermo Hernández, Ph.D. (*Spanish*)  
Steven J. Loza, Ph.D. (*Ethnomusicology and Systematic Musicology*)  
José Monleón, Ph.D. (*Spanish*)  
Vilma Ortiz, Ph.D. (*Sociology*)  
Raymund A. Paredes, Ph.D. (*English*)  
Raymond A. Rocco, Ph.D. (*Political Science*)  
George Sanchez, Ph.D. (*History*)

### Assistant Professors

Raul Hinojosa-Ojeda, Ph.D. (*Urban Planning*)  
Chon A. Noriega, Ph.D. (*Film and Television*)  
Sonia Saldivar-Hull, Ph.D. (*English*)  
Daniel G. Solorzano, Ph.D. (*Education*)  
Edward E. Telles, Ph.D. (*Sociology*)  
Edit Villarreal, M.F.A. (*Theater*)

### Lecturer

Richard Chabran, M.L.S.

## Scope and Objectives

Today there is a demand for individuals with extensive knowledge of the Chicano community. Opportunities exist in both the public and private sector that call for men and women academically prepared and aware of the history, culture, and current problems facing Chicano/Latino communities. The Chicana and Chicano studies major provides students with the language and cross-cultural studies background that will enhance their qualifications for positions in schools, governmental organizations, and private enterprise.

The program, coordinated by an interdepartmental committee, is interdisciplinary and leads to the Bachelor of Arts degree.

## Bachelor of Arts Degree

The B.A. program in Chicana and Chicano Studies is designed to provide systematic instruction for students who wish concentrated study of the Chicana/Chicano experience. Viewed as developmental, the program subjects the Chicana/Chicano reality to critical investigation, including social, economic, educational, historical, and political analysis. The major is recommended for students preparing for graduate study as well as for public service careers.

## Preparation for the Major

*Required:* Chicana and Chicano Studies 10A, 10B, Spanish 5 or equivalent.

## The Major

*Required:* A total of 15 upper division courses, including Chicana and Chicano Studies 101, nine courses from the approved list of Chicana and Chicano studies courses (available in the program office each term), one term of field studies, and three related study courses and one advanced seminar from the approved list of courses or by petition to the program director or undergraduate counselor. Related study includes courses with some Chicana/Chicano content, such as those on Mexico, Latin America, and the experiences of people of color in the U.S.

*Recommended:* English 100W; Library and Information Science 111C; the introductory course in two of the following: anthropology, economics, history, political science, sociology; one or more courses in Chicana/Chicano history, literature, feminism, social science.

*Optional Multidisciplinary Senior Thesis* — Prerequisite: senior standing. Chicana and Chicano studies majors have the option during their senior year to enroll in two 199 courses in their major concentration area, with the intention of producing a Chicana and Chicano studies undergraduate thesis related to the major concentration. Enrollment in the two 199 courses is with the advice and consent of a faculty member. The first term includes thesis conceptualization and formulation, along with preliminary data collection for the thesis. The second term entails completion of the data collection, analysis of the data, and termination of the thesis.

*Course Limitations* — No more than two 199 courses may be applied toward the major concentration; 199 courses applied toward the multidisciplinary senior thesis option may not also be applied toward the major concentration area. Registration in 199 courses must be approved in writing by the program director. No more than two CED courses may be applied toward the major concentration.

## Chicana and Chicano Studies Specialization

The specialization complements study in a traditional field. Students participating in this program are required to complete both a departmental major and the Chicana and Chicano studies specialization. You must take Chicana and Chicano Studies 10A, 10B, 101, and four courses from the approved list of Chicana and Chicano studies courses (available in the program office each term).

## Lower Division Courses

**10A. Introduction to Chicano Life and Culture.** Lecture, three hours; discussion, one hour. Enrollment priority to Chicana and Chicano studies majors. Introduction to central concepts and historical experiences which define Chicano culture, from exploring indigenous roots to examining current trends. Emphasis on diversity of the Chicano experience, gender as a central cultural variable, and particular socioeconomic conditions which have shaped cultural response. Mr. Sanchez (F)

**10B. Chicanos in American Society.** Lecture, three hours; discussion, one hour. Enrollment priority to Chicana and Chicano studies majors. Examination of conditions of Chicanos in the U.S., with particular attention to socioeconomic aspects of their experience. Additional emphasis on examination of role of women in both a family context and the workplace. Ms. Ortiz (W)

## Upper Division Courses

**101. Theoretical Concepts in Chicana and Chicano Studies.** Lecture, three hours. Enrollment priority to Chicana and Chicano studies majors and students in the specialization. Examination of following theoretical concepts and practical concerns: self-definition, relationship between educational institutions and the Chicana/Chicano community, nature of critical Chicana/Chicano specific research, basic issues in Chicana/Chicano culture, and current problems facing the Chicano/Latino community. Mr. Sanchez

**M102. The Mexican American and the Schools.** (Same as Education M102.) Prerequisite: consent of instructor. Review of research and teaching strategies. Analysis of school policies and practices and their effect on development of Mexican American and Chicano youth and communities. Mr. Solorzano

**M103C. Origins and Evolution of Chicano Theater.** (Same as Theater M103C.) Lecture, three hours. Prerequisite: upper division standing. Exploration of development of Chicano theater from its beginning in legends and rituals of ancient Mexico to work of Luis Valdez (late 1960s). Ms. Villarreal

**M103D. Contemporary Chicano Theater.** (Same as Theater M103D.) Lecture, three hours. Prerequisite: upper division standing. Study of recent trends in Chicano theater as reflected in works of contemporary Chicano dramatists and theater artists. Ms. Villarreal

**M105. The Chicano Experience in Literature.** (Same as English M105.) Prerequisite: satisfaction of Subject A requirement. Study of literature in English by and about Chicanos. Survey of depiction of the Chicano experience in American literature generally, with emphasis on development of Chicano literature itself, its cultural backgrounds, and distinctive uses of language. Mr. Paredes, Ms. Saldivar-Hull

**M110. Chicana Feminism.** (Same as Women's Studies M132A.) Lecture, three hours. Prerequisite: Women's Studies 10 or consent of instructor. Examination of theories and practices of women who identify as "Chicana feminist." Analysis of writings of Chicanas who do not identify as feminist but whose practices attend to gender inequities faced by Chicanas both within the Chicana/Chicano community and the dominant society. Attention to Anglo-European and Third World women. Ms. Saldivar-Hull

**120. Immigration and the Chicano Community.** Lecture, three hours. Discussion on relationship between international immigration and development of the Chicana/Chicano community. Examination of U.S. immigration policy and relationship between Mexican-origin population and other Latin American immigrants. Mr. Hinojosa-Ojeda, Mr. Telles (W)

**125. U.S./Mexico Relations.** Lecture, three hours. Examination of complex dynamics in relationship between Mexico and the U.S., using a political economy approach to study of asymmetrical integration between advanced industrial economies and developing countries. Mr. Hinojosa-Ojeda (Sp)

**M145. Introduction to Chicano Literature.** (Same as Spanish M145.) Lecture, three hours. Prerequisite: Spanish 25 or 26. Recommended: Spanish 136B. Introduction to texts representative of the Chicano literary heritage. Sampling of genres, as well as historical and geographical settings and points of view characteristic of work written by Chicanos during the 20th century. Most required reading is in Spanish. Bilingual and English works are included and discussed. Reading and analysis of a number of important scholarly and critical statements pertaining to characteristics and development of the Chicano literary corpus. Mr. Calderón, Mr. Hernández

**M147A. Chicano/Latino Politics.** (Formerly numbered M147.) (Same as Political Science M147A.) Lecture, three hours; discussion, one hour. Prerequisite: one 140-level political science course or one upper division course on race or ethnicity from history, psychology, or sociology, or consent of instructor. Introduction to political economy of racial domination in the U.S., concentrating on study of Mexican origin communities. Emphasis on identifying and explaining the historically changing relationship between class, race, and power by studying the interaction between state policies and practices, class and racial stratification systems, and cultural codes and modes of ideological discourse in each historical period.

Mr. Rocco

**M154. Contemporary Issues among Chicanas.** (Same as Women's Studies M132B.) Prerequisite: Women's Studies 10 or consent of instructor. Overview of conditions facing Chicanas in the U.S., including issues on family, immigration, reproduction, employment conditions. Comparative analysis with other Latinas.

Ms. Ortiz

**M159A. History of the Chicano Peoples.** (Same as History M159A.) Lecture, three hours. Survey lecture course on historical development of the Mexican (Chicano) community and people of Mexican descent (Indio-Mestizo-Mulato) north of the Rio through the 17th, 18th, and 19th centuries, with special focus on labor and politics. Provides integrated understanding of change over time in the Mexican community by inquiry into major formative historical forces affecting the community. Social structure, economy, labor, culture, political organization, conflict, and international relations. Emphasis on social forces, class analysis, social, economic, and labor conflict, ideas, domination, and resistance. Developments related to historical events of significance occurring both in the U.S. and Mexico. Lectures, special presentations, reading assignments, written examinations, library and field research, and submission of a paper.

Mr. Gómez-Quiñones

**M159B. History of the Chicano Peoples.** (Same as History M159B.) Lecture, three hours. Survey lecture course on historical development of the Mexican (Chicano) community and people of Mexican descent in the U.S. through the 20th century, with special focus on labor and politics. Provides integrated understanding of change over time in the Mexican community by inquiry into major formative historical and policy issues affecting the community. Within a framework of domination and resistance, discussion deals with social structure, economy, labor, culture, political organization, conflict, and ideology. Developments related to historical events of significance occurring both in the U.S. and Mexico. Lectures, special presentations, reading assignments, written examinations, library and/or field research, and submission of a paper.

Mr. Gómez-Quiñones

**M172T. Ethnohistory of Hispanic Cultures in the U.S. Southwest.** (Same as Anthropology M172T.) Lecture, three hours. Prerequisite: Anthropology 9 or consent of instructor. Ethnography of social and cultural adaptations of Hispanic peoples in the U.S. Southwest: their respective social organization, economic and political institutions, sacred and secular belief systems, and expressive cultures. P/NP (undergraduates), S/U (graduates), or letter grading.

**197A-197Z. Special Topics in Chicana and Chicano Studies.** Lecture, three hours. Some sections may require prior coursework or consent of instructor. Lecture or seminar format on selected topics in Chicana and Chicano studies. May be repeated for credit.

**199. Independent Studies (2 to 4 units).** Prerequisites: courses 10A, 10B, upper division standing, consent of interdepartmental Chicana and Chicano Studies Program faculty. Intensive directed research program. May be repeated for a maximum of eight units.

## Classics

7349 Bunche Hall, (310) 825-4171

### Professors

Andrew R. Dyck, Ph.D.  
Bernard D. Frischer, Ph.D.  
Sander M. Goldberg, Ph.D.  
Michael W. Haslam, Ph.D.  
Richard Janko, Ph.D.  
Bengt T.M. Löfstedt, Ph.D.  
Milton V. Anastos, Ph.D., *Emeritus*  
Philip Levine, Ph.D., *Emeritus*  
Jaan Puhvel, Ph.D., *Emeritus*  
Albert H. Travis, Ph.D., *Emeritus*

### Associate Professors

Ann L.T. Bergren, Ph.D. (*Distinguished Teaching Award*)  
David L. Blank, Ph.D.  
Katherine C. King, Ph.D. (*Luckman Distinguished Teaching Award*)  
Steven Lattimore, Ph.D.  
Sarah P. Morris, Ph.D.

### Assistant Professors

Robert A. Gurval, Ph.D.  
Carole E. Newlands, Ph.D.

### Lecturer

Evelyn Venable Mohr, M.A., *Emerita*

## Scope and Objectives

The general objective of the Classics Department is to provide a thorough knowledge of the Greek and Roman languages and culture. To this end, it offers elementary and advanced courses in the languages, the reading and analysis of Greek and Roman authors, the history of Greek and Roman literature, classical art, archaeology, mythology, philosophy, and religion. The department is also strong in three fields which are not commonly taught in classics departments, namely classical linguistics, medieval Latin, and Byzantine studies.

Bachelor of Arts degrees are offered in Classical Civilization, in Greek, in Latin, and in Greek and Latin. Other undergraduate degrees include the B.A. in English/Greek and in English/Latin, offered jointly with the English Department. Students considering a major in the department should consult the adviser as soon as possible in their University career, but in no case later than the point at which they are about to take upper division courses. Graduate degrees include the Master of Arts in Classics (Greek and Latin), Greek, and Latin, and the Ph.D. in Classics.

## Bachelor of Arts in Classical Civilization

The civilizations of ancient Greece and Rome have made important contributions to the political, social, artistic, and intellectual development of the Western world. The purpose of the classical civilization major is to provide a for-

mal and balanced introduction to the historical and cultural experiences of the ancient Greeks and Romans. The program of study is structured, yet not rigid. Lower division survey courses and requirements in elementary language study, ancient history, and classical art establish an essential background of knowledge, while electives encourage individual and specialized interests. The program offers a broad range of courses in the fields of language, literature, history, mythology, religion, philosophy, art, and archaeology. The major serves as excellent and rewarding preparation for a professional career in medicine, law, business, journalism, communications, or the arts.

## Preparation for the Major

*Required:* Classics 10, 20, and either 40 or 41.

## The Major

*Required:* (1) Greek 3 or Latin 3; (2) two courses in Greek or Roman history (History 115B, 115C, 116A, 116B, 117A, 117B, 118); (3) two courses in classical art or archaeology (Classics M153A through M153H); (4) seven upper division courses in the department (courses in related fields not offered by the department may be substituted by petition and with approval of the undergraduate adviser) — no more than three may be selected from Greek 100 through 133 or Latin 100 through 133, and Classics 195A-195B-195C may be applied as only one course toward the major; (5) one senior seminar (Classics 197 or 195A-195B-195C) — with approval of the undergraduate adviser, a senior paper (Classics 199) may be substituted for the senior seminar.

## Bachelor of Arts in Greek

### Preparation for the Major

*Required:* Greek 1, 2, 3 and Latin 1, 2, 3, or equivalent.

### The Major

*Required:* (1) Nine upper division courses in Greek, including course 110; (2) one upper division course in Latin; (3) Classics 143 and either 140 or 141; (4) two courses in Greek or Roman history (History 115B-115C, 116A-116B, 117A-117B); (5) two additional courses in one or two of the related areas: classical archaeology (Classics M153A through M153H), classical linguistics (Classics 180), classical mythology (Classics 161, 162, 168), Greek and Roman religion (Classics 166A, 166B), ancient philosophy (Classics 145A, Philosophy 101A, 101B, 102, Greek 121, 122, 123, 124), Byzantine civilization (Classics M170), medieval Latin literature (Latin 131, 133). Total courses required: 16.

## Bachelor of Arts in Greek and Latin

### Preparation for the Major

*Required:* Greek 1, 2, 3 and Latin 1, 2, 3, or equivalent.

### The Major

*Required:* (1) Twelve upper division courses, six in Greek and six in Latin, including Greek 110 and Latin 110A; (2) one course from Classics 140, 141, 142, 143; (3) one course in Greek or Roman history (History 115B, 115C, 116A, 116B, 117A, 117B); (4) one additional course in two of the related areas: classical archaeology (Classics M153A through M153H), classical linguistics (Classics 180), classical mythology (Classics 161, 162, 168), Greek and Roman religion (Classics 166A, 166B), ancient philosophy (Classics 145A, Philosophy 101A, 101B, 102, Greek 121, 122, 123, 124), Byzantine civilization (Classics M170), medieval Latin literature (Latin 131, 133). Total courses required: 16.

## Bachelor of Arts in Latin

### Preparation for the Major

*Required:* Greek 1, 2, 3 and Latin 1, 2, 3, or equivalent.

### The Major

*Required:* (1) Nine upper division courses in Latin, including course 110A; (2) one upper division course in Greek; (3) Classics 141 and either 142 or 143; (4) two courses in Greek or Roman history (History 115B-115C, 116A-116B, 117A-117B); (5) two additional courses in one or two of the related areas: classical archaeology (Classics M153A through M153H), classical linguistics (Classics 180), classical mythology (Classics 161, 162, 168), Greek and Roman religion (Classics 166A, 166B), ancient philosophy (Classics 145A, Philosophy 101A, 101B, 102, Greek 121, 122, 123, 124), Byzantine civilization (Classics M170), medieval Latin literature (Latin 131, 133). Total courses required: 16.

Note: Students in the Greek, Latin, and Greek and Latin majors are permitted to take Greek 200A-200B-200C and Latin 200A-200B-200C. Two of these courses may replace one course in requirement 3 of the Greek major and Latin major and requirement 2 of the Greek and Latin major, as well as two courses in requirement 1 of all three majors, thereby reducing the total number of required courses by one.

## Bachelor of Arts in English/Greek

### Preparation for the Major

*Required:* English 4, 10A, 10B, 10C, Greek 1, 2, 3.

### The Major

*Required:* (1) Seven courses from English 140A through 190 selected in consultation with an adviser in the Department of English; (2) seven upper division or graduate courses in Greek, including courses 100 and either 101A or 101B, selected in consultation with an adviser in the Department of Classics (of these seven courses, at least two must be in poetry and two in prose). Total courses required: 14.

## Bachelor of Arts in English/Latin

### Preparation for the Major

*Required:* English 4, 10A, 10B, 10C, Latin 1, 2, 3.

### The Major

*Required:* (1) Seven courses from English 140A through 190 selected in consultation with an adviser in the Department of English; (2) seven upper division or graduate courses in Latin, including courses 105A and 113, selected in consultation with an adviser in the Department of Classics (of these seven courses, at least two must be in poetry and two in prose). Total courses required: 14.

## Honors Program

The honors program is open to students in each of the departmental majors. To qualify for graduation with departmental honors, you must (1) complete all requirements for your major, (2) have a cumulative grade-point average of 3.5 or better in upper division courses in the department and an overall GPA of 3.0 or better, and (3) complete Classics 195A-195B-195C with a grade of A – or better.

To qualify for graduation with departmental highest honors, you must (1) complete all requirements for your major, (2) have a cumulative GPA of 3.85 or better in upper division courses in the department and an overall GPA of 3.65 or better, and (3) complete Classics 195A-195B-195C with a grade of A.

## Master of Arts Degrees

### Admission

Requirements for admission to the M.A. programs are a UCLA B.A. degree, or the equivalent, with a major in Greek and Latin (for the Classics M.A.), Greek (for the Greek M.A.), or Latin (for the Latin M.A.) and a grade-point average of at least 3.0 in the major; a statement of purpose; three letters of recommendation, normally from previous instructors in the classics; and the Graduate Record Examination (while there is no minimum required score, the GRE is used as a criterion in uncertain cases, as well as to assess applications for teaching assistantships and other financial assistance from the department). In cases of deficient preparation or doubtful equivalency to a

UCLA B.A., the department may grant provisional admission, requiring additional coursework or a written examination. Applicants for the Classics M.A. program who are deficient in Greek (or Latin) may be admitted to the Latin (or Greek) program, then permitted to transfer into the classics program when the deficiencies have been removed. The department uses the same application form as UCLA Graduate Application Processing, which may be obtained from the Department of Classics (7349 Bunche Hall, UCLA, Los Angeles, CA 90024-1475) or the Graduate Admissions Office.

### Major Fields or Subdisciplines

The department offers M.A. degrees in Classics (Greek and Latin), Greek, and Latin.

### Foreign Language Requirement

In addition to taking courses in Greek and/or Latin, you must demonstrate proficiency in German, French, or Italian during your first year of study, either by passing German 5, French 5, or Italian 5 at UCLA (or an equivalent course) with a minimum grade of C, or by examination. For German and French, the examination is the standard Graduate School Foreign Language Test (GSFLT) reading examination with a score of 500 or better; for Italian, a written translation examination is administered by the department.

### Course Requirements

For the Classics M.A., Classics 287, Greek or Latin 210, and five courses from Greek 200A-200B-200C/Latin 200A-200B-200C are required. For the Greek M.A., Classics 287, Greek 200A-200B-200C, and 210 are required. For the Latin M.A., Classics 287, Latin 200A-200B-200C, and 210 are required. (The Greek and Latin 200A-200B-200C courses test the appropriate sections of the departmental reading lists in a one-hour translation examination.) The remaining courses are to be selected in consultation with the graduate adviser.

No more than two half seminars, each counting as two units, and no more than one 500-series course may be applied toward the M.A. course requirements.

### Comprehensive Examination Plan

The department follows the comprehensive examination plan for the M.A. degrees. Before the examination, you are expected to complete the departmental reading lists in Greek authors (for the Greek M.A.) or Latin authors (for the Latin M.A.) or in Greek and Latin authors (for the Classics M.A.). The examination consists of a three-hour written test in Greek and Latin literature (Greek for Greek M.A., Latin for Latin M.A., Greek and Latin for Classics M.A.) in two parts: (1) passages for translation at sight and for generic identification and comparison and (2) an essay question combining periods kept separate in the Greek and Latin

200A-200B-200C courses (for Classics M.A., combining Greek and Latin). It must be taken no later than one term after you fulfill the M.A. course requirements. The examination may be repeated once, in the term following your first attempt; in exceptional cases and with consent of the departmental faculty, more than once. A grade of B+ or better is required for admission into the Ph.D. program.

## Ph.D. Degree

### Admission

A UCLA M.A. degree in Classics, Greek, or Latin, with a comprehensive examination grade of B+ or better, or an equivalent degree from another university is required.

In addition to an M.A. degree the department requires a statement of purpose. Students without a UCLA M.A. must also submit three letters of recommendation, normally from previous instructors in the classics, and the Graduate Record Examination (while there is no minimum required score, the GRE is used as a criterion in uncertain cases, as well as to assess applications for teaching assistantships and other financial assistance from the department). The department uses the same application form as UCLA Graduate Application Processing, which may be obtained from the department or the Graduate Admissions Office.

### Major Fields or Subdisciplines

The department offers the Ph.D. degree in Classics with major fields in (1) classical literature and philology, (2) classical linguistics, (3) Byzantine Greek, and (4) medieval Latin.

### Foreign Language Requirement

New students in the doctoral program will normally have demonstrated proficiency in French, German, or Italian as described in the requirements for the M.A. degree. During the first year of study in the Ph.D. program, you must demonstrate proficiency in either French (Italian may be substituted with consent of the regular departmental faculty) or German, whichever was not used to satisfy the M.A. requirement. If Italian or French was used to satisfy the M.A. requirement, German must be taken.

### Greek and Latin Graduate Courses

Most Greek and Latin seminars may be taken as follows: (1) full seminars (four units, letter grading), with a required final paper (or an equivalent workload, such as a final examination, as designated by the instructor) to be presented to the instructor and assessed as part of the final grade or (2) half seminars, with full participation in the course but no required paper (or equivalent as described above). Half seminars carry two units and are normally taken on an S/U grading basis only. Arrangements must be made with the instructor beforehand for S/U or letter grading, and the appropriate petition must be filed with the Registrar's Office.

## Course Requirements

*Classical Literature and Philology* — M.A. degree holders in Greek only or Latin only must take two 200A-200B-200C courses in the other language. In addition, five (or more) 200-series courses are required of all Ph.D. students, including Greek 210 and Latin 210 unless taken previously. Required courses (except for Greek 210 and Latin 210) are in addition to those taken for the M.A.

*Classical Linguistics* — M.A. degree holders in Greek only or Latin only must complete the Classics M.A. course requirements by taking two 200A-200B-200C courses in the other language. A minimum of five full seminars is required: Classics 180 (or an equivalent undergraduate or graduate course taken at UCLA or elsewhere), 240, Greek 242, 243, Latin 242, and either Classics 230A-230B or one term of Vedic (Indic M222A, presupposing three terms of upper division classical Sanskrit).

*Byzantine Greek* — M.A. degree holders in Greek only or Latin only must complete the Classics M.A. course requirements by taking courses 200A-200B-200C in the other language. A minimum of five full seminars is required: Greek 210, at least two courses from 231A-231B-231C, 240A-240B, 245, History 216A-216B.

*Medieval Latin* — M.A. degree holders in Greek only or Latin only must complete the Classics M.A. course requirements by taking courses 200A-200B-200C in the other language. A minimum of five full seminars is required: Latin 130 or 120, 131, 133 (or equivalent undergraduate or graduate courses taken at UCLA or elsewhere), 210, at least two courses from 231A-231B, 243 (or History 219A or 219B), Greek 231A or 231B or 231C (or an upper division medieval language course such as French 115A, 115B, 115C, German 122, Italian 113A, 113B, 114A, 114B, 190, Spanish M118A, M118B, 122, 123, or an equivalent undergraduate or graduate course taken at UCLA or elsewhere), History 217.

### Qualifying Examinations

Each major field has a separate reading list. All lists include the reading list in Greek and Latin authors required for the M.A. in Classics.

*Classical Literature and Philology* — (1) Two one and one-half hour translation examinations (one in Greek, one in Latin), which may be taken concurrently or separately, consisting of passages from the Ph.D. reading list and other literature (M.A. degree holders in Greek only or Latin only take an additional two-hour examination in sight translation from the other language), (2) a 15- to 25-page research paper on a field or author of your choice outside your area of specialization (submitted either before or after the comprehensive examination), (3) a written three-hour examination in your area of specialization and prospective dissertation topic.

*Classical Linguistics* — (1) A written three-hour translation examination in classical

Greek or Latin, (2) a written three-hour examination consisting of passages of ancient texts covered in the required course, (3) a two-hour written examination in comparative grammar.

*Byzantine Greek* — (1) A written three-hour translation examination in classical Greek and (2) a written three-hour examination on Byzantine Greek.

*Medieval Latin* — (1) A written three-hour translation examination in classical Latin and (2) a written three-hour examination on medieval Latin.

Complete examination details are available in the department. Each qualifying examination may normally be retaken twice. The University Oral Qualifying Examination, administered by the doctoral committee after you complete your last qualifying examination, tests your knowledge of your major field (and possible stipulated areas outside your specialization) and includes discussion of your formal dissertation proposal.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Dissertation/Final Oral Examination

An oral defense of the dissertation, which is written under the supervision of the individual adviser and must contribute significantly to research on the subject, may be required or waived at the discretion of the doctoral committee.

## Classics

### Lower Division Courses

**10. Survey of Classical Greek Culture.** Knowledge of Greek not required. Lectures, many illustrated, on Greek life and culture from age of Homer to Roman Conquest. Discussion of art, literature, philosophy, and mythology. Mr. Blank, Mr. Lattimore (F,W)

**20. Survey of Roman Civilization.** Knowledge of Latin not required. Study of life and culture of Rome from time of its foundation to end of antiquity. Survey of art, literature, and political thought of the Romans. Selections from Latin authors read in translation.

Mr. Frischer, Mr. Gurval, Ms. Newlands (W,Sp)

**40. Survey of Greek Literature in Translation.** Lecture, three hours; discussion, one hour. Readings in English of Greek literature from the beginning to Roman times to demonstrate the sweep of Greek literary achievement and the foundations it laid for subsequent literary developments. P/NP or letter grading.

Mr. Goldberg, Mr. Haslam

**41. Survey of Latin Literature in Translation.** Lecture, three hours; discussion, one hour. Readings in English to emphasize unique achievements of Latin literature, particularly in such areas as drama, epic, satire, oratory, and history. P/NP or letter grading.

Mr. Dyck, Mr. Gurval, Ms. Newlands

**50F. Power and Imagination in Ancient Rome.** Lecture, 90 minutes; discussion, 90 minutes. Prerequisite: consent of instructor. Freshman seminar designed to survey major aspects of Roman civilization, including art, religion, literature, and politics. P/NP or letter grading.

Mr. Frischer (F,W,Sp)

**51. Art and Archaeology of the Classical World.** Lecture, three hours; discussion, one hour. Survey of a major period, theme, or medium of Greek and Roman art and archaeology at discretion of instructor. P/NP or letter grading. Mr. Frischer, Mr. Lattimore

**M70. Survey of Medieval Greek Culture.** (Same as History M70.) Lecture, three to four hours. Classical roots and medieval manifestation of Byzantine civilization: political theory, Roman law, pagan critique of Christianity, literature, theology, and contribution to the Renaissance (including discovery of America).

Mr. Dyck

**88A-88Z. Lower Division Seminars.** Seminar, three hours. Variable topics; consult *Schedule of Classes* or department for topics to be offered in a specific term. P/NP or letter grading:

**88A. Socrates.** Examination of evidence for Socrates' life and thought, through texts from Plato, Xenophon, and Aristophanes, in an attempt to see how Socrates worked and affected those around him.

Mr. Blank (Sp)

**88C. Comparative Mythology.** Ways of studying myth through history, especially in ancient Near Eastern and Indo-European cultures. Comparison of myths on both diffusionary and genetic models. Reconstruction of protomyths common to prehistoric Western Asia and Europe.

Mr. Puhvel (F,W,Sp)

**88D. The Greek Symposium.** Freshman seminar on the topic of the Greek symposium, an institution that permits students to understand many major features of Greek culture and society.

Ms. Bergren

## Upper Division Courses

**140. Topics in History of Greek Literature.** Lecture, three hours. Prerequisites: courses 10, 40. Investigation of a specific issue in the understanding of Greek literature, such as definition of a genre or evaluation of a particular author. May be repeated for credit with topic change. P/NP or letter grading.

Mr. Haslam, Mr. Janko

**141. Topics in History of Latin Literature.** Lecture, three hours. Prerequisites: courses 20, 41. Investigation of a specific issue in the interpretation of Latin literature, such as definition of a genre or evaluation of a particular author. May be repeated for credit with topic change. P/NP or letter grading.

Mr. Goldberg, Mr. Gurval, Ms. Newlands

**142. Ancient Epic.** Lecture, three hours. Prerequisites: courses 10 or 20, and 40 or 41. Homer's *Iliad* and *Odyssey*, Vergil's *Aeneid*, and Ovid's *Metamorphoses*, studied in translation.

Ms. Bergren, Mr. Gurval, Ms. King

**143. Ancient Drama.** Lecture, three hours. Prerequisites: courses 10 or 20, and 40 or 41. Study of Greek and/or Latin drama in translation. P/NP or letter grading.

Mr. Goldberg, Mr. Haslam

**144. Generic and Topical Studies in Ancient Literature.** Lecture, three hours. Prerequisites: courses 10 or 20, and 40 or 41. Investigation of a problem in ancient literature that involves discussion of both Greek and Roman material. May be repeated for credit with topic change. P/NP or letter grading.

Mr. Frischer, Mr. Goldberg, Ms. Newlands

**145A. Ancient Greek and Roman Philosophy.** Lecture, two hours; discussion, one hour. Study of some major Greek and Roman philosophical texts, including those of Pre-Socratics, Plato, Aristotle, and Hellenistic philosophers, with emphasis on historical and cultural setting of the texts, their literary form, interrelations, and contribution to discussion of basic philosophical issues.

Mr. Blank

**145B. Later Ancient Greek Philosophy.** Lecture, two hours; discussion, one hour. Prerequisite: one course from 145A, Philosophy 1, 100A, 101B, or 102, or consent of instructor. Study of some major texts in Greek philosophy of the Hellenistic and Roman periods. Readings vary and include works by Stoics, skeptics, philosophers of science, Neoplatonists, etc.

Mr. Blank

**150A. Origins of the Western View of Women: The Female in Greek Thought.** Lecture, three hours. Prerequisites: course 10 or equivalent, consent of instructor. Interdisciplinary study of concept of the female in various forms of thought developed by the Greeks (e.g., epic, tragedy, comedy, history, political philosophy, gynecology). Special emphasis on how these texts lay the foundation for the Western view of women.

Ms. Bergren

**150B. Origins of the Western View of Women: The Female in Roman and Early Christian Thought.** Lecture, three hours. Prerequisites: course 20 or equivalent, consent of instructor. Interdisciplinary study of concept of the female in Roman and early Christian thought. Special emphasis on status of the female with regard to sexuality, procreation, and the sacred.

Ms. Bergren, Ms. Newlands

**C151E. Archaeological Field Techniques (12 units).** Off-campus field archaeology, 36 hours. Prerequisites: at least one classical archaeology course, consent of instructor. Training in techniques of archaeological research in the field, including topographic and area survey, mapping and recording artifacts, excavation and data analysis. Conducted in Mediterranean area. Concurrently scheduled with course C251E. P/NP or letter grading.

Ms. Morris

**152. The Ancient City.** Lecture, three to four hours. Prerequisites: courses 10 and 20, or History 1A, or equivalent. Study of urban planning in the ancient world, with particular attention to cities of classical Greece and Rome, but with consideration also to comparable developments in the ancient Near and Far East. Examination of questions of architectural space and organization, of form, design, and function of major municipal areas and buildings, and of provision of public amenities by detailed reference to significant archaeological sites and contemporary sources.

Mr. Frischer, Mr. Lattimore

**M153A. Minoan Art and Archaeology.** (Same as Art History M102A.) Lecture, three hours. Prerequisite: Art History 50. Study of development of art and architecture in Minoan Crete from ca. 3000 to 1000 B.C. P/NP or letter grading.

Ms. Morris

**M153B. Mycenaean Art and Architecture.** (Same as Art History M102B.) Lecture, three hours. Prerequisite: Art History 50. Study of development of art and architecture in Mycenaean Greece from ca. 2000 to 1000 B.C. P/NP or letter grading.

Mr. Janko, Ms. Morris

**M153C. Archaic Greek Art and Archaeology.** (Same as Art History M102C.) Lecture, three hours. Prerequisites: course 10 or equivalent, Art History 50. Study of development of art and architecture of Greek world from approximately 800 through 490 B.C. P/NP or letter grading.

Mr. Lattimore, Ms. Morris

**M153D. Classical Greek Art and Archaeology.** (Same as Art History M102D.) Lecture, three hours. Prerequisites: course 10 or equivalent, Art History 50. Recommended: upper division classics or Greek courses. Study of development of art and architecture of Greek world from approximately 490 through 350 B.C. P/NP or letter grading.

Mr. Lattimore

**M153E. Hellenistic Greek Art and Archaeology.** (Same as Art History M102E.) Lecture, three hours. Prerequisites: course 10 or equivalent, Art History 50. Study of development of art and architecture of Greek world from middle of the 4th century B.C., including transmittal of Greek art forms to the Romans. P/NP or letter grading.

Mr. Lattimore

**M153F. Etruscan Art.** (Same as Art History M102F.) Lecture, three hours. Prerequisite: Art History 50. Arts of Italic peninsula from ca. 1000 B.C. to end of the Roman Republic. P/NP or letter grading.

Ms. Downey

**M153G. Roman Art.** (Same as Art History M102G.) Lecture, three hours. Prerequisite: Art History 50. Art and architecture of Rome and its Empire from ca. 300 B.C. to A.D. 300. P/NP or letter grading.

Ms. Downey

**M153H. Late Roman Art.** (Same as Art History M102H.) Lecture, three hours. Prerequisites: course M153G, Art History 50. Art of Roman Empire from the 2nd through 4th century (A.D.). P/NP or letter grading.

Ms. Downey

**M153I-M153J-M153K. Classical Archaeology.** (Same as Art History M102I-M102J-M102K.) Lecture, three to four hours. Prerequisites: courses 10 and 20, or History 1A, or equivalent. Knowledge of Greek and Latin not required. General introduction to study of Aegean, Greek, and Roman architecture, sculpture, and painting. P/NP or letter grading.

**M153I. Greco-Roman Architecture; M153J. Greco-Roman Sculpture; M153K. Greco-Roman Painting.**

Mr. Lattimore, Ms. Morris

**161. Introduction to Classical Mythology.** Lecture, three to four hours. Prerequisite: course 10 or History 1A or equivalent. Origins of classical myth; substance of divine myth and heroic saga; place of myth in religion; survey of study of classical mythology.

Mr. Lattimore, Mr. Puhvel

**162. Classical Myth in Literature.** Use of myth in principal authors and genres of Greek and Roman literature, with examples of its influence in later literatures.

**165. Ancient Athletics.** Prerequisite: course 10 or History 1A or equivalent. Study of ancient Greek and Roman athletics and their connections with religion, politics, literature, and art.

Mr. Lattimore

**166A. Greek Religion.** Prerequisite: course 10 or equivalent. Study of the religion of the ancient Greeks.

Mr. Blank, Mr. Dyck, Mr. Janko

**166B. Roman Religion.** Prerequisite: course 20 or equivalent. Study of the religion of the ancient Romans.

Mr. Frischer, Ms. Newlands

**167. Greek and Roman Magic.** Lecture, three hours. Prerequisite: course 10 or 20. Study of beliefs about supernatural phenomena in the ancient world, including witches, ghosts, vampires, and magic spells, attested in both literary and archaeological sources.

Mr. Dyck

**168. Introduction to Comparative Mythology.** Prerequisite: course 161 or consent of instructor. Religious, mythical, and historical traditions of Greece and Rome compared with each other and with those of other ancient Near Eastern and European societies.

Mr. Puhvel

**M170. Power and Imagination in Byzantium.** (Formerly numbered 88B.) (Same as History M122.) Lecture, three hours. Prerequisites: course M70 or History 123A-123B. Study of relations of authority and the intelligentsia in the highly centralized Byzantine Empire. Topics include criticism of the emperor, iconoclasm, intellectual freedom, attempts at reform.

Mr. Dyck (F,W,Sp)

**180. Introduction to Classical Linguistics.** Prerequisites: Greek 3, Latin 3. Basics of comparative grammar of Greek and Latin in relation to one another and in the frame of Indo-European linguistics.

Mr. Janko, Mr. Puhvel

**190. The Medieval Book.** Seminar, three hours. Prerequisites: courses 10, 20, and 40 or 41, senior standing in Greek and Latin, Greek, Latin, or classical civilization. History of the book from manuscript to printing, with attention to construction, layout, decoration, and script, as well as changing cultural and historical contexts, medieval methods of information retrieval, and transition from script to print culture.

Mr. Blank

**195A-195B-195C. Senior Honors Paper (2 units, 2 units, 8 units).** Supervised through individual consultation with an appropriate faculty member, students write a research paper on a topic of their own choosing within their area of concentration in the major.

**195A.** P/NP grading. **195B.** Prerequisite: course 195A with a grade of P. P/NP grading. **195C.** Prerequisite: course 195B with a grade of P. Letter grading.

**197. Senior Seminar.** Lecture, three hours. Prerequisite: senior standing. Seminar on important themes, periods, genres of ancient Greek and Roman world that take an innovative interdisciplinary approach to questions old and new. Class presentations and papers.

Ms. Bergren, Mr. Blank, Mr. Janko (F,W,Sp)



**199. Special Studies in Classics (2 to 8 units).** Prerequisites: senior standing, consent of instructor.

## Graduate Courses

**200. History of Classical Scholarship.** Mr. Dyck

**230A-230B. Language in Ancient Asia Minor.** Prerequisite: consent of instructor. Survey of the language situation in Anatolia in 2nd and 1st Millennia B.C. Readings in Hittite, Palaic, Luwian, Hieroglyphic, Lycian, and Lydian texts. Anatolian-Greek relationships and survivals in classical and Hellenistic times. Mr. Puhvel

**240. Etruscology.** Prerequisite: consent of instructor. Survey of scholarly research on Etruscan language and culture, with analysis of epigraphic material. Mr. Puhvel

**244. Textual Criticism: Studies in Preparation of a Critical Edition of Greek and/or Latin Texts.** Seminar, three hours. Different steps required in preparation of a critical edition of an ancient text: localizing manuscripts; collation; establishing the stemma; selecting the right reading on basis of knowledge of the context, of the language of the author, and of the sources; emendations; formulation of *apparatus criticus* and *apparatus fontium*. Mr. Dyck, Mr. Haslam, Mr. Löffstedt

**245. Computing and Classics.** Introduction to processing and analysis of digitized texts of classical authors for purposes of literary history and criticism. Mr. Frischer

**246. Greek and Latin Meter.** Prerequisite: consent of instructor. Comprehensive study of meter as it functions in classical poetry. Mr. Haslam, Mr. Janko

**251A. Seminar: Classical Archaeology — Aegean Bronze Age.** Mr. Janko

**251B. Seminar: Classical Archaeology — Greco-Roman Architecture.** Mr. Frischer, Mr. Lattimore

**251C. Seminar: Classical Archaeology — Greco-Roman Sculpture.** Mr. Lattimore

**251D. Seminar: Classical Archaeology — Greco-Roman Painting.** Discussion, three hours. Prerequisite: consent of instructor. Studies in style and iconography of various periods of ancient Greek and Roman painting. May be repeated for credit with consent of instructor. Mr. Lattimore

**C251E. Archaeological Field Techniques (12 units).** (Formerly numbered 251E.) Off-campus field archaeology, 36 hours. Prerequisites: at least one classical archaeology course, consent of instructor. Training in techniques of archaeological research in the field, including topographic and area survey, mapping and recording artifacts, excavation and data analysis. Conducted in Mediterranean area. Concurrently scheduled with course C151E. S/U or letter grading. Ms. Morris

**252. Topography and Monuments of Athens.** Detailed studies in topography and monuments of Athens, combining evidence of literature, inscriptions, and actual remains. Mr. Lattimore

**253. Topography and Monuments of Rome.** Detailed studies in topography and monuments of ancient Rome, combining evidence of literature, inscriptions, and actual remains. Mr. Frischer, Mr. Lattimore

**260. Topics in Ancient Religion.** Seminar, three hours. Prerequisite: consent of instructor. Ms. Bergren, Mr. Frischer, Mr. Lattimore

**268. Seminar: Comparative Mythology.** Prerequisites: course 168, consent of instructor. Advanced study of selected topics in comparing Greek and Roman traditions with other ancient Near Eastern and European societies. Mr. Puhvel

**287. Graduate Colloquium in Classical Literature.** Survey of basic methods of and approaches to classical scholarship, including textual criticism, literary interpretation and theory, hermeneutics, interdisciplinary studies, and computer applications to classics. Emphasis varies from year to year, depending on instructor(s). May be repeated for credit with topic change. S/U grading. (F,W,Sp)

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**380. Research Apprentice Practicum.** Discussion, three hours. Prerequisite: apprentice personnel employment as a graduate student researcher in the department on Philodemus Translation Project. Training in textual reconstruction, translation, and annotation for those working as graduate student researchers on Philodemus Translation Project (text and facing translation of fragmentary aesthetic treatises of Philodemus, teacher of Vergil). Mr. Blank, Mr. Janko

**596. Directed Individual Study or Research (2 to 8 units).**

**597. Study for M.A. Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 8 units).**

**599. Research for Ph.D. Dissertation (2 to 8 units).**

## Greek

### Lower Division Courses

**1. Elementary Greek.** Lecture, five hours. (F)

**2. Elementary Greek.** Lecture, five hours. Prerequisite: course 1. (W)

**3. Elementary Greek.** Lecture, five hours. Prerequisite: course 2. (Sp)

### Upper Division Courses

Note: Greek 3 is prerequisite to 100, which is prerequisite to 101A through 106 and 110 through 124.

**100. Readings in Greek Prose.** Prerequisite: course 3. Reading of Plato's *Apology* or a text of comparable difficulty. Ms. Bergren, Mr. Haslam, Mr. Janko

**101A. Homer: *Odyssey*.** Mr. Haslam, Mr. Janko, Mr. Puhvel

**101B. Homer: *Iliad*.** Mr. Haslam, Ms. King, Mr. Puhvel

**102. Lyric Poets.** Selections from Archilochus to Bacchylides. Ms. Bergren, Mr. Haslam, Mr. Janko

**103. Aeschylus.** Mr. Blank, Mr. Haslam, Mr. Janko

**104. Sophocles.** Ms. Bergren, Mr. Haslam, Mr. Janko, Ms. King

**105. Euripides.** Mr. Haslam, Mr. Janko, Ms. King

**106. Aristophanes.** Ms. Bergren, Mr. Haslam, Mr. Janko

**107. Hesiod.** Lecture, three hours. Prerequisite: course 100. Reading of *Theogony* and excerpts from *Works and Days*, with emphasis on Hesiod's place in Greek literature and his role in transmission of Greek mythology. Mr. Goldberg, Mr. Janko

**110. Study of Greek Prose.** Work in sight reading and grammatical analysis of Attic prose texts; writing Attic prose. Mr. Blank, Mr. Haslam, Mr. Janko

**111. Herodotus.** Mr. Blank, Mr. Janko, Mr. Lattimore

**112. Thucydides.** Mr. Haslam, Mr. Janko, Mr. Lattimore

**113. Attic Orators.** Mr. Dyck, Mr. Haslam, Mr. Lattimore

**115. Xenophon.** Lecture, three hours. Prerequisite: course 100. Reading of one major work of Xenophon — the *Memorabilia*, *Cyropaedia*, *Anabasis*, *Hellenica*, or *Oeconomicus* — in Greek. P/NP or letter grading. Mr. Blank, Mr. Lattimore (W)

**121. Plato.** Mr. Blank, Mr. Frischer, Ms. King

**122. Plato: *Republic*.** Ms. Bergren, Mr. Blank, Mr. Haslam

**123. Aristotle: *Poetics and Rhetoric*.** Mr. Blank, Mr. Haslam, Mr. Janko

**124. Aristotle: *Ethics*.** Mr. Blank, Mr. Dyck, Mr. Frischer

**130. Readings in the New Testament.** Prerequisite: course 3. Mr. Dyck, Mr. Haslam

**131. Readings in Later Greek.** Prerequisite: course 100. Topics vary from year to year and include "Longinus," On the Sublime; Marcus Aurelius; Arrian; the Second Sophistic; Plutarch; later epic; epigram; epistolographi Graeci. Mr. Blank, Mr. Dyck, Mr. Gurval

**132. Survey of Byzantine Literature.** Prerequisite: course 100. Readings based on (1) *Anthology of Byzantine Prose*, ed. Nigel Wilson and (2) *Oxford Book of Medieval and Modern Greek Verse*, ed. C.A. Trypanis, or if unavailable, *Poeti bizantini*, ed. R. Cantarella. In addition, necessary historical and cultural background provided by readings and lectures. Mr. Dyck

**133. Readings in Byzantine Literature.** Prerequisite: course 132. Topics vary from year to year and include Procopius, Agathias, Michael Psellus, the Alexiad of Anna Comnena, and Digenis Akritas. Mr. Dyck

**199. Special Studies in Greek (2 to 8 units).** Prerequisites: senior standing, consent of instructor.

## Graduate Courses

The 200-series courses which are designated A and B (e.g., 201A-201B) are double courses. Course A is a preseminar and is normally prerequisite to course B, a seminar. Seminars numbered 201A through 233 (except 210) may be taken for either two or four units. If a seminar is taken for four units, a paper is required.

**200A-200B-200C. History of Greek Literature (6 units each).** Prerequisite: consent of instructor. Lectures on history of Greek literature, supplemented on the part of the student by independent reading of Greek texts in original language. Ms. Bergren, Mr. Haslam, Mr. Janko

**201A-201B. Homer: *Iliad* (2 or 4 units each).** S/U (two-unit course) or letter (four-unit course) grading. Ms. Bergren, Mr. Haslam, Mr. Janko

**202A-202B. Homer: *Odyssey* and the Epic Cycle (2 or 4 units each).** S/U (two-unit course) or letter (four-unit course) grading. Ms. Bergren, Mr. Haslam, Mr. Janko

**203. Hesiod (2 or 4 units).** S/U (two-unit course) or letter (four-unit course) grading. Ms. Bergren, Mr. Frischer, Mr. Janko

**204. Homeric Hymns (2 or 4 units).** S/U (two-unit course) or letter (four-unit course) grading. Ms. Bergren, Mr. Janko

**205. Seminar: Aeschylus (2 or 4 units).** S/U (two-unit course) or letter (four-unit course) grading. Ms. Bergren, Mr. Blank, Mr. Haslam

**206A-206B. Sophocles (2 or 4 units each).** S/U (two-unit course) or letter (four-unit course) grading. Mr. Haslam, Mr. Lattimore

**207A-207B. Euripides (2 or 4 units each).** S/U (two-unit course) or letter (four-unit course) grading. Mr. Haslam, Ms. King

**208A-208B. Aristophanes (2 or 4 units each).** S/U (two-unit course) or letter (four-unit course) grading. Ms. Bergren

**209A-209B. Seminars: Hellenistic Poetry (2 or 4 units each).** (Formerly numbered 209.) S/U (two-unit course) or letter (four-unit course) grading. Mr. Frischer, Mr. Haslam

**210. Advanced Greek Prose Composition.** Prerequisite: course 110 or equivalent. Mr. Haslam, Mr. Janko

**211A-211B. Herodotus (2 or 4 units each).** S/U (two-unit course) or letter (four-unit course) grading. Mr. Blank

**212A-212B. Thucydides (2 or 4 units each).** S/U (two-unit course) or letter (four-unit course) grading. Mr. Haslam, Mr. Lattimore

**213. Seminar: Greek Historiography (2 or 4 units).** S/U (two-unit course) or letter (four-unit course) grading. Mr. Haslam

**214. Demosthenes (2 or 4 units).** S/U (two-unit course) or letter (four-unit course) grading. Mr. Dyck

**215. Early Greek Orators (2 or 4 units).** Studies in works of Antiphon, Andocides, and Lysias. S/U (two-unit course) or letter (four-unit course) grading. Mr. Dyck

**216. Menander (2 or 4 units).** Prerequisite: reading knowledge of classical Greek. S/U (two-unit course) or letter (four-unit course) grading. Mr. Frischer, Mr. Goldberg

**217A-217B. Greek Lyric Poetry (2 or 4 units each).** Prerequisite: consent of instructor. S/U (two-unit course) or letter (four-unit course) grading. **217A.** Archaic Lyric. Study of lyric poetry of Archaic period, both choral and monodic, with elegiac and iambic included. **217B.** Pindar and Bacchylides. Study of choral odes of Pindar and Bacchylides, with special attention to conventions of the epinician. Ms. Bergren, Mr. Haslam, Mr. Janko

**220. Seminar: Greek Novel (2 or 4 units).** Lecture, three hours. Study of the Greek romance and its place in Greek literature. Two texts (Chariton: *Chaereas and Callirhoe* and Longus: *Daphnis and Chloe*) studied in some detail. S/U (two-unit course) or letter (four-unit course) grading.

**221. Seminar: Pre-Socratic Philosophers (2 or 4 units).** S/U (two-unit course) or letter (four-unit course) grading. Mr. Blank, Mr. Frischer

**222A-222B. Plato (2 or 4 units each).** S/U (two-unit course) or letter (four-unit course) grading. Ms. Bergren, Mr. Blank

**223A-223B. Aristotle (2 or 4 units each).** S/U (two-unit course) or letter (four-unit course) grading. Mr. Blank, Mr. Dyck, Mr. Frischer

**224. Seminar: Post-Aristotelian Philosophy (2 or 4 units).** S/U (two-unit course) or letter (four-unit course) grading. Mr. Blank, Mr. Frischer

**231A-231B-231C. Seminars: Later Greek and Byzantine Literature (2 or 4 units each).** Prerequisite: consent of instructor. Studies in various aspects of Byzantine Greek language and literature. Topics vary from year to year. Each course may be taken independently and may be repeated for credit with topic change. S/U (two-unit course) or letter (four-unit course) grading. Mr. Blank, Mr. Dyck

**233. Byzantine Poetry (2 or 4 units).** Study of main representatives of both religious and secular poetry. S/U (two-unit course) or letter (four-unit course) grading. Mr. Dyck

**240A-240B. History of the Greek Language.** Prerequisite: consent of instructor. **240A.** Linguistic history of classical Greek. **240B.** Postclassical, medieval, and modern Greek. Mr. Dyck, Mr. Janko

**241. Greek Epigraphy.** Survey of Greek historical inscriptions, chiefly Attic. Mr. Dyck

**242. Greek Dialects and Historical Grammar.** Prerequisite: consent of instructor. Linguistic situation in early Greece. Readings in classical Greek dialectal texts. Greek grammar in context of common Greek and Indo-European linguistics. Mr. Janko, Mr. Puhvel

**243. Mycenaean Greek.** Prerequisite: consent of instructor. Script, language, and grammar of the Linear B inscriptions; their relevance to ancient Greek linguistic and cultural history. Mr. Janko, Mr. Puhvel

**244. Greek Papyrology.** Prerequisites: reading knowledge of Greek, consent of instructor. Introduction to Greek papyri, considered both as historical documents and as carriers of literature. Mr. Haslam

**245. Greek Paleography.** Studies in development of book hand in Greek manuscripts earlier than the invention of printing. Mr. Blank

**596. Directed Individual Study or Research (2 to 8 units).**

**597. Study for M.A. Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 8 units).**

**599. Research for Ph.D. Dissertation (2 to 8 units).**

## Latin

### Lower Division Courses

**1. Elementary Latin.** Lecture, five hours. (F)

**1G. Elementary Latin for Graduate Students (No credit).** Concurrently scheduled with course 14.

**2. Elementary Latin.** Lecture, five hours. Prerequisite: course 1. (W)

**3. Elementary Latin.** Lecture, five hours. Prerequisite: course 2. (Sp)

**14. Elementary Latin: Intensive (8 units).** All declensions of nouns and adjectives, all conjugations in indicative mood, and primary uses of subjunctive mood. Emphasis on development of ability to read easy selections of classical prose.

### Upper Division Courses

Note: Latin 3 is prerequisite to 100, which is normally prerequisite to all other 100-series courses in classical Latin authors.

**100. Readings in Latin Prose and Poetry.** Lecture, three hours. Prerequisite: course 3 or equivalent. Close study of a prose text supplemented with related readings in poetry. Attention to historical and cultural context. Course is normally prerequisite to other courses in the Latin 100 series.

Mr. Frischer, Mr. Gurval, Ms. Newlands

**101. Plautus.** Mr. Goldberg, Mr. Löfstedt

**102. Terence.** Mr. Goldberg, Mr. Löfstedt

**103. Lucretius.** Mr. Blank, Mr. Frischer, Ms. Newlands

**104. Ovid.** Ms. Bergren, Mr. Gurval, Ms. Newlands

**105A. Beginning Vergil: Selections from Aeneid I-VI.** (Formerly numbered 105.) Lecture, three hours. Prerequisite: course 100 or consent of instructor. Reading of one or more books from first half of the *Aeneid*, designed especially for students with only limited experience in reading Latin poetry. Mr. Frischer, Mr. Gurval, Ms. Newlands

**105B. Advanced Vergil.** Lecture, three hours. Prerequisite: course 105A or equivalent or consent of instructor. Reading and discussion of Vergil's *Eclogues*, *Georgics*, and/or second half of the *Aeneid*. May be repeated for credit with change in readings. P/NP or letter grading. Ms. Newlands (Sp)

**106. Catullus.** Mr. Haslam, Ms. Newlands

**107. Horace.** Mr. Frischer, Mr. Gurval, Ms. Newlands

**108. Roman Elegy.** Selections from Catullus, Tibullus, and Propertius. Mr. Frischer, Mr. Gurval, Ms. Newlands

**109. Roman Satire.** Selections from *Epistles* of Horace, *Satires* of Juvenal, and *Epigrams* of Martial. Mr. Frischer, Ms. Newlands

**110A-110B. Study of Latin Prose.** Discussion, three hours. Course 110A is prerequisite to 110B. Work in sight reading and grammatical analysis of classical prose texts; writing of classical prose. Mr. Gurval, Mr. Löfstedt, Ms. Newlands

**111. Livy.** Mr. Frischer, Mr. Gurval, Mr. Löfstedt

**112. Tacitus.** Mr. Frischer, Mr. Gurval, Ms. Newlands

**113. Cicero: The Orations.** Mr. Dyck, Mr. Frischer, Mr. Gurval

**114. Roman Epistolography: Cicero and Pliny.**

Mr. Dyck, Mr. Frischer, Mr. Gurval

**115. Caesar.** Mr. Dyck, Mr. Gurval

**116. Roman Novel.** Lecture, three hours. Prerequisite: course 100 or equivalent. Reading and discussion of either Petronius' *Satyricon* or Apuleius' *Metamorphoses* and development of the genre of prose novel in antiquity. May be repeated for credit with change in author and text. Mr. Frischer, Mr. Gurval, Ms. Newlands

**117. Sallust.** Mr. Gurval, Ms. Newlands

**118. Seneca.** Selection of Seneca's works read in Latin. Mr. Gurval, Mr. Löfstedt, Ms. Newlands

**120. The Vulgate.** Lecture, three hours. Prerequisite: course 3 or consent of instructor. Reading of selected chapters of St. Jerome's translation of the Bible, with emphasis on unclassical features of the Latin. Mr. Löfstedt

**121. Patristic Texts.** Lecture, three hours. Prerequisite: course 100. Reading and discussion of one or more Latin patristic texts (especially works of Ambrose, Augustine, and/or Jerome), with emphasis on specific features of patristic, as opposed to classical, Latin. Mr. Löfstedt

**130. Introduction to Medieval Latin.** Prerequisite: course 3 or consent of instructor. Reading of easy prose texts, with emphasis on basic language training. Mr. Löfstedt

**131. Medieval Latin Prose.** Prerequisite: course 130 or consent of instructor. Extensive reading of selected texts in prose, with emphasis on idiosyncrasies of medieval Latin. Mr. Löfstedt

**133. Medieval Latin Poetry.** Prerequisite: one upper division Latin language course or consent of instructor. Mr. Löfstedt

**199. Special Studies in Latin (2 to 8 units).** Prerequisites: senior standing, consent of instructor.

## Graduate Courses

The 200-series courses which are designated A and B (e.g., 203A and 203B) are double courses. Course A is a preseminar and is normally prerequisite to course B, a seminar. Seminars numbered 201 through 231B (except 210) may be taken for either two or four units. If a seminar is taken for four units, a paper is required.

**200A-200B-200C. History of Latin Literature (6 units each).** Prerequisite: consent of instructor. Lectures on history of Latin literature, supplemented on the part of the student by independent reading of Latin texts in the original. Mr. Frischer, Mr. Goldberg, Ms. Newlands

**201. Roman Epic Tradition (2 or 4 units).** Seminar, three hours. Close study of one epic poet other than Vergil (e.g., Ennius, Lucan, Valerius Flaccus, Statius, Silius Italicus), with attention to the literary tradition of epic. May be repeated for credit with topic change. S/U (two-unit course) or letter (four-unit course) grading. Mr. Gurval, Ms. Newlands

**202. Seminar: Catullus (2 or 4 units).** Detailed consideration of entire Catullan corpus. S/U (two-unit course) or letter (four-unit course) grading. Ms. Newlands

**203A. Elegiac Poetry (2 or 4 units).** S/U (two-unit course) or letter (four-unit course) grading. Mr. Frischer, Ms. Newlands

**203B. Propertius (2 or 4 units).** S/U (two-unit course) or letter (four-unit course) grading. Mr. Frischer, Mr. Gurval, Ms. Newlands

**204A-204B. Vergil's Aeneid (2 or 4 units each).** S/U (two-unit course) or letter (four-unit course) grading. Mr. Frischer, Mr. Gurval, Ms. Newlands

**205A. Seminar: Vergil's Bucolics (2 or 4 units).** S/U (two-unit course) or letter (four-unit course) grading. Mr. Frischer, Mr. Gurval, Ms. Newlands

**205B. Seminar: Vergil's *Georgics* (2 or 4 units).** Close reading of Vergil's text; careful evaluation of influential criticism on the poem, much of it recent; examination of the work's place within the tradition of rural poetry. S/U (two-unit course) or letter (four-unit course) grading. Ms. Newlands

**206. Horace (2 or 4 units).** S/U (two-unit course) or letter (four-unit course) grading.

Mr. Frischer, Mr. Gurval, Ms. Newlands

**207. Roman Comedy (2 or 4 units).** Prerequisite: consent of instructor. Survey of history of Roman comedy. Reading of one comedy by Plautus or Terence, with emphasis on language and meter. S/U (two-unit course) or letter (four-unit course) grading.

Mr. Goldberg, Mr. Löfstedt

**208. Ovid (2 or 4 units).** Prerequisite: reading knowledge of classical Latin. Detailed study of poetic works of Ovid. Readings in the original with discussion of secondary literature and scholarship. May be repeated for credit with topic change. S/U (two-unit course) or letter (four-unit course) grading.

Ms. Bergren, Ms. Newlands

**209. Seminar: Roman Satire (2 or 4 units).** Detailed study of an individual satirist, with attention to his position in development of the satirical genre in Roman literature. Choice of author varies from year to year. Close study of the text, of characteristics of the writer as a social critic and artist, and of contemporary literary and social environment. S/U (two-unit course) or letter (four-unit course) grading.

Mr. Frischer, Ms. Newlands

**210. Advanced Latin Prose Composition.** Prerequisite: course 110B.

**211A-211B-211C. Seminars: Roman Historians (2 or 4 units each).** Study of considerable portions of writings of the following. S/U (two-unit course) or letter (four-unit course) grading:

**211A.** Sallust. Mr. Gurval, Ms. Newlands

**211B.** Livy. Mr. Frischer, Mr. Gurval

**211C.** Tacitus.

Mr. Frischer, Mr. Gurval, Ms. Newlands

**215. Seminar: Roman Novel (2 or 4 units).** Works such as Petronius' *Satyricon* and Apuleius' *Metamorphoses*: study of literary problems. May be repeated for credit with topic change. S/U (two-unit course) or letter (four-unit course) grading.

Mr. Blank, Mr. Frischer, Ms. Newlands

**216. Roman Rhetoric (2 or 4 units).** Seminar, three hours. Close study of one rhetorical text (e.g., *Rhetorica ad Herennium*, Cicero's *de Oratore*, Seneca's *Controversiae* or *Suasoriae*, Quintilian's *Institutio*), with attention to its place in rhetorical tradition. May be repeated with topic change. S/U (two-unit course) or letter (four-unit course) grading.

Mr. Dyck, Mr. Frischer, Ms. Newlands

**220. Cicero's Orations (2 or 4 units).** Seminar, three hours. S/U (two-unit course) or letter (four-unit course) grading.

Mr. Dyck, Mr. Frischer, Ms. Newlands

**221A. Cicero's Philosophical Works (2 or 4 units).** S/U (two-unit course) or letter (four-unit course) grading.

Mr. Dyck, Mr. Frischer

**221B. Cicero: De Natura Deorum (2 or 4 units).** S/U (two-unit course) or letter (four-unit course) grading.

Mr. Dyck, Mr. Frischer

**222. Seminar: Roman Stoicism (2 or 4 units).** Prerequisite: reading knowledge of Greek and Latin. S/U (two-unit course) or letter (four-unit course) grading.

Mr. Blank, Mr. Dyck, Mr. Frischer

**223. Lucretius (2 or 4 units).** S/U (two-unit course) or letter (four-unit course) grading.

Mr. Blank, Mr. Frischer

**224. Seneca (2 or 4 units).** Seminar, three hours. Detailed study of one work of prose or poetry by the younger Seneca. Emphasis on literary and philological problems, with some attention to philosophical and historical matters as well. May be repeated with topic change. S/U (two-unit course) or letter (four-unit course) grading.

Mr. Goldberg, Mr. Gurval, Ms. Newlands

**231A-231B. Seminars: Medieval Latin (2 or 4 units each).** Prerequisite: at least one upper division Latin course or consent of instructor. Studies in various areas of the language and literature of medieval Latin. May be repeated for credit with consent of instructor. S/U (two-unit course) or letter (four-unit course) grading.

Mr. Löfstedt

**232. Vulgar Latin.** Prerequisite: consent of instructor. History and characteristics of popular Latin; its development into early forms of the Romance languages.

Mr. Löfstedt

**235. Late Latin Poetry.** Seminar, three hours. Close study, with attention to literary and historical background, of work of one or several poets who flourished between the death of Ovid and fall of the Roman Empire.

Ms. Newlands

**236. Late Latin Prose.** Seminar, three hours. Close study, with attention to literary and historical background, of work of one or several prose authors who flourished between the death of Tacitus and fall of the Roman Empire.

Ms. Newlands

**240. History of the Latin Language.** Prerequisite: consent of instructor. Development of Latin from the earliest monuments until its emergence in the Romance languages.

Mr. Löfstedt

**242. Italic Dialects and Latin Historical Grammar.** Prerequisite: consent of instructor. Linguistic situation in early Italy. Readings in Oscan, Umbrian, and early Latin texts. Latin grammar in context of Italic and Indo-European linguistics.

Mr. Puhvel

**243. Seminar: Latin Paleography.** Studies in development of book hand in Latin manuscripts earlier than the invention of printing.

**370. Teaching Latin.** Prerequisite: graduate standing or consent of instructor. Techniques for teaching; organization of courses; review of content of curriculum offered in junior and senior high schools.

**495. College Teaching of Latin (2 units).** Prerequisites: appointment as a teaching assistant, consent of instructor. Methodology of instruction in conjunction with classroom practice. May be repeated for credit. S/U grading.

Mr. Goldberg

**596. Directed Individual Study or Research (2 to 8 units).**

**597. Study for M.A. Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 8 units).**

**599. Research for Ph.D. Dissertation (2 to 8 units).**

## Related Courses in Other Departments

**Ancient Near East (Near Eastern Languages) 170.** Introduction to Biblical Studies

272. Semitic Background of the New Testament

**Art History M102C.** Archaic Greek Art and Archaeology

M102D. Classical Greek Art and Archaeology

M102E. Hellenistic Greek Art and Archaeology

M102G. Roman Art

223. Classical Art

**History 115A-115B-115C.** History of Ancient Mediterranean World

116A-116B. History of Ancient Greece

117A-117B. History of Rome

121A-121B. Medieval Europe

123A-123B. Byzantine History

215A-215B. Seminars: Ancient History

216A-216B. Seminars: Byzantine History

222A-222B. Seminars: Medieval Intellectual History and History of Science

**Indo-European Studies 132.** European Archaeology: Bronze Age

M150. Introduction to Indo-European Linguistics

210. Indo-European Linguistics: Advanced Course

280A-280B. Seminars: Indo-European Linguistics

**Philosophy 101A.** Plato — Earlier Dialogues

101B. Plato — Later Dialogues

102. Aristotle

## Communication Studies (Interdepartmental)

334 Kinsey Hall, (310) 825-3303

### Professors

Gordon L. Berry, Ed.D. (*Education*)

Christine L. Borgman, Ph.D. (*Library and Information Science*)

Andrew Christensen, Ph.D. (*Psychology*)

Patricia M. Greenfield, Ph.D. (*Psychology*;

*Distinguished Teaching Award*)

Nancy M. Henley, Ph.D. (*Psychology*)

John C. Heritage, Ph.D. (*Sociology*)

Shanto Iyengar, Ph.D. (*Political Science*)

Neil M. Malamuth, Ph.D., *Chair*

Melvin Pollner, Ph.D. (*Sociology*)

Donald E. Hargis, Ph.D., *Emeritus*

### Associate Professors

Donald O. Case, Ph.D. (*Library and Information Science*)

Patrice L. French, Ph.D.

Paul I. Rosenthal, Ph.D. (*Distinguished Teaching Award*)

### Assistant Professor

Steven E. Clayman, Ph.D.

### Lecturers

Jeffrey I. Cole, Ph.D. (*Distinguished Teaching Award*)

L. Geoffrey Cowan, LL.B. (*Distinguished Teaching Award*)

Marde S. Gregory, M.A. (*Distinguished Teaching Award*)

## Scope and Objectives

The major in communication studies is an interdisciplinary program leading to a Bachelor of Arts degree. It seeks to provide students with a comprehensive knowledge of the nature of human communication, the symbol systems by which it functions, the environments in which it occurs, its media, and its effects. Employing critical and empirical approaches, the major draws its resources from the social sciences, humanities, and fine arts. Two areas of specialty are offered: the specialization in mass communication centers on formal and institutional communication systems and the macrocosmic social contexts in which they function; the specialization in interpersonal communication centers on face-to-face communicative interaction in the small group environment.

## Bachelor of Arts Degree

Students selecting the major in communication studies must complete the required lower division prerequisites and a minimum of 15 upper division courses as set forth below. Enrollment in the major is limited. Admission to the major is by application to the committee in charge. Applications are available in the program office.

### Preparation for the Major

*Required lower division courses:* Communication Studies 10, Psychology 10, Sociology 1, Speech 1, Anthropology 33 or Linguistics 1, Program in Computing 1, one course from Economics 40, Sociology 18, or Statistics 50.

*You are encouraged but not required to complete as many lower division preparation for the major courses as possible before admission to the program.*

### Writing Requirement

*Required:* English 131D.

### The Major

*Required Core Courses:* Communication Studies 100 and 101 and one course from Anthropology M140, Communication Studies 102, or Psychology 122.

### Specializations

**Mass Communication** — (1) Communication Studies 140, 152, and one course from Political Science 141, Psychology 137B, Sociology 133; (2) *systems, institutions, and policies* — two courses from Communication Studies 153, 155, 156, 165, 170, 177, 180, 187, either Communication Studies M147 or Sociology M176; (3) *media content/criticism/history* — two courses from Communication Studies 160, M161, 171, Film and Television 106A, 108, 110A, either Communication Studies 175 or Film and Television 116; (4) *electives in interpersonal communication* — two courses from Communication Studies 115, 120, 130, M144A or M144B or Sociology CM124A or CM124B, Psychology 135 or Sociology 132, Sociology 135, 160; (5) *general electives* — two courses from one of the following groups: (a) *American studies* — English 115A, History 148A, 148B, 148C, 150A, 150B, 156A, 156B, Political Science 114A, 114B; (b) *language theory* — Communication Studies M124, 150, Linguistics 170, Philosophy 172, Psychology 122 or 123; (c) *social systematics* — Communication Studies M144A or M144B or Sociology CM124A or CM124B, Anthropology 133R, 135A, 135B, 142A, 142B, Sociology 134.

**Interpersonal Communication** — (1) Four courses (at least one of which must be Communication Studies 115 or 120) from Communication Studies 115, 120, M144A or M144B or Sociology CM124A or CM124B, Sociology 133, 135, either Psychology 135 or Sociology 132; (2) *heterogeneous groups communication* — three courses from Anthropology 141,

Communication Studies 130, Psychology 137C, M165, 174, 177, 178, either Sociology 156 or 160; (3) *electives in mass communication* — two courses from Communication Studies 140, 152, 153, 155, 165, 170, 180, 187, either Communication Studies M147 or Sociology M176; (4) *general electives* — two courses from one of the following groups: (a) *media content/criticism/history* — Communication Studies 160, 171, Film and Television 106A, 108, 110A, either Communication Studies 175 or Film and Television 116; (b) *language theory* — Communication Studies M124, 150, Linguistics 170, Philosophy 172, Psychology 122 or 123; (c) *social systematics* — Communication Studies M144A or M144B or Sociology CM124A or CM124B, Anthropology 133R, 135A, 135B, 142A, 142B, Sociology 134.

## Lower Division Courses

**10. Introduction to Communication Studies.** Introduction to fields of mass communication and interpersonal communication. Study of modes, media, and effects of mass communication, interpersonal processes, and communication theory.

Mr. Cole (F,W,Sp)

**88A-88Z. Lower Division Seminars: Special Topics in Communication Studies.** (Formerly numbered 97A-97Z.) Seminar, three hours. Variable topics courses; consult *Schedule of Classes* for topics to be offered in a specific term. P/NP or letter grading.

**88A.** Mass Communication Theory; **88B.** Systems, Institutions, and Policies; **88C.** Media Content/Criticism and History; **88D.** American Studies; **88E.** Language/Interaction Structures; **88F.** Social Systematics; **88G.** Interpersonal Communication Theory; **88J.** Heterogeneous Groups Communication;

**88C.** Future of Mass Communication. (Formerly numbered 97C.) Prerequisite: freshman standing. Current state of mass media in the world and, through analysis of trends, content, and societal forces, speculation on future of the media over next 25 years.

Mr. Cole

## Upper Division Courses

**100. Communication Theory.** Prerequisite: course 10 or Linguistics 1 or Sociology 1 or Psychology 10 or consent of instructor. Analysis of fundamental nature of human communication; its physical, linguistic, psychological, and sociological bases. Study of theoretical models explicating the process and constituents of the communicative act.

Mr. Clayman, Ms. French

**101. Freedom of Communication.** Analysis of legal, political, and philosophical issues entailed in rights of free expression, access to an audience, and access to information. Study of court decisions governing freedom of communication in the U.S.

Mr. Cowan, Mr. Rosenthal (F,Sp)

**102. Code of Human Communication.** Prerequisite: course 10 or Linguistics 1 or Sociology 1 or Psychology 10 or consent of instructor. Structural analysis and description of human communication codes; development of language; characteristics of the source, channels, and destination in human communication.

Ms. French

**115. Dyadic Communication and Interpersonal Relationships.** Prerequisite: course 100. Developmental approach to study of communication in dyadic relationships. Analysis of differences in the stages of relationships in terms of communication rules and verbal and nonverbal messages.

Ms. French, Ms. Henley

**M116. Communication and Conflict in Couples and Families.** (Same as Psychology M176.) Lecture, 90 minutes; discussion, 90 minutes. Prerequisites: Psychology 10 or 11, 41, and 127, or consent of instructor. Examination of (1) dysfunctional communication and conflict in couples and families and (2) relationship of these processes to individual psychopathology, marital discord, and family disruption (e.g., separation and divorce).

Mr. Christensen

**120. Principles and Types of Group Communication.** Prerequisite: course 100 or consent of instructor. Analysis of purposes, principles, and types of small group communication. Particular emphasis on organization of and participation in problem-solving discussion.

**M124. Psychology of Language and Gender.** (Same as Psychology M137J and Women's Studies M137J.) Lecture, three hours. Prerequisites: Psychology 10 or equivalent, junior standing. Examination of current topics at intersection of gender and language. Topics include sex differentiation in language cross-culturally; sex bias in lexicon and usage; sex differences in lexicon, syntax, phonology, and nonverbal behavior; development of sex-differentiated language in children; "women's" and "men's" language in various racial/ethnic/class/sexual preference groups; and conversational interaction.

Ms. Henley

**130. Cultural Factors in Interpersonal Communication.** Prerequisite: course 100 or consent of instructor. Study of cultural factors as they affect the quality and processes of interpersonal communication; exercises in participation, analysis, and criticism of interethnic and interracial communications in the small group configuration.

Ms. French

**140. Theory of Persuasive Communication.** Prerequisite: course 100 or consent of instructor. Dynamics of communication designed to influence human conduct; analysis of structure of persuasive discourse; integration of theoretical materials from relevant disciplines of humanities and social sciences.

Mr. Rosenthal

**142. Rhetorical Theory.** Prerequisite: course 100 or consent of instructor. Survey of major classical and neoclassical treatises on rhetoric. Analysis of theories of Plato, Aristotle, Cicero, Quintilian, St. Augustine, Blair, Whately, Campbell, and other leading works in theory of rhetoric.

**M144A-M144B. Conversational Structures I, II.** (Same as Sociology CM124A-CM124B.) Lecture, three hours; discussion, one hour. P/NP or letter grading. **M144A.** Introduction to some structures which are employed in organization of conversational interaction, such as turn-taking organization, organization of repair, and some basic sequence structures with limited expansions. **M144B.** Prerequisite: course M144A. Consideration of some more expanded sequence structures, story structures, topical sequences, and overall structural organization of single conversations.

Mr. Schegloff

**M147. Sociology of Mass Communication.** (Formerly numbered 147.) (Same as Sociology M176.) Prerequisite: course 100 or consent of instructor. Studies in relationship between mass communication and social organization. Topics include history and organization of major media institutions, social forces that shape production of mass media news and entertainment, selected studies in media content, and effects of media on society.

Mr. Clayman

**150. Analysis of Communication Content.** Prerequisite: course 100 or consent of instructor. Study of methodologies for qualitative and quantitative analysis of the content of communications.

Ms. French

**152. Analysis of Communication Effects.** Prerequisite: course 100 or consent of instructor. Survey of experimental and field research on effects of communications. Study of source, message, and environmental factors affecting audience response.

Ms. Greenfield, Mr. Malamuth

**153. The Media and Aggression Against Women.** Lecture, two hours; discussion, two hours. Prerequisite: course 152 or consent of instructor. Study of the growing body of literature on relationship between mass media and aggression against women. Consideration of both role of the media as reflecting cultural values and scripts and its potentially powerful role as a socializing agent of the culture. Analysis of research on role of individual differences among members of a culture as mediators of the impact of the media. Mr. Malamuth

**155. Communication Technology and Public Policy.** Prerequisite: course 10. Introduction to modern communication technology and policy, with special attention to current policy issues, institutions which make policy decisions, and social, economic, and technological trends which create policy problems. Modern communication technologies surveyed include cable television, teletext, viewdata, and satellite, microwave cellular, and subcarrier communication. Mr. Case, Mr. Cole

**156. Human/Computer Communication.** Prerequisite: completion of the seven preparation for the major courses. Limited to communication studies majors. Survey of behavioral, design, and evaluation issues in human/computer communication. Readings from disciplines of psychology, sociology, computer science, communication, and library and information science. Students perform several on-line assignments in learning to use different technologies. Term paper required. Ms. Borgman

**160. Political Communication.** Prerequisites: courses 100 and 101, or consent of instructor. Study of nature and function of communication in the political sphere; analysis of contemporary and historical communications within established political institutions; state papers; deliberative discourses; electoral campaigns. Mr. Iyengar

**M161. Mass Media and Elections.** (Same as Political Science M148.) Prerequisite: communication studies major or consent of instructor. Assessment of manner in which Americans' political beliefs, choices, and actions are influenced by mass media presentations, particularly during election campaigns. Topics include processes of political attitude formation and change, different types of media "effects," and role of the media in the American political process. Mr. Iyengar

**165. Agitational Communication.** Prerequisites: courses 100 and 101, or consent of instructor. Theory of agitation; agitation as a force for change in existing institutions and policies in a democratic society. Intensive study of selected agitational movements and the technique and content of their communications.

**170. Legal Communication.** Prerequisites: courses 100 and 101, or consent of instructor. Study of trial and appellate processes as systems of communication. Analysis of elements of the juridical process as they affect the quality of communication content. Study of rules of evidence, jury behavior, and structure of legal discourse. Mr. Rosenthal

**171. Seminar: Theories of Freedom of Speech and Press.** Prerequisites: course 101, consent of instructor. Exploration of relationship between freedoms of speech and press and values of liberty, self-realization, self-government, truth, dignity, respect, justice, equality, association, and community. Study of the significance of these values examined in connection with issues such as obscenity, defamation, access to media, and control of commercial, corporate, and government speech.

**175. Criticism and the Public Arts.** Prerequisite: course 10 or consent of instructor. Introduction to methods and problems of criticism in the public arts. Study of several types of critical methods: formalistic, analogue, pragmatic, and aesthetic criticism. Topics include definition of art and criticism, aesthetic media, genre and resources of film, television, theater, and public discourse, varieties of critical method, problems of critical judgment.

**177. Libel and Freedom of Expression.** Lecture, two hours; discussion, two hours. Prerequisite: course 101 or consent of instructor. Intensive study of law of defamation and its relationship to the free flow of information in a democracy. Examination of rationale, scope, and effects of libel laws. Topics include application of libel laws to public official, public figure, and private plaintiffs and media and nonmedia defendants; group libel, privileged libel, and libelous fiction. Mr. Rosenthal

**180. Politics of Censorship.** Discussion, two hours; simulation teaching, three hours. Prerequisites: course 101, consent of instructor. Examination of the process and substance of debates over government and private censorship by having students become active participants in a term-long simulated battle over a current issue such as book censorship, pornography, or UNESCO's proposed "New World Information Order." Mr. Cowan (W)

**185. Field Studies in Communication (2 to 8 units).** Discussion, two hours; fieldwork, seven to 14 hours (depending on unit value). Prerequisites: course 10, junior standing, consent of instructor. Fieldwork in communication. Students participate in two-hour seminar sessions and spend seven hours in approved community settings each week for each two units of credit. May be taken for a maximum of eight units. P/NP grading. Ms. Gregory

**187. Ethical and Policy Issues in Institutions of Mass Communication.** Prerequisites: courses 10, 101. Intensive examination of ethical and policy issues arising from interaction of media institutions (print, film, broadcasting, and new technologies) and societal institutions (Congress, federal agencies, courts, the Presidency, schools, churches, political action groups, advertisers, and audiences). Mr. Cole

**189. Multicultural Television and Society.** (Formerly numbered 197C.) Study and evaluation of cross-cultural, social, and psychological characteristics of selected national and international television programs and their implications for social learning in children. Designed to systematically study multicultural attributes related to sociocultural images and portrayals of television programs using various evaluation models and techniques. Mr. Berry

**191H. Research Methods in Communication (Honors).** Lecture, three hours. Prerequisites: course 10, junior standing. Provides a working understanding of research methods in communication studies, particularly related to study of mass media effects, to give students the background necessary to design, implement, and report their own research project. Mr. Iyengar, Mr. Malamuth (F)

**196H. Undergraduate Honors Proseminar.** Prerequisites: senior standing, 3.5 GPA in communication studies major, 3.3 GPA overall. Limited enrollment. Variable topics course involving specialized study of selected aspects of the field of human communication. Mr. Iyengar, Mr. Malamuth

**197A-197Z. Special Topics in Communication Studies.** Lecture, three hours. Prerequisite: completion of preparation for the major courses or consent of instructor. Variable topics courses; consult *Schedule of Classes* for topics to be offered in a specific term.

**197A.** Mass Communication Theory; **197B.** Systems, Institutions, and Policies; **197C.** Media Content/Criticism and History; **197D.** American Studies; **197E.** Language/Interaction Structures; **197F.** Social Systematics; **197G.** Interpersonal Communication Theory; **197J.** Heterogeneous Groups Communication. (F,W,Sp)

**199. Special Studies (2 to 8 units).** To be arranged with faculty member who will direct the study. Prerequisites: senior standing, consent of instructor. Independent studies for seniors who desire intensive or specialized investigation of selected research topics.

**199H. Special Studies for Honors Candidates (2 to 8 units).** To be arranged with faculty member who will direct the study. Prerequisites: senior and honors program standing. Independent studies for honors undergraduates who desire intensive or specialized investigation of selected research topics.

## Comparative Literature (Interdepartmental)

334D Royce Hall, (310) 825-7650, Fax (310) 206-3035

### Professors

Michael J.B. Allen, Ph.D., D.Litt. (*English; Distinguished Teaching Award*)  
Emily Apter, Ph.D. (*French, Comparative Literature*)  
Arnold J. Band, Ph.D. (*Hebrew, Comparative Literature; Distinguished Teaching Award*)  
Calvin B. Bedient, Ph.D. (*English; Luckman Distinguished Teaching Award*)  
A.R. Braunmuller, Ph.D. (*English; Distinguished Teaching Award*)  
Daniel G. Calder, Ph.D. (*English*)  
Peter Haidu, Ph.D. (*French*)  
Michael Heim, Ph.D. (*Czech and Russian Literature*)  
Carroll B. Johnson, Ph.D. (*Spanish*)  
Henry A. Kelly, Ph.D. (*English*)  
Kathleen L. Komar, Ph.D. (*German, Comparative Literature; Distinguished Teaching Award*)  
Leo Ou-fan Lee, Ph.D. (*Chinese*)  
Peter H. Lee, Ph.D. (*Korean*)  
Richard D. Lehan, Ph.D. (*English; Distinguished Teaching Award*)  
Maximilian E. Novak, D.Phil., Ph.D. (*English*)  
Ross P. Shideler, Ph.D. (*Scandinavian, Comparative Literature; Distinguished Teaching Award*), Chair  
Samuel Weber, Ph.D. (*English, Comparative Literature*)  
Stephen Yenser, Ph.D. (*English; Distinguished Teaching Award*)  
Pier-Maria Pasinetti, Ph.D., Emeritus (*Italian, Comparative Literature*)

### Associate Professors

Jean-Claude Carron, Docteur ès Lettres (*French*)  
King-Kok Cheung, Ph.D. (*English*)  
Donald J. Cosentino, Ph.D. (*English*)  
Albert D. Hutter, Ph.D. (*English; Distinguished Teaching Award*)  
Shuhsi Kao, Ph.D. (*French*)  
Katherine C. King, Ph.D. (*Classics, Comparative Literature; Luckman Distinguished Teaching Award*)  
José Monleón, Ph.D. (*Spanish*)  
Vincent P. Pecora, Ph.D. (*English*)  
Lucia Re, Ph.D. (*Italian, Comparative Literature*)

### Assistant Professors

Ali Behdad, Ph.D. (*English, Comparative Literature*)  
Kenneth Reinhard, Ph.D. (*English*)  
C.P. Haun Saussy, Ph.D. (*Chinese, Comparative Literature*)  
Shu-mei Shih, Ph.D. (*Chinese, Comparative Literature*)

## Scope and Objectives

Standing at the forefront of innovative literary analysis and criticism, comparative literature is one of the most exciting fields in the humanities. As a discipline it requires exceptional linguistic ability and high intellectual caliber. UCLA's graduate interdepartmental program offers students the opportunity to work with faculty in any of the University's language and literature departments as well as with the Comparative Literature Program faculty.

Comparative literature at UCLA focuses on those elements which define literature in general, such as genre, period, theme, language, and theory. Courses are designed to provide students with a historical understanding of the concepts of genre and period by studying specific genres and periods or literary movements. Paradigmatic or thematic courses offer another way of examining literature synchronically or diachronically regardless of language boundaries.

Courses in literary criticism and theory inquire into the premises of specific critical approaches, and of criticism itself, in order to provide further insight into the intellectual and moral concerns of literature and the world it reflects. Thus, through the study of these various assumptions and aspects of literature and criticism, students learn not only to cross linguistic boundaries, but to join them — to compare and to contrast, to analyze and, finally, to synthesize the text and the subtext, the structure and the history which define, undermine, and transcend the text and its reader.

## Master of Arts Degree

### Admission

A bachelor's degree in literature, ancient or modern, is a prerequisite for admission to the program. Students not having a literature major in their B.A. program are required to demonstrate the equivalent knowledge and comprehension of one literature before being considered a graduate student in good standing. Applicants are expected to have at least a 3.4 grade-point average in upper division literature courses, take the Graduate Record Examination (GRE), and submit three letters of recommendation to the Comparative Literature Program (334D Royce Hall, UCLA, Los Angeles, CA 90024-1536). Applicants should have literary proficiency in one foreign language and at least elementary knowledge of a second.

### Areas of Study

Your study plan should combine work in the major and minor literatures by focusing on a limited area in which these literatures may be explored. The area may be a literary period (e.g., Romanticism), a genre (e.g., the novel), or a theoretical problem.

The major literature is the area of your primary concentration. You specialize in one historically defined period (e.g., medieval, Renaissance, and baroque, neoclassicism and 18th century, Romanticism to modern), but general knowledge of the major literature is a prerequisite for the specialization.

In the minor literature, you focus on a period comparable to the area of specialization in the major literature, although you may not have as much historical depth and breadth as in the major literature.

## Foreign Language Requirement

Literary proficiency in the major and minor literatures is an essential prerequisite for courses and degrees in comparative literature. You should be able to take graduate classes conducted in the languages of your specialization, speak the major foreign language adequately, and read literary texts in that language with "literary proficiency" (i.e., with sensitivity to stylistic nuances).

Before completing the M.A., you must demonstrate knowledge of two foreign languages. Proficiency in one must be certified by completing two or more upper division and/or graduate literature courses in the appropriate language department. (You must prove more than elementary language competency in order to take these courses.) The second language requirement may be satisfied either by completing two years of language classes, by taking one upper division literature class, or by passing the Graduate School Foreign Language Test (GSFLT) with a score of 600 or better. Translation examinations may be administered by departmental members in languages for which no GSFLT is available.

## Course Requirements

The following 12 courses are the minimum course requirements. Some students will take extra courses to make up deficiencies.

- (1) Four comparative literature courses, including Comparative Literature 200 and one course in literary theory such as 290, 291, 292, or 293; two courses that deal with primary texts in a comparative context (e.g., courses on genre, period, or a special topic that examines primary texts).
- (2) Five courses (three must be graduate, two may be upper division) in your major literature.
- (3) Three courses, either graduate or upper division, in your minor literature. You should study periods, genres, or problems in the minor literature which lend themselves to comparison with similar elements in your major literature.

Of the above required courses, eight units at most may be in the 500 series. Course 596 or 597 may be applied toward the minimum course requirement and the graduate course requirement.

## Comprehensive Examination Plan

The examination for the M.A. is both written and oral, testing both historical knowledge and comprehension of methodology. There are three possible results of the examination: you may receive an M.A. degree and be allowed to progress toward the Ph.D., be granted a terminal M.A., or fail the examination altogether. The program allows a maximum of two attempts to pass the M.A. examinations.

The written examinations test your skill in literary analysis and detailed knowledge of specified works in the major and minor literatures. The examinations are based on reading lists from the works of at least 15 authors in the

major literature (two three-hour examinations) and the works of at least 10 authors in the minor literature (one three-hour examination). Normally, the reading list consists of approximately 24 to 30 works in the major literature and 12 to 15 works in the minor literature. For more details on the reading list, contact the program office.

## Ph.D. Degree

### Admission

For entrance into the Ph.D. program, an M.A. degree in Comparative Literature is normally required. Students with an M.A. degree in one national literature, extensive knowledge of a second, and the ability to read literary texts in a third language may be considered for admission. Applicants should submit three letters of recommendation. Students entering with any degree other than an M.A. in Comparative Literature from UCLA are required to pass a "permission to proceed" examination before being allowed to continue toward the Ph.D. It should be taken within your first year in residence.

### Major Fields or Subdisciplines

The study plan for the Ph.D. should combine work in one major and two minor literatures by focusing on a limited area in which these literatures may be explored. This area may be a literary period or a particular aspect common to several literatures (e.g., a genre like tragedy or the novel, or a phenomenon like neoclassicism or the baroque). It may also be a critical or theoretical problem, involving analyses of styles or modes of interpretation; comparisons of classical and modern genres and themes; questions about the artistic process in different art forms; or problems in literary aesthetics or epistemology. You may substitute, by petition for program approval, a related field such as art history or film for one minor literature.

## Foreign Language Requirement

You must have literary proficiency in at least two foreign languages before taking the qualifying examination. Reading knowledge of a third foreign language is strongly recommended. Two of the three languages offered for the Ph.D. must be from different language groups (e.g., Romance and Germanic, English and Slavic). If you intend to offer three literatures written in foreign languages for your Ph.D. degree, you are expected to have literary proficiency in the three pertinent foreign languages. A classical language is usually necessary for anyone majoring in a period prior to the 19th century. If you present three literature areas for the Ph.D., you must fulfill the language requirements through coursework.

If you select a nonliterary minor, you must still demonstrate the ability to read literature in two foreign languages. You are examined in at least one foreign language as part of your course and examination requirements for the Ph.D. You must also demonstrate literature

reading proficiency in a second foreign language by taking an upper division course in that language. For example, if you select English (major), French (minor), and film (minor) as your three areas of specialization, you are expected to demonstrate literature reading proficiency in another foreign language such as Italian or German. If you have taken a course to fulfill your M.A. language requirements, you may not use the same course to fulfill the second foreign language requirement for the option described above.

### Course Requirements

All students entering with an M.A. must take a minimum of six graduate courses, and often up to 12 courses. Those whose M.A. is not in Comparative Literature at UCLA must take three of the required six courses in comparative literature and one from each of the major and minor literatures/fields. Other relevant or necessary courses are determined in consultation with a graduate adviser. None of the minimum required courses may be in the 500 series. Although only six courses are required, you are strongly advised to take at least two and usually three courses in each of your literatures.

If you have taken your M.A. in Comparative Literature at UCLA, the following courses are required: two comparative literature courses, one with a theoretical orientation; two to three courses in your second minor; two courses in your major literature, preferably in your period of emphasis, plus any additional courses required by the program committee and/or graduate advisers. None of the minimum required courses may be in the 500 series.

### Teaching Experience

Teaching experience is not required but is highly recommended.

### Qualifying Examinations

The examinations are both written and oral and may be taken over a period of two to three terms at the end of the second year after receiving your M.A. degree. The written examinations are based on reading lists for the major and two minor literatures/fields.

For the major literature, you take one three-hour historical examination based on a reading list of 40 items. No more than 20 of the items may be in the approximately 100-year period of emphasis.

For the minor fields, you must take (1) one three-hour written examination in each minor field, based on approved reading lists of 25 to 30 items or (2) one three-hour written examination in the minor field not included in your M.A. examinations and write a paper of 20 to 30 pages on a topic in the minor field originally presented for the M.A., based on approved reading lists. The latter choice must have approval of the program chair and agreement of the examining professor.

For the University Oral Qualifying Examination, you must submit a detailed dissertation prospectus of approximately 20 pages. The two- to three-hour examination covers all written examinations, as well as your dissertation prospectus.

The program allows a maximum of two attempts to pass the Ph.D. examinations.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Dissertation

The doctoral dissertation must demonstrate original critical work in the field. Although a topic comparing literatures is commonly undertaken, comparative literature students may write a dissertation on a single subject in a single field provided that their wide range of knowledge is demonstrated by the quality of the work.

### Graduate Courses

**200. Methodology of Comparative Literature (6 units).** Seminar, four hours. Prerequisite: consent of instructor. Study of methodology of comparative literature and theory of literature.

**202. Classical Tradition: Epic.** (Formerly numbered C207.) Seminar, three hours. Prerequisite: reading knowledge of Greek, Latin, or Italian. Analysis of *Iliad*, *Odyssey*, *Aeneid*, *Gerusalemme Liberata*, and *Paradise Lost* both in relation to their contemporary societies and to literary traditions. Emphasis on how poets build on work of their predecessors. S/U or letter grading. Ms. King

**203. Classical Tradition: Tragedy.** (Formerly numbered C211.) Seminar, three hours. Prerequisite: knowledge of one appropriate foreign language, usually Greek or French. Analysis of selected Greek dramas and their re-creations in Rome, in the Renaissance, and in the modern period. S/U or letter grading. Ms. King

**C204. Satire.** (Formerly numbered C212.) Lecture, three hours. Examination of satire both in texts generally recognized as models of the genre as well as in others, including examples of satirical discourse. Special attention to two important literary problems: role played by authors and narrators in relation to treatment of characters before possible audiences and importance of contextual values in interpretation of satire. Concurrently scheduled with Humanities C104. Graduate students required to prepare papers based on texts read in original languages whenever possible and may meet as a group one additional hour each week. S/U or letter grading.

**C205. Comic Vision.** Lecture, three hours. Prerequisite: reading knowledge of one appropriate foreign language. Literary masterpieces, both dramatic and nondramatic, selected to demonstrate varieties of comic expression. May be concurrently scheduled with Humanities C105. Graduate students required to prepare papers based on texts read in original languages and to meet as a group one additional hour each week. S/U or letter grading. Mr. Band

**206. Archetypal Heroes in Literature.** (Formerly numbered C229.) Seminar, three hours. Prerequisite: reading knowledge of one appropriate foreign language. Survey and analysis of function and appearance of such archetypal heroes as Achilles, Ulysses, Prometheus, Oedipus, and Orpheus in literature from antiquity to the modern period. S/U or letter grading. Ms. King

**207. Allegory and Some Allegories.** (Formerly numbered 210.) Seminar, three hours. Prerequisites: graduate standing, reading knowledge of French, German, Italian, Latin, Greek, or Chinese. Historical perspective on topic of allegory, with readings from texts traditionally held to be examples of the genre. Defining allegory is simple; saying which works count as examples of allegory, and why, is much harder. Authors include Prudentius, Augustine, Dante, Spenser, Donne, Tung Yueh, Hegel, Baudelaire, and Mallarmé. S/U or letter grading. Mr. Saussy

**C222. Renaissance Drama.** (Formerly numbered C245.) Lecture, three hours. Prerequisite: reading knowledge of one appropriate foreign language. Broad introduction to subject matter and types of plays in the Renaissance, with consideration of historical and literary influences on the plays. Readings include works of such dramatists as Tasso, Machiavelli, Lope de Vega, Racine, Jonson, Shakespeare. May be concurrently scheduled with Humanities C122. Graduate students required to prepare papers based on texts read in original languages and to meet as a group one additional hour each week. S/U or letter grading. Mr. Braunmuller

**C240. Dramatic Theory and Criticism in German and English Romanticism.** (Formerly numbered C271.) Seminar, three hours. Prerequisite: reading knowledge of German. Generic conception of drama in critical essays of the Schlegels, Tieck, Jean Paul, Coleridge, De Quincey, and Hazlitt, with emphasis on role of the actor and the idea of dramatic action as discussed by the critics. May be concurrently scheduled with Humanities C140. S/U or letter grading. Mr. Burwick

**C250. The 19th-Century Novel.** (Formerly numbered C275.) Seminar, three hours. Prerequisite: reading knowledge of French or German. Comparative study of the 19th-century novel in England and on the continent. Novels selected so as to allow seminar to concentrate on a particular tradition or critical problem. May be concurrently scheduled with Humanities C150. S/U or letter grading. Mr. Lehan, Ms. Re

**C251. Crisis of Authority.** (Formerly numbered C278.) Seminar, three hours. Prerequisites: graduate standing or consent of instructor, reading knowledge of one appropriate foreign language. Darwin's *Origin of Species* undermines the notion of a traditional fatherly God and reflects a major transition between the 19th and 20th centuries. Threat to, or collapse of, a divinely author(ized) and male-dominated society appears in writers such as G. Eliot, Zola, Ibsen, Strindberg, Conrad, Hardy, Woolf, and Camus. May be concurrently scheduled with Humanities C151. Graduate students required to prepare papers based on texts read in original languages and may meet as a group one additional hour each week. S/U or letter grading. Mr. Shideler

**C252. Symbolist Tradition in Poetry.** (Formerly numbered C280.) Seminar, three hours. Prerequisite: reading knowledge of either French or German. Study of symbolist tradition in 19th- and 20th-century English, French, and German poetry. May be concurrently scheduled with Humanities C152. Graduate students required to prepare papers based on texts read in original languages and may meet as a group one additional hour each week. S/U or letter grading. Mr. Shideler

**C260. Literature and the Visual Arts, 1700 to the Present.** Lecture, three hours. Prerequisite: reading knowledge of one appropriate foreign language. Knowledge of art history valuable but not required. Assuming that literature and the visual arts are in some degree expressions of cultural and philosophical patterns of eras, course studies relationships between primarily English writers from 1700 to the present and movements in painting, architecture, and sculpture. Interdisciplinary investigation of similarities and differences between the plastic and verbal arts in comparative study. May be concurrently scheduled with Humanities C160. Graduate students required to read works in original languages. Mr. Roston

**C261. Fiction and History.** (Formerly numbered C276.) Seminar, three hours. Analysis of use of historical events, situations, and characters in literary works of the Renaissance and/or modern period. Texts and individual assignments range from Renaissance historical narratives (Italian humanists, Machiavelli) to 19th- and 20th-century novels by authors such as Stendhal, Verga, Tomasi di Lampedusa, Carpentier, and Kundera. Use of fictional methods by historians. Emphasis on how aesthetic, ideological, and political factors influence authors' choice and use of historical material. May be concurrently scheduled with Humanities C161. Graduate students required to prepare papers based on texts read in original languages. S/U or letter grading.

Ms. Re, Mr. Saussy

**262. The Psychological Novel.** (Formerly numbered 292.) Seminar, three hours. Prerequisites: major in literature, reading knowledge of French. Comparative study of French and English novels which both precede and follow development of psychoanalysis. Selected readings of Freud, in addition to the required fiction. S/U or letter grading.

Mr. Hutter

**C263. Crisis of Consciousness in Modern Literature.** (Formerly numbered C209.) Seminar, three hours. Prerequisite: reading knowledge of one appropriate foreign language. Study of modern European and American works which are concerned both in subject matter and artistic methods with the growing self-consciousness of human beings and their society, focusing on works of Kafka, Rilke, Woolf, Sartre, and Stevens. May be concurrently scheduled with Humanities C163. Graduate students required to prepare papers based on texts read in original languages and to meet as a group one additional hour each week. S/U or letter grading.

Ms. Komar

**C264. The Modern Continental Novel.** (Formerly numbered C285.) Seminar, three hours. Prerequisite: reading knowledge of at least one appropriate foreign language. Study of the modern novel's development from naturalism toward a mythic or symbolic level. Use of authors such as Gide, Proust, Mann, Joyce, Nabokov, and Grass to focus on development of themes such as primitivism vs. authority, change vs. stability, and the self-conscious narrative. Concurrently scheduled with Humanities C164. Graduate students required to prepare papers based on texts read in original languages and to meet as a group one additional hour each week. S/U or letter grading.

Mr. Lehan

**265. Intertextuality in Literature and Film.** Discussion, three hours. Study of relationships between literature and film from perspective of intertextuality grounded in theorists Mikhail Bakhtin and Jacques Derrida and elaborated by critics Barthes, Chatman, and Kristeva. Focus on processes of inscription, reiteration, transformation, filiation, and dissemination during consideration of representative types of intertextuality. S/U or letter grading.

Mr. Goodwin

**C267. Theory and Texts of the Fantastic.** (Formerly numbered C273.) Seminar, three hours. Prerequisite: reading knowledge of one appropriate foreign language. Attempt to define the fantastic as a theoretical genre separate from the wider genre of fantasy. Critical texts by Todorov and Brooke-Rose. Primary texts by Hoffmann, Nerval, James, Poe, Borges, Casares, Cortazar, Landolfi, and Calvino. May be concurrently scheduled with Humanities C167. Graduate students required to prepare papers based on texts read in original languages and may meet as a group one additional hour each week. S/U or letter grading.

Ms. Re

**C270. Alternate Traditions: In Search of Female Voices in Contemporary Literature.** (Formerly numbered C284.) Seminar, three hours. Prerequisite: reading knowledge of one appropriate foreign language. Investigation of narrative texts by contemporary French, German, English, American, Spanish-American, African, and Asian women writers from a cross-cultural perspective. Common themes, problems, and techniques. May be concurrently scheduled with Humanities C170. Graduate students required to prepare papers based on texts read in original languages whenever possible. S/U or letter grading.

Ms. King, Ms. Komar, Ms. Re

**271. Imaginary Women.** (Formerly numbered 227.) Seminar, three hours. Prerequisite: reading knowledge of one appropriate foreign language. Examination of archetypal female figures in classical/traditional literatures and their reincarnations in modern African American, Anglo-American, Asian American, European, Native American, and Spanish-American literatures. Particular emphasis on position of women in the cultures and ideology of the authors. S/U or letter grading.

Ms. King

**C272. The Postmodern Novel.** (Formerly numbered C286.) Seminar, three hours. Prerequisite: reading knowledge of one appropriate foreign language. Study of the postmodern novel as it developed out of modernism. Postmodernism defined in three different ways — philosophically, scientifically, and economically. Emphasis on relationship of recent novels to theories of structuralism and poststructuralism. Readings include authors such as Borges, Beckett, Nabokov, Pynchon, Fuentes, Grass, Böll, and Calvino. Concurrently scheduled with Humanities C172. Graduate students required to meet as a group one additional hour each week. S/U or letter grading.

Mr. Lehan

**C273. Postmodernism and the Third World.** (Formerly numbered C290.) Seminar, three hours. Prerequisite: reading knowledge of one appropriate foreign language. Exploration of intersection between concepts of postmodernism and Third World culture and politics, including topics such as post-Marxism and revolution; historical thought; gender, ethnicity, imperialism, and their relationship to cultural politics; and recent Latin American literary production. Concurrently scheduled with Humanities C173. S/U or letter grading.

Mr. Behdad

**285. Translation Workshop.** (Formerly numbered 230.) Seminar, three hours. Prerequisites: solid reading knowledge of at least one foreign language, consent of instructor. Open to qualified undergraduates with proper language preparation. Theory and practice of literary translation. Analyses of significant theoretical contributions to the field. Weekly exercises in translation technique with genres, periods, and authors at discretion of participants. S/U or letter grading.

Mr. Heim

**290. Contemporary Theories of Criticism.** (Formerly numbered 201.) Seminar, three hours. Prerequisite: course 200 or equivalent. Advanced course in theory of literature focusing on structuralist, psychoanalytic, and Marxist approaches. S/U or letter grading.

**291. Problems in Theory of Literature.** (Formerly numbered 202.) Seminar, three hours. Prerequisites: course 290 or equivalent, reading knowledge of French or German. Study of specific topics in theory of literature for advanced students in criticism and literary theory. May be repeated for credit. S/U or letter grading.

**292. Problems of the Sign in Literature.** (Formerly numbered 203.) Seminar, three hours. Inquiry into theoretical bases and implications of the sign as metaphysical, logical, and grammatical categories. Many texts central to Western thinking dwell on the sign as a concept-tool in order to focus on the relationship between words and things, language and reality, the linguistic medium in its meaning-producing functions. Excerpts from Plato, Aristotle, Augustine, Locke, Vico, and Hegel lead to a discussion of "sciences" envisioned by Saussure (semiology) and Peirce (semiotics) and propounded by contemporary theorists such as Barthes, Hjelmslev, and Greimas. S/U or letter grading.

Ms. Kao

**293. Psychoanalytic Approaches to Literature.** (Formerly numbered 204.) Seminar, three hours. Prerequisite: course 200 or equivalent criticism course in English. Study of development of modern psychoanalytic approaches to literature, with particular stress on affective theories of criticism. Readings include Freud and early psychoanalytic critics, contemporary psychoanalytic critics of literature, and modern British and American psychoanalytic theorists (Winnicott, Schafer) whose work is applicable to literary theory. S/U or letter grading.

Mr. Hutter, Mr. Reinhard

**C295. Heidegger, Language, and Literature.** (Formerly numbered C288.) Seminar, three hours. Knowledge of German not required. Close reading of essays contained in the collection *Poetry, Language, and Thought*, including "The Origin of the Work of Art," "The Thing," and "Language." Concurrently scheduled with Humanities C195. S/U or letter grading.

Mr. Weber

**C296. Derrida as a Reader of Heidegger.** (Formerly numbered C289.) Seminar, three hours. Retracing of certain of Derrida's attempts to read Heidegger, beginning with the essay, "Restitutions," in *Truth and Painting*. Other writings include *Of Spirit: Heidegger and the Question* and *Geschlecht*. May be concurrently scheduled with Humanities C196. S/U or letter grading.

Mr. Weber

**297. Death and the Limits of Representation.** (Formerly numbered 287.) Seminar, three hours. Prerequisite: reading knowledge of one appropriate foreign language. Examination of fundamental shifts in the relationship that obtains between thinking and death which are closely tied to rethinking of the status and structure of representation. S/U or letter grading.

Mr. Weber

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495. Preparation for Teaching Literature and Composition.** Lecture, three hours. Seminar on problems and methods of presenting literary texts as exemplary materials in the teaching of composition. Deals with theory and classroom practice and involves individual counseling and faculty evaluation of TAs' performance. May not be applied toward M.A. course requirements. S/U grading.

**596. Directed Individual Study or Research (2 to 12 units).** Prerequisite: graduate standing in comparative literature. Necessary for students in comparative literature who need additional individual study and research. May be repeated for credit. S/U grading.

**596X. Directed Individual Study (2 to 4 units).** Preparation for foreign language examination. S/U grading.

**597. Preparation for M.A. and Ph.D. Examinations (2 to 12 units).** Prerequisite: graduate standing. Preparation for M.A. comprehensive examination or Ph.D. qualifying examinations. May be repeated for credit. S/U grading.

**599. Research for Ph.D. Dissertation (2 to 12 units).** Prerequisite: doctoral standing. Research for and preparation of Ph.D. dissertation. May be repeated for credit. S/U grading.



## Computing, Program in

See Mathematics

## Cybernetics (Interdepartmental)

6291 Boelter Hall, (310) 825-7482

### Professors

Jack W. Carlyle, Ph.D. (*Computer Science*)  
Joseph J. DiStefano III, Ph.D. (*Computer Science, Medicine, Chair*)  
Jack L. Feldman, Ph.D. (*Physiological Science*)  
C.R. Gallistel, Ph.D. (*Psychology*)  
John Hanley, M.D., in Residence (*Psychiatry and Biobehavioral Sciences*)  
Donald M. Wiberg, Ph.D. (*Anesthesiology, Electrical Engineering*)

### Associate Professors

Michael G. Dyer, Ph.D. (*Computer Science*)  
Elliot M. Landaw, M.D., Ph.D. (*Biostatistics*)  
Richard K. Vance, Ph.D. (*Biology*)

### Assistant Professor

Josef Skrzypek, Ph.D. (*Computer Science*)

## Scope and Objectives

The major in cybernetics is designed primarily for highly motivated undergraduates interested in interdisciplinary activities in life sciences, behavioral sciences, and engineering and computer sciences. Preparation for the major consists of a broad foundation in basic sciences — chemistry, biology, physics, and mathematics, plus introduction to psychology and computing. The major itself provides an introduction to modeling, information processing, control and system analysis, with emphasis on quantitative ideas and methodologies. Mathematical and other analytical skills are essential in the major.

Cybernetics majors have four options for in-depth studies: life sciences, behavioral sciences, engineering and applied mathematical sciences, or an integration of courses from these areas that form a coherent cybernetics curriculum. The major is appropriate preparation for employment or for graduate studies in any of these areas, with emphasis on interdisciplinary activities. It is also appropriate preparation for professional school studies in medicine, public health, management, dentistry, and engineering.

## Bachelor of Science Degree

### Precybernetics Major

You may apply for the precybernetics major via petition if you are a sophomore and have taken

at least three of the premajor mathematics courses with a 2.7 GPA or better and three other premajor courses. Together, all preparation for the major courses, including mathematics, must be completed with at least a 3.0 GPA and a minimum grade of C in all courses. Transfer students must meet the same academic requirements, based on all courses transferred from another institution which satisfy premajor requirements, and must have completed one 12-unit term of residence in regular session at UCLA.

### Preparation for the Major

**Required:** A minimum of 73 units, including Biology 5, 9; Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL, 132A; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A, 8B, 8C; Program in Computing 10A; Psychology 10 or 11.

### The Major

Admission to the major is by petition only and is based on successful completion of all preparation for the major courses and requirements (2.7 GPA in mathematics, 3.0 GPA overall, and a minimum grade of C in all courses).

The major consists of a methodology core (five and one-half courses), a specialization area (seven courses), and a cybernetics breadth requirement (three courses). Each course in the major must be passed with a grade of C or better.

**Methodology Core** — Four subject areas as follows:

- (1) One overview course: Computer Science 196A.
- (2) Two courses in probability and statistics from one of the following groups: (a) Statistics M152A and 152B, or (b) Mathematics M150A and Statistics 152B, or (c) Electrical Engineering 131A and Statistics 152B.
- (3) Two courses in signals and control systems (one from each group): (a) Electrical Engineering 102 and (b) Electrical Engineering 141 or Mechanical, Aerospace, and Nuclear Engineering 171A.
- (4) One course in modeling and computer simulation: Computer Science M196B.

**Applications/Specialization Areas** — A minimum of seven courses in either life sciences, behavioral sciences, engineering and applied mathematics, or an integration of courses from these areas. A continually updated and approved list of courses in each specialization area is available in the program office and the College Counseling Service.

With few exceptions, courses in the life sciences area are in biology, microbiology, chemistry, and biochemistry, as well as in departments of the School of Medicine. Courses in the behavioral sciences area are in psychology and linguistics. And courses in the engineering and applied mathematics area are in engineering, computer science, and mathematics.

**Cybernetics Breadth Requirement** — One course from each of the applications/specialization areas selected from the current approved list.

### Specialization in Computing

You may select this area as an option in the existing applications/specialization areas. Program in Computing 10B, 10C, 30, and 60 are required, in addition to six courses selected from an approved list. You graduate with a bachelor's degree in cybernetics and a specialization in computing.

### Honors Program

Junior and senior majors who have completed all preparation for the major courses and have an overall grade-point average of 3.0 or better and a 3.5 or better in required major courses may apply for admission to the honors program, in which honors-designated sections of selected courses are required. Students pursuing highest honors must, in addition, complete a senior thesis based on an approved research topic. Those who successfully complete the program (3.0 GPA or better overall, 3.5 or better in major coursework, and a grade of B or better in required honors courses) are awarded a degree with honors. At the discretion of the faculty sponsor and the interdepartmental committee, students demonstrating exceptional ability on the senior research thesis are awarded highest honors.

## Upper Division Course

**195H. Honors Thesis.** Limited to cybernetics honors majors. Honors thesis preparation and submission, under direction of a faculty sponsor on Cybernetics Interdepartmental Committee. P/NP grading.

## Development Studies (Interdepartmental)

11276 Bunche Hall, (310) 825-2927

### Professors

Edward A. Alpers, Ph.D. (*History*)  
Francesca Bray, Ph.D. (*Anthropology*)  
Robert P. Brenner, Ph.D. (*History*)  
Lucie C. Cheng, Ph.D. (*Sociology*)  
Jeffrey A. Frieden, Ph.D. (*Political Science*)  
John Friedmann, Ph.D. (*Urban Planning*)  
Peter B. Hammond, Ph.D. (*Anthropology*)  
John N. Hawkins, Ph.D. (*Education*)  
Philip C. Huang, Ph.D. (*History*)  
Dean T. Jamison, Ph.D. (*Education*)  
James H. Johnson, Ph.D. (*Geography*)  
Nikki Keddie, Ph.D. (*History*)  
Edmond Keller, Ph.D. (*Political Science*)  
Deepak K. Lal, D.Phil. (*Economics*), *Cochair*  
Michael F. Lofchie, Ph.D. (*Political Science*)  
Afaf Marsot, D.Phil. (*History*)  
Antony R. Orme, Ph.D. (*Geography*)  
Merrick Posnansky, Ph.D. (*Anthropology, History*)  
David C. Rapoport, Ph.D. (*Political Science*)  
Damodar R. SarDesai, Ph.D. (*History*)  
Susan C. Scrimshaw, Ph.D. (*Anthropology, Community Health Sciences*)

Richard L. Sklar, Ph.D. (*Political Science; Distinguished Teaching Award*), *Cochair*  
 Michael Storper, Ph.D. (*Urban Planning*)  
 Hartmut Walter, Ph.D. (*Geography*)  
 James W. Wilkie, Ph.D. (*History*)  
 Maurice Zeitlin, Ph.D. (*Sociology*)  
 Charles F. Bennett, Ph.D., *Emeritus (Geography)*  
 E. Bradford Burns, Ph.D., *Emeritus (History; Distinguished Teaching Award)*  
 Robert N. Burr, Ph.D., *Emeritus (History)*  
 Georges Sabagh, Ph.D., *Emeritus (Sociology)*  
 Nathan Shapira, *Dottore in Architettura, Emeritus (Design)*

#### Associate Professors

Robert C. Bailey, Ph.D. (*Anthropology*)  
 Carole H. Browner, Ph.D., in *Residence (Psychiatry and Biobehavioral Sciences)*  
 Barbara Geddes, Ph.D. (*Political Science*)  
 Gerry A. Hale, Ph.D. (*Geography*)  
 Susanna B. Hecht, Ph.D. (*Urban Planning*)  
 Nancy E. Levine, Ph.D. (*Anthropology*)  
 David E. López, Ph.D. (*Sociology*)  
 Michael G. Morony, Ph.D. (*History*)  
 James Tong, Ph.D. (*Political Science*)

#### Assistant Professors

Richard Anderson, Ph.D. (*Political Science*)  
 Judith A. Carney, Ph.D. (*Geography*)  
 José Moya, Ph.D. (*History*)  
 Joshua S.S. Muldavin, Ph.D. (*Geography*)  
 Nadine R. Peacock, Ph.D. (*Anthropology*)  
 Anna Simons, Ph.D. (*Anthropology*)  
 Edward E. Telles, Ph.D. (*Sociology*)

#### Lecturer

Linda Rodríguez, Ph.D. (*History*)

## Scope and Objectives

This undergraduate major aims to provide a liberal education in relation to the critical issues and problems common to developing countries from a global or theme-oriented perspective. It is designed for students who are interested in careers related to international development in academia or in public or private agencies.

## Bachelor of Arts Degree

### Preparation for the Major

You must be a sophomore in good standing to enter the major. No specific courses are required as preparation for the major, but you should have some beginning experience in the social sciences at the college level.

### The Major

**Required:** Fifty-six units of upper division courses (including the four core courses, Development Studies M100A-M100B, and Economics 110 or 111), taken for a letter grade, and the foreign language requirement. (For the quantitative methods requirement, some lower division courses are accepted in place of upper division courses.) Courses applied toward the major may be selected from the list in item 5 below. Substitutions may be made only with consent of the faculty adviser.

The major consists of six parts:

(1) Development Studies M100A-M100B.

(2) Economics 110\* or 111\*.

(3) Four core courses (two should be from the same discipline) from Anthropology 130, 150, Economics 112\*, 191\*, Geography 121, 133, Political Science 115, 167, 168, Sociology 101, 184.

(4) One course in quantitative methods from Anthropology 186A, 186B, Biostatistics 100A, Economics 40, Geography 171, Political Science 6, Sociology 18, 104, 112, 113, Statistics 50.

(5) Twenty-four units of elective courses, including at least 16 units to be divided equally between two of the world's developing areas (e.g., Africa, Latin America, the Near East, South and Southeast Asia, East Asia), selected from Anthropology 151\*, 152\*, 153, M154\*, 161\*, 165\*, 167, 171, 173Q, 174P, 175P, 175R, 175T, 177, 186A, 186B, Architecture and Urban Planning 232A, 232B, 235A\*, 235B\*, 236A, 246, 266, 267A\*, 267B\*, 269, Community Health Sciences 132\*, Economics 103A through 103Z\*, 120\*, 130\*, 150\*, 151\*, 171\*, 180\*, 192\*, Education M108\*, C203\*, 204B through 204D, 204F, 228\*, 234, 238, 252B\*, 253B, 253C, Geography 117\*, 119\*, 122\*, 124\*, M128\*, 142, 148\*, 151\*, 181\*, 182A\*, 182B\*, 186\*, 187\*, 188\*, 189\*, History 106A, 106B, 106C, 107A, 107B, 109A, 109B, 110A, 110B, 111A, 111B, 112A, 112B, 112C, 165A, 165C, 166, 167A through 167D, 168, 169\*, 170A, 171, 173, 174, 175A through 175Z\*, 176A, 176B, 176C, 177, 178A, 178B, 182A\*, 182B\*, 183A\*, 183B\*, 184\*, 188A, 188B, 188C, 190A, 190B, 197, Latin American Studies 197, 199\*, Political Science 124\*, 130, 159, 162, 163A, 163B, 164, 165, 166A, 166B, 166C, 167, 168\*, C197A through C197F\*, Sociology 105\*, 116, 156, 157, 160, 186, 187\*, 188. Consult the program counselor regarding other possible electives that may be applied toward the major.

(6) Twenty-four quarter units in one modern foreign language or the equivalent in transfer units. You may also take a proficiency examination administered and evaluated by members of the program faculty (or by outside faculty for languages not familiar to program faculty).

### Honors Program

Development studies majors who have completed Development Studies M100A-M100B and who have a 3.5 grade-point average in all courses offered for the major are eligible to formally apply for the honors program. In addition to completing all courses required for the major, you must take courses 195A-195B-195C, in which you research, write, and present an honors thesis. To receive honors at graduation, you must have at least a 3.5 GPA in courses applied toward the major (including 195A-195B-195C) and an overall GPA of 3.0.

\*Courses so marked have prerequisites.

Highest honors are awarded to students who complete the major (including courses 195A-195B-195C) with a 3.75 GPA and who produce an exceptional thesis.

## Upper Division Courses

**M100A-M100B. Introduction to Development Studies.** Seminar, three hours. Two-term seminar for undergraduates designed to examine concepts and issues arising from economic, social, and political change in the Third World. **M100A.** Economic Development and Culture Change. (Same as Anthropology M166.) Prerequisites: Anthropology 9 or consent of instructor, some beginning experience in social sciences at college level. **M100B.** Political Economy of Development. (Same as Political Science M197G.) Prerequisite: some beginning experience in social sciences at college level.

Mr. Burr, Mr. Zeitlin (W,Sp)

**195A-195B-195C. Directed Studies for Honors.** Prerequisites: courses M100A-M100B, 3.5 GPA in courses offered for the major, formal application to honors program, consent of instructor. **195A.** Research, discussion, and planning of honors thesis. **195B-195C.** Research, preliminary drafting, and final writing of honors thesis. In Progress grading for course 195B (credit to be given only on completion of course 195C).

## Diversified Liberal Arts (Interdepartmental)

A316 Murphy Hall, (310) 825-1965

### Undergraduate Certificate Program

The Diversified Liberal Arts Program (DLAP) is not a major, but a special certificate program through which you may waive the Multisubject Assessment for Teachers (MSAT) in California. The MSAT examination must be passed (or the DLAP completed) before students in elementary school teaching credential programs may begin their student teaching. To earn an elementary school teaching credential, you must complete an accredited program offered through a graduate school of education.

To earn the certificate in diversified liberal arts, you must complete a major in the College of Letters and Science. You must also complete DLAP requirements in four areas: (1) language and literature, (2) mathematics and science, (3) history and social science, (4) arts and culture.

Requirements for one of these areas are normally satisfied by courses taken for your major; in addition, you must complete a pattern of courses in specified areas.

You must petition for admission to the program and are advised to do so as soon as possible. Transfer students may petition to have suitable

courses completed at other institutions applied toward the course requirements of this program. The college certifies completion of the program.

If you do not complete the program prior to graduation, you must petition out of the program to be eligible to graduate.

For further information about the program and a complete list of courses that apply, contact a counselor in the College of Letters and Science, A316 Murphy Hall (310-206-6681). For information regarding the Teacher Credential Program in the Graduate School of Education, see a counselor in 1605 Maxxam Building (122 Moore Hall in early 1994, 310-825-8328).

## Earth and Space Sciences

3806 Geology, (310) 825-3880

### Professors

Orson L. Anderson, Ph.D. (*Geophysics*)  
 Peter Bird, Ph.D. (*Geophysics, Geology*)  
 Friedrich H. Busse, Ph.D. (*Geophysical Fluid Dynamics*)  
 John M. Christie, Ph.D. (*Geology*)  
 Paul J. Coleman, Jr., Ph.D. (*Geophysics, Space Physics*)  
 Paul M. Davis, Ph.D. (*Geophysics*)  
 Wayne A. Dollase, Ph.D. (*Geology*)  
 T. Mark Harrison, Ph.D. (*Geochemistry*)  
 Raymond V. Ingersoll, Ph.D. (*Geology*)  
 David D. Jackson, Ph.D. (*Geophysics*)  
 Margaret G. Kivelson, Ph.D. (*Space Physics*)  
 Robert L. McPherron, Ph.D. (*Space Physics, Geophysics*)  
 William I. Newman, Ph.D. (*Planetary Physics*)  
 Bruce N. Runnegar, Ph.D. (*Paleontology*)  
 Christopher T. Russell, Ph.D. (*Space Physics*)  
 J. William Schopf, Ph.D. (*Paleobiology; Distinguished Teaching Award*)  
 Gerald Schubert, Ph.D. (*Geophysics, Planetary Physics*)  
 Ronald L. Shreve, Ph.D. (*Geology, Geophysics*)  
 John T. Wasson, Ph.D. (*Geochemistry, Chemistry*)

### Professors Emeriti

Donald Carlisle, Ph.D.  
 Clarence A. Hall, Jr., Ph.D.  
 Robert E. Holzer, Ph.D.  
 Isaac R. Kaplan, Ph.D.  
 William M. Kaula, M.S.  
 Helen Tappan Loeblich, Ph.D.  
 Arthur Montana, Ph.D.  
 Clemens A. Nelson, Ph.D.  
 Gerhard Oertel, Dr. rer. nat.  
 John L. Rosenfeld, Ph.D.

### Associate Professors

David A. Paige, Ph.D. (*Planetary Science*)  
 Walter E. Reed, Ph.D. (*Geology*)  
 An Yin, Ph.D. (*Geology*)

### Assistant Professors

Jon P. Davidson, Ph.D. (*Geology, Geochemistry*)  
 Craig E. Manning, Ph.D. (*Geochemistry, Geology*)  
 Charles R. Marshall, Ph.D. (*Paleontology*)  
 Mary R. Reid, Ph.D. (*Geology, Geochemistry*)

### Lecturers

Donald Hallinger, M.S. (*Geology*)  
 Robert E. Jones, B.S. (*Geology*)

### Adjunct Professors

Paul M. Merfield, Ph.D. (*Environmental Geology*)  
 Floyd F. Sabins, Jr., Ph.D. (*Geology*)

### Adjunct Associate Professor

Frank Kyte, Ph.D. (*Geochemistry*)

## Scope and Objectives

The disciplines of geology, geochemistry, geophysics, paleobiology, and space physics are concerned with the structure and evolution of the solar system, Earth, and life: essentially, the physical environment and its interaction with biota. These studies entail the application of fundamental physics and chemistry to a broad subject area stretching from astronomy at one extreme to biology at the other. Areas which are emphasized at UCLA include isotope and trace element analyses, petrology and mineralogy, sedimentology, paleobiology and organic geochemistry, structural geology and tectonophysics, seismology, the Earth's interior, planetary physics, and space plasmas.

The variety of techniques applied lead to several specializations within the five main disciplines. Students completing their studies with a B.S. or M.S. degree usually are employed by industry. Many are employed in environment-related activities; others are involved in mineral or oil exploration or in construction. Students attaining the Ph.D. degree are usually employed by universities or governmental and industrial research groups.

The Bachelor of Arts program in Earth Sciences is intended to provide a broad background in Earth sciences that is especially appropriate for students intending to become K through 12 teachers in Earth, physical, or life sciences. It may also be of interest to students who plan careers in environmental sciences, law, government, business, journalism, public health, medicine, or dentistry. Those who intend to become professional geologists, geochemists, or geophysicists and/or to continue into graduate studies in Earth or space sciences are urged to pursue one of the B.S. degrees.

## Bachelor of Science in Geology

### Preparation for the Major

*Required:* Earth and Space Sciences 1 or 1H, 2, 51A, 51B, 61; Biology 2; Chemistry and Biochemistry 11A, 11B/11BL; Mathematics 31A, 31B, 32A; Physics 8A/8AL, 8B/8BL, and 8C/8CL or 6B; Program in Computing 3 (recommended) or 10A or more advanced placement by examination. All courses must be passed with a minimum grade of C-.

## The Major

*Required:* Earth and Space Sciences 103A, 103B, 103C, 111, 112, 116, 121A-121B, 135, and three additional courses from 119, 129, C130, 131, 133, 134, 136C, 137, 139, 141, 150, 152.

Students with an interest in nonrenewable natural resources are advised to take courses 136C, 137, 139, 141, and/or 150. Those interested in geochemistry are advised to take Earth and Space Sciences 103C, 119, 121A-121B, C130, 131, C132, and/or Chemistry and Biochemistry 110A, 110B, 114, 132A, 132B, 153A, 184.

## Bachelor of Science in Geology — Engineering Geology

### Preparation for the Major

*Required:* Earth and Space Sciences 1 or 1H, 51A, 51B, 61; Chemistry and Biochemistry 11A, 11B/11BL; Mathematics 31A, 31B, 32A, 33A; Physics 8A/8AL, 8B/8BL, 8C/8CL; Program in Computing 3 (recommended) or 10A or more advanced placement by examination. *Recommended:* Mathematics 32B. All courses must be passed with a minimum grade of C-.

## The Major

*Required:* Earth and Space Sciences 103A, 103B, 111, 112, 121A-121B, 135, 139; Civil Engineering 108, 120, 121, 128L, 150; one course from Earth and Space Sciences 129, C132, 134, 136C, 137, 141, 150, Geography 100, Civil Engineering 151, 155.

## Bachelor of Science in Geology — Paleobiology

### Preparation for the Major

*Required:* Earth and Space Sciences 1 or 1H, 2, 51A, 51B, 61; Biology 5, 5L, and 6 or 9 or 108; Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL. All courses must be passed with a minimum grade of C-.

## The Major

*Required:* Earth and Space Sciences 103B, 111, 112, 116; Chemistry and Biochemistry 132A, 132B/132BL, 153A, 153L; six courses from Chemistry and Biochemistry 153B, 154, Biostatistics 110A, 110B, Biology 101A, 101B, 102, 105, 110, 111, 117, 120, 122, 123, 147, 148, Earth and Space Sciences 119, 121A-121B, 133, 141.

## Bachelor of Science in Geophysics — Applied Geophysics

### Preparation for the Major

*Required:* Earth and Space Sciences 1 or 1H, 51A, 51B, 61; Chemistry and Biochemistry

11A; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A/8AL, 8B/8BL, 8C/8CL, 8D/8DL; Program in Computing 3 (recommended) or 10A or more advanced placement by examination. All courses must be passed with a minimum grade of C-.

### The Major

*Required:* Earth and Space Sciences 111, 112, 136A, 136B, 136C, 152; Physics 105A, 105B, 110A, 110B, 114; two courses from Earth and Space Sciences 103A, 103B, 131, 134, 137, 139, 153, 154, 155, 205, 265, Mathematics 140A, 140B, 140C, Physics 112, 115A, 116, 131, 132, Statistics M152A, 152B, or other courses with consent of adviser.

## Bachelor of Science in Geophysics — Geophysics and Space Physics

### Preparation for the Major

*Required:* Earth and Space Sciences 1 or 1H, 9; Chemistry and Biochemistry 11A, 11B/11BL, 11C; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A/8AL, 8B/8BL, 8C/8CL, 8D/8DL; Program in Computing 3 (recommended) or 10A or more advanced placement by examination. All courses must be passed with a minimum grade of C-.

### The Major

*Required:* Earth and Space Sciences 134, M140, 152, 153, 154, 155; Physics 105A, 105B, 110A, 110B, 112; Physics 131 or Mathematics 145; two upper division courses from the physical sciences, engineering, or mathematics (must be approved by the undergraduate adviser).

Students planning to do graduate work in specialized careers in Earth sciences should, when possible, take appropriate courses in departments outside the major in addition to those already specified. Suggested graduate programs for various fields of emphasis are available in the Student Affairs Office, 3683 Geology, and provide guidelines in selecting upper division courses.

Qualified undergraduate students may, with consent of their advisers and the instructor, take Earth and Space Sciences graduate courses numbered from 200A through 249.

## Bachelor of Arts in Earth Sciences

### Preparation for the Major

*Required:* Earth and Space Sciences 1 or 1H, 2, 9, 15, 51A, 51B, 61; Biology 2 or 5; Chemistry and Biochemistry 11A, 11B/11BL; Mathematics 3A, 3B, and 3C, or 31A and 31B; Physics 6A, 6B, and 6C, or 8A/8AL and 8B/8BL. All courses must be passed with a minimum grade of C-.

### The Major

*Required:* Earth and Space Sciences 103A, 103B, 111, 112, 116; five additional upper division courses from Earth and Space Sciences other than 100 or 120, English 131G, Geography 100/100A, 101/101A, 104, 105/105A, 106/106A, 107, 113, or other upper division physical sciences, life sciences, or engineering courses by petition.

## Honors in Geology or Geophysics

The honors program in geology or geophysics is intended to provide exceptional students an opportunity for advanced research and study under the tutorial guidance of a member of the faculty. Requirements for admission to candidacy are the same as those required for admission to the Honors Programs of the College of Letters and Science. Qualified students wishing to enter the program must submit a completed application form to the departmental honors committee near the end of their junior year. Honors in geology or geophysics are awarded at graduation to those students who have a cumulative GPA of 3.5, who have completed at least 90 graded units at the University of California, and who have completed a minimum of two terms (eight units) of Earth and Space Sciences 199H leading to the preparation of a satisfactory honors thesis. Students demonstrating exceptional ability are awarded highest honors.

## Graduate Study

### Admission

Application may be made for admission to any term. Graduate Record Examination (GRE) scores are required; the examination should be taken at least six weeks before the deadline. Also required are three letters of recommendation which should be sent to the Graduate Adviser, Department of Earth and Space Sciences, 3683 Geology, UCLA, Los Angeles, CA 90024-1567. Application forms and a brochure giving information about the department may be obtained from the graduate adviser. Students who wish to apply for fellowships or teaching assistantships should be aware that these are allocated in February for the following academic year; completed applications should be received by January.

### Major Fields and Subdisciplines

The Department of Earth and Space Sciences offers programs leading to the M.S. and Ph.D. degrees in Geochemistry, in Geology, and in Geophysics and Space Physics. The program in geochemistry offers study in crystal chemistry, experimental petrology, isotopic studies of stable and radioactive elements, meteorite research, planetology, and lunar geochemistry. The program in geology offers study in geomorphology, glaciology, mineralogy, paleobiology, paleontology, petrology, sedimentology,

stratigraphy, structural geology, tectonophysics, and other fields. The program in geophysics and space physics offers study in applied geophysics, the Earth's interior (seismology, gravity, thermal regime, geomagnetism, tectonics), geophysical fluid dynamics (turbulence, rotating systems, stability, hydromagnetism), planetology (orbital dynamics, planetary interiors, surfaces and atmospheres, solar-system origin), and space physics (magnetosphere, radiation belts, solar wind, magnetic fields, cosmic rays). Other comparable areas of study are also possible.

### Foreign Language Requirement

Advising committees may require one or more foreign language in special individual cases. The committees determine how the requirement is to be fulfilled.

## Master of Science in Geochemistry

### Admission

A bachelor's degree in chemistry, geology, physics, or a related field is required. Applicants must have outstanding records in the basic sciences, physics, chemistry, and mathematics. The Graduate Record Examination (GRE) Subject Test may be in any appropriate field of science.

### Course Requirements

A minimum of nine courses is required for the degree, at least six of which must be graduate-level courses. Each course of study is worked out individually between you and the advising committee. You are expected to attain, either through prior training or through prescribed coursework, a common mastery of the subject matter of Earth and Space Sciences 51A, 51B, 130, 131, 234B, Chemistry and Biochemistry 110A, and 110B, as well as more advanced courses in particular fields, and some familiarity with the methods of field geology. You must also take one of the following each term: course 235A, 235B, 235C, 295A, 295B, or 295C.

Sixteen units of 500-series courses (596, 597, 598) may be applied toward the total course requirement; 12 units may be applied toward the minimum graduate course requirement.

### Thesis Plan

The thesis must be approved by the research director (usually the chair of your advising committee), as well as by the other members of the advising committee. No examination is required of students who write a thesis.

### Comprehensive Examination Plan

If you elect this plan, the advising committee prepares and administers the final examination (normally oral). In most cases, a failed final examination can be repeated once.

## Master of Science in Geology

### Admission

A bachelor's degree in geology, biology, chemistry, physics, or other science is required. Applicants must have outstanding records in the relevant basic sciences and mathematics.

### Course Requirements

Each course of study is worked out individually between you and the advising committee. It may include appropriate courses offered by other departments. Unless you have already passed Earth and Space Sciences 61 and 111, you are required to take either 195G or 61 and 111G during your first year in residence. Depending on your performance in course 195G, you may subsequently be required to take either 111G or 61 and 111G. You must also take one of the following each term: course 235A, 235B, 235C, 295A, 295B, or 295C.

Courses applied toward the 36-unit minimum requirement must be from the 100, 200, or 500 series in the physical or life sciences. At least 24 units must be graduate-level courses, of which at least four units must be a geology seminar (courses 251 through 260). Except for courses 597 and 598, those graded on an S/U basis may not be applied toward the requirements. The advising committees may require additional courses in light of individual educational objectives and backgrounds.

Eight units of 500-series courses (596, 597, 598) may be applied toward the total course requirement; four units may be applied toward the minimum graduate course requirement.

### Thesis Plan

This plan is normally required for students not continuing to the doctorate. The thesis subject may be selected at once and the research undertaken concurrently with coursework; in any event, it should normally be selected within your first year in residence. The completed thesis must be approved by the thesis committee. If it is not, the committee may recommend either termination of graduate study or further coursework or research or both, leading to a revised thesis. Revision and resubmission is not normally permitted more than once.

### Comprehensive Examination Plan

This plan is recommended for those continuing to the Ph.D. The examination consists of a six-hour written part covering your major field of study and a subsequent oral part which may be more general in scope. If the examination is failed, the advising committee may recommend either termination of graduate study or further coursework followed by another examination. Reexamination is not normally permitted more than once.

## Master of Science in Geophysics and Space Physics

### Admission

A bachelor's degree in a physical science, engineering, mathematics, or other field is required. Undergraduate work must include junior- or senior-level courses in mathematical methods, dynamics, electromagnetism, and thermodynamics. Recent Graduate Record Examination (GRE) Aptitude Test scores are required; Subject Test scores are desirable, preferably in physics, although mathematics or geology scores are also acceptable.

Qualified students may proceed directly toward the Ph.D. degree, although most obtain the M.S. degree in the process.

### Course Requirements

Courses applied toward the 36-unit minimum requirement must include Earth and Space Sciences 200A, 200B, and 200C and at least 12 additional units of 200-series (graduate) courses. At least half of these must fall within a single field of concentration (applied geophysics, Earth's interior, geophysical fluid dynamics, planetology, or space physics) selected in consultation with your faculty adviser, and the remainder must contribute to your general competence in geophysics and space physics. Courses 200A, 200B, and 200C must be passed with a grade-point average of 3.2 or better unless you are following the thesis plan. Courses graded on an S/U basis may not be applied toward the minimum requirement.

### Thesis Plan

The completed thesis must be approved by your faculty adviser (usually the chair of your advising committee), as well as by the other members of that committee. Eight units of 500-series courses (596, 598) may be applied toward the total course requirement.

### Comprehensive Examination Plan

You may select either (1) a written six-hour examination in question/answer format or (2) an examination in written proposal/oral format. Contact the department for details of each format. Courses in the 500 series may not be applied toward the 36-unit minimum requirement.

### Specialization in Applied Geophysics

The objective of this program is to provide advanced technical training to students who plan to do detailed analysis of geophysical data in industry, mainly petroleum exploration. Emphasis is on theory, computation, data analysis, and inversion. Fieldwork and original measurements are strongly supported, but UCLA has no facilities for gathering or routine processing of reflection seismic data. Undergraduate preparation for admission is equivalent to a B.S. in Geophys-

ics (applied geophysics specialty), including a common mastery of the subject matter of Earth and Space Sciences 61, 111, 112, 136A, 136B, 136C, 152, Physics 105A, 105B, 110A, 110B, and 114. Exceptions may be allowed, but in particular, deficiency in geophysical fieldwork must be made up.

**Course Requirements** — Courses applied toward the 36-unit minimum requirement must include Earth and Space Sciences 200A and 202, plus at least two courses from 203, 204, 205, 222. Eight additional units of graduate-level courses are required; courses 200B, 208, M224A, M224B are recommended. Eight units of 500-series courses (596, 598) may be applied toward the graduate course requirement. Except for courses 596 and 598, those graded on an S/U basis may not be applied toward the minimum requirement.

**Thesis Plan** — A thesis is required for this specialization. A qualifying examination on the suitability of the proposed thesis should be taken by your fourth term in residence. You are also required to take a final examination on the adequacy of your completed thesis.

## Ph.D. in Geochemistry

### Admission

Admission requirements are the same as those for the M.S. in Geochemistry.

### Course Requirements

Each course of study is worked out individually in consultation with your advising committee. You are expected to complete at least the minimum number of courses which are required for the M.S. in Geochemistry and to attain, either through prior training or through prescribed coursework, a common mastery of the subject matter of Earth and Space Sciences 51A, 51B, 130, 131, 234B, Chemistry and Biochemistry 110A, and 110B, as well as more advanced courses in particular fields, and some familiarity with the methods of field geology. You must also take one of the following each term: course 235A, 235B, 235C, 295A, 295B, or 295C.

### Qualifying Examinations

The departmental written qualifying examination must be taken before the end of your first year of the doctoral program if you have a master's degree; otherwise, it must be taken before the end of your second year of enrollment. It may be given in either a question/answer format or in a proposal format, at your discretion. Contact the department for details of each format. In case of failure, an examination of either format may be repeated at the discretion of the examining committee.

After passing the written qualifying examination, you must nominate your doctoral committee and arrange a time for the University Oral Qualifying Examination. This examination determines the suitability of the selected problem

for the dissertation and your ability to research the problem but is not limited to these topics. Repetition of a failed examination is at the option of the doctoral committee.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Final Oral Examination

The final oral examination is normally required.

## Ph.D. in Geology

### Admission

Admission requirements are the same as those for the M.S. in Geology.

### Course Requirements

Each course of study is worked out individually in consultation with your advising committee. It may include appropriate courses offered by other departments. Unless you have already passed Earth and Space Sciences 61 and 111, you are required to take either 195G or 61 and 111G during your first year in residence. Depending on your performance in course 195G, you may subsequently be required to take either 111G or 61 and 111G. You must also take one of the following each term: course 235A, 235B, 235C, 295A, 295B, or 295C. You are expected to complete at least the minimum number of courses which are required for the M.S. in Geology.

### Qualifying Examinations

The departmental written qualifying examination must be taken before the end of your first year of the doctoral program if you have a master's degree; otherwise, it must be taken before the end of your second year of enrollment. It is given in either a question/answer format or in a proposal/proposition format, at your discretion. Contact the department for details of each format.

After passing the written qualifying examination, you must nominate your doctoral committee and arrange a time for the University Oral Qualifying Examination. This examination determines the suitability of the selected problem for the dissertation and your ability to research the problem but is not limited to these topics. Repetition of a failed examination is at the option of the doctoral committee.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Final Oral Examination

The final oral examination is normally required.

## Ph.D. in Geophysics and Space Physics

### Admission

Admission requirements are the same as those for the M.S. in Geophysics and Space Physics.

### Course Requirements

Six courses are required, three in fundamental physics and three in the major geophysics disciplines. You must attain a grade-point average of 3.3 or better (on a 4.0 scale) in the six courses. Contact the department for details.

### Qualifying Examinations

The departmental written qualifying examination is given in either a question/answer format or in a written research proposal/oral format, at your discretion. Contact the department for details of each format.

After passing the written qualifying examination, you must nominate your doctoral committee and arrange a time for the University Oral Qualifying Examination. This examination determines the suitability of the selected problem for the dissertation and your ability to research the problem but is not limited to these topics. Repetition of a failed examination is at the option of the doctoral committee. If you do not pass this examination within four years after entering the program, you are subject to dismissal.

### Final Oral Examination

The examination is required.

## Lower Division Courses

**1. Introduction to Earth Science.** Lecture, three hours; laboratory, two hours. Not open to students with credit for or currently enrolled in course 1H or 100. Elements of Earth science; study of Earth materials; nature and interpretation of geologic evidence; study of geologic processes; historical aspects of geology. (F,W,Sp)

**1H. Fundamentals of Earth Science.** Lecture, three hours; laboratory, two hours; two field days. Not open to students with credit for or currently enrolled in course 1 or 100. Particularly recommended for future physical sciences majors with strong high school or some lower division preparation. Introduction to Earth materials, physical geology, and tectonics, with examples of geophysical and geochemical methods. Mr. Shreve (Sp)

**2. Earth History.** Lecture, three hours; laboratory, three hours; fieldwork. Prerequisite: course 1 or 1H. Methods of historical science; consideration of special problems related to physical and biological evolution of Earth from earliest time to the present. Mr. Ingersoll (W)

**5. Earth Science and Society: Geological Ecological Interactions.** Lecture, three hours; discussion, two hours; field trips. Geologic aspects of major environmental problems, with emphasis on lithosphere/biosphere interactions. Problems of exploration and exploitation of fossil fuel resources. Comparison of society-produced materials and natural cycles. Mr. Manning (W)

**8. Earthquakes.** Lecture, three hours; discussion, one hour. Causes and effects of earthquakes, with special emphasis on problems of living with earthquakes in Southern California. Topics include relationship between earthquakes and local and regional geology, types of earthquakes, past and future earthquakes in California, earthquake engineering, disaster preparedness, and prospects for predicting or controlling earthquakes. (F,W,Sp)

**9. Origin and Evolution of Solar System.** Lecture, three hours; discussion, one hour. Properties of sun, planets, asteroids, and comets. Astronomical observations relevant to understanding the solar system and its origin. Dynamical problems, including examination of fallacious hypotheses. Meteoritic evidence regarding earliest history of the solar system. Chemical models of solar nebula. Space exploration and its planning. (F,W,Sp)

**15. Introduction to Oceanography.** Lecture, three hours; discussion, one hour. Not open for credit to students with credit for Biology 25. Processes responsible for chemical composition of ocean and current circulation patterns. Seafloor spreading and morphology of ocean floor. Biological productivity, marine ecology, and minerals forming in the ocean. (Sp)

**16. Principles of Paleontology.** Lecture, three hours; laboratory, two hours; one optional field trip. Designed for nonmajors. Introduction to nature, occurrence, and use of fossils; history of biosphere as revealed through the fossil record. Mr. Schopf (F)

**17. Dinosaurs and Their Relatives.** Lecture, three hours; laboratory, two hours; one optional field trip. Designed for nonmajors. Exploration of biology, evolution, and extinction of dinosaurs and close relatives, in context of history of biosphere. Information from paleontology, biology, and geology. Mr. Marshall (Sp)

**20. Natural History of Southern California.** Lecture, one hour; laboratory, three hours; four field weekends. Identification, distribution, diversity of plants, animals, and communities; environmental factors influencing distribution in alpine to lower desert life zones. Identification, interpretation, and physical history of rocks, landforms, and structural geologic features within the physiographic regions of Southern California. Emphasis on field-based learning related to integrated aspects of natural history. P/NP or letter grading. Mr. Hall (Sp)

**51A. Mineralogy-Lithology.** Lecture, three hours; laboratory, six hours. Prerequisite: course 1 or 1H or consent of instructor. Recommended: completion of chemistry requirement. Mineralogic crystal chemistry; relation of physical properties to structure. Structural classification and petrogenesis of major minerals and rocks. Laboratory study of crystallography and identification of minerals and igneous, sedimentary, and metamorphic rocks in hand sample. Mr. Dollase (F)

**51B. Optical Mineralogy-Petrography.** Lecture, three hours; laboratory, six hours. Prerequisites: course 51A and one introductory high school or college physics course, or consent of instructor. Principles of optical crystallography. Utilization of optical properties to identify nonopaque minerals in immersion media and in thin section. Study of common igneous, sedimentary, and metamorphic rocks in thin section. Mr. Dollase (W)

**61. Elements of Field Geology.** Lecture, two hours; laboratory, three hours; fieldwork, one day per week. Prerequisites: courses 1 or 1H, and 2, or consent of instructor. Majors must have completed or be concurrently enrolled in course 51B. Techniques of geologic mapping; preparation of geologic reports; methods of mapping faults and folds, sedimentary, igneous, and metamorphic terrains, and Quaternary deposits; introduction to field methods in engineering and environmental geology, petroleum geology, and mining geology and mineral exploration; interpretation of geologic maps; field exercises in pace-and-compass topographic and geologic mapping. Mr. Yin (Sp)

## Upper Division Courses

**100. Principles of Earth Science.** Lecture, three hours. Designed for nonmajors. Not open to students with credit for course 1 or 1H. Fundamentals of physical geology and Earth history; major problems of geology, such as continental drift and development of large-scale features of Earth; physical and biological evolution. Mr. Shreve (W)

**103A. Igneous Petrology.** Lecture, two to three hours; laboratory, six hours; field trips. Prerequisites: courses 51A, 51B, Chemistry 11B, Mathematics 31B, Physics 8B. Recommended: Mathematics 32A. Mineralogy, chemical composition, and field occurrence of igneous rocks with reference to their origin by melting in Earth. Introduction to thermodynamics as applied to petrology. Formation of magma, its movement, eruption, crystallization, and chemical evolution. Petrologic structure of the crust and mantle and its relation to seismology. Overview of petrological and chemical evolution of Earth, moon, and other planets from their origin to the present. Mr. Davidson (Sp)

**103B. Sedimentary Petrology.** Lecture, two to three hours; laboratory, six hours; field trips. Prerequisite: course 103A. Recommended: course 61. Study of sedimentary rocks based on characteristics of sedimentary particles and dynamics of depositional processes. Lectures focus on development of depositional facies models, and laboratories emphasize recognition of sedimentary deposits from each major depositional facies. Mr. Reed (F)

**103C. Metamorphic Petrology.** Lecture, two to three hours; laboratory, six hours; field trips. Prerequisite: course 103B. Interpretation of metamorphic rocks based on field occurrence, mineralogical composition, texture, and application of physical and chemical principles. Mr. Manning (Sp)

**111. Stratigraphic and Field Geology (6 units).** Lecture, two hours; laboratory, three hours; fieldwork, one day per week. Prerequisite: course 61 or consent of instructor. Principles of stratigraphy; geologic mapping of a selected area; preparation of a geologic report. Mr. Hall (W)

**111G. Field Geology (2 to 4 units).** Prerequisite: graduate standing or consent of instructor. Geologic mapping, principles of stratigraphy, structural geology, and map interpretation. Mr. Hall (W)

**112. Structural Geology.** Lecture, three hours; laboratory, six hours. Prerequisite: course 1 or consent of instructor. Recommended: course 51B. Planar and linear structures at different scales in sedimentary, metamorphic, and igneous rocks. Faults and folds, their description, classification, and kinematic and dynamic analysis. Deformation, strength, fracture, and rheological properties of rocks. Mr. Yin (F)

**116. Paleontology.** Lecture, three hours; laboratory, three hours; field trips. Prerequisite: Biology 5 or consent of instructor. Review of major groups of fossil organisms and their significance in geology and biology. Mr. Marshall (W)

**119. Continental Drift and Plate Tectonics.** Lecture, three hours. Prerequisites: upper division standing and one introductory geology course (course 1, 1H, 100, or equivalent), or consent of instructor. Classical concepts of sedimentation and tectonics. Alfred Wegener's theory of continental drift and ensuing controversy. Physiography of continents and oceans. Geophysical evidence regarding nature of ocean floor. Magnetic stratigraphy. Seafloor spreading. Plate tectonic model and its driving mechanisms. Tectonic, igneous, and metamorphic processes at plate boundaries. Mr. Christie (Sp)

**120. Rubey Colloquium: Major Advances in Earth Science.** Lecture, three hours. Prerequisite: upper division standing. Lectures on major advances in Earth science offered by distinguished authorities (including regular faculty). Supervision of continuity and assessment of student performance by a faculty member. Content varies from year to year. If laboratory work is required, course 199 must be taken concurrently. Mr. Harrison, Mr. Yin (W)

**121A-121B. Advanced Field Geology (6 units each).** Fieldwork, four weeks each. Prerequisites: courses 61, 103B, 111. Problems in field geology; preparation of geologic maps and cross-sections; preparation of written geologic reports in the field and a final written summary geologic report of selected areas. Mr. Reed (Sum)

**129. Hydrogeology.** (Formerly numbered 129A-129B.) Lecture, three hours. Prerequisites: course 1 or 1H or 100 or equivalent, upper division standing. Hydrogeologic controls of groundwater occurrence, movement, quality, and management. Hydrologic equation, groundwater/surface water relationships, water wells, pumping tests, pollution, artificial recharge, seawater intrusion, safe yield of groundwater basins, groundwater models. Mr. Hallinger (Sp)

**C130. Isotope Geochemistry.** (Formerly numbered 130.) Lecture, three hours; discussion, one hour. Prerequisite: junior, senior, or graduate standing in physical or biological sciences or consent of instructor. Theoretical aspects of isotope behavior: stable and radiogenic isotopes. Principles of geochronology. Use of isotopes as tracers in crust and mantle processes. Stable isotopes as indicators of environment and paleoclimate. Concurrently scheduled with course C232. (Alternates yearly with course 131.)

**131. Geochemistry.** Lecture, three hours; discussion, one hour. Prerequisite: junior or senior standing in chemistry, physics, or Earth and space sciences. Origin and abundance of the elements and their isotopes; distribution and chemistry of the elements in Earth, oceans, and atmosphere; chemistry of Earth's interior, phase transformations at high pressure and temperature. (Alternates yearly with course C130.) Ms. Reid (Sp)

**C132. Advanced Igneous Petrology.** Lecture, three hours; laboratory, three hours; field trips. Prerequisite: course 103A or consent of instructor. Understanding the genesis of igneous rocks based on geochemical, tectonophysical, and other geological evidence and principles. Concurrently scheduled with course C236. P/NP or letter grading. Mr. Davidson (W)

**133. Regional Geology.** Lecture, three hours; discussion, two hours. Prerequisites: courses 61 and 111, or consent of instructor. Application of geologic, stratigraphic, paleontologic, biologic, and climatic principles to a specific province or provinces. Emphasis on tectonic evolution of selected regions.

**134. Computing in Earth and Space Sciences.** Lecture, three hours; laboratory, three hours. Prerequisite: Program in Computing 3 or 10A or consent of instructor. Original programming and application of software to generate and test hypotheses with non-ideal or incomplete data sets. Interpolation/extrapolation with graphics to generate hypotheses; forward modeling from fundamental equations to explore implications; probabilistic testing of models against data. Examples and exercises from the Earth and space sciences. Introduction to software used in research and industry. Mr. Bird (Sp)

**135. Introduction to Applied Geophysics.** Lecture, three hours; laboratory, one hour. Prerequisites: Physics 8A, 8B, 8C or 6B, Mathematics 31A, 31B, 32A, and Program in Computing 3 or 10A, or consent of instructor. Not open for credit to students with credit for course 136A. Principles and techniques of gravimetric, seismic, magnetic, and other geophysical methods of exploration for ores, petroleum, and other economic minerals. Mr. McPherron (Sp)

**136A. Applied Geophysics.** Lecture, three hours; laboratory/field trips, three hours. Prerequisites: Physics 8A, 8B, 8C, 8D, Mathematics 33A, Program in Computing 3 or 10A. Not open for credit to students with credit for course 135. Seismic reflection and refraction, Fourier analysis and deconvolution, vibroseis, synthetic seismograms, marine seismics, seismic interpretation, gravity and magnetic fields, inversion uniqueness and depth rules.

**136B. Applied Geophysics.** Lecture, three hours; laboratory/field trips, six hours. Prerequisites: course 136A and Program in Computing 3 or 10A, or consent of instructor. Principles and techniques of exploration for mineral deposits using natural and artificial electric and magnetic fields. Methods include self potential, resistivity, induced polarization, electromagnetics, magnetotellurics, magnetics.

**136C. Field Geophysics (6 units).** Lecture, three hours; discussion, one hour; laboratory, two hours; fieldwork, 10 hours. Prerequisites: course 135 or 136A, consent of instructor. Application of seismic, gravimetric, magnetic, electrical, and other geophysical methods to geologic and engineering problems. Practical aspects of geophysical exploration, including planning, data collection, data reduction, and interpretation. Fieldwork on unsolved problems (week-long field trip).

**136D. Advanced Field Geophysics (6 units).** Lecture, six hours; laboratory, six hours; fieldwork, 12 hours. Prerequisites: course 135 or 136A, consent of instructor. Application of seismic reflection, seismic refraction, gravity, magnetic, electrical, and electromagnetic methods to geologic problems. Planning, data collection, data reduction, and interpretation. Use of computer in applied geophysics. Mr. Davis, Mr. Jackson (Sum, six weeks)

**137. Petroleum Geology.** Lecture, three hours. Prerequisites: courses 61 and 111, or consent of instructor. Geology applied to exploration for and production of natural gas and petroleum; techniques of surface and subsurface geology; problems of petroleum geology. Mr. Hallinger

**139. Engineering and Environmental Geology.** Lecture, two and one-half hours. Prerequisite: course 1 or 100. Recommended: course 111. Principles and practice of soil mechanics and foundation engineering in light of geologic conditions, recognition, prediction, and control or abatement of subsidence, landslides, earthquakes, and other geologic aspects of urban planning and subsurface disposal of liquids and solid wastes. Mr. Merfield (W)

**M140. Introduction to Fluid Dynamics.** (Same as Atmospheric Sciences CM140.) Lecture, three hours; discussion, one hour. Corequisite: Physics 131. Equations of fluid motion. Circulation theorems. Irrotational flow. Vortex motion. Rotating frame. Hydrostatic and geostrophic balance. Sound and shock waves. Viscous flow. Mr. Fovell (F)

**141. Basin Analysis.** Lecture, three hours; laboratory, six hours. Prerequisites: courses 103B, 111. Interpretation of sedimentary rock records in terms of tectonics and basin evolution. Sedimentary patterns in modern plate settings serve to focus interpretations of deformed rocks in complex structural regions. Mr. Ingersoll (F)

**150. Remote Sensing for Earth Sciences.** Lecture, three hours. Open to upper division and graduate students. Remote sensing related to development of natural resources. Characteristics of electromagnetic spectrum and review of remote sensing devices. Applicability to land-use classification, soil survey, urban studies, vegetation classification; emphasis on geologic interpretation of imagery. Mr. Sabins (W)

**152. Physics of the Earth.** (Formerly numbered 122.) Lecture, three hours; discussion, one hour. Prerequisites: Physics 8A, 8B, 8C, Mathematics 31A, 31B, and 32A, or consent of instructor. Application of physics to structure and evolution of the solid Earth. Seismology, convection and heat flow, gravity, geomagnetism, rock magnetism, and relation of these topics to plate tectonics and other problems of current geophysical interest. Mr. Anderson

**153. Oceans and Atmospheres.** Lecture, three hours; discussion, one hour. Prerequisites: Physics 8A, 8B, 8C, Mathematics 31A, 31B, and 32A, or consent of instructor. Physics and chemistry of Earth's oceans and atmosphere; origin and evolution of planetary atmospheres; biogeochemical cycles, atmospheric radiation and climate, energetics and dynamics of oceanic and atmospheric circulation systems. P/NP or letter grading. Mr. Schubert (W)

**154. Solar Terrestrial Physics.** (Formerly numbered M154.) Lecture, three hours; discussion, one hour. Prerequisite or corequisite: Physics 110B. Particle and electromagnetic emissions from the sun under quiet and under disturbed conditions. Solar wind. Magnetospheres and ionospheres of Earth and other planets. Geomagnetic phenomena and the aurora.

Mr. Russell (F)

**155. Planetary Physics.** Lecture, three hours; discussion, one hour. Prerequisites: Mathematics 31A, 31B, 32A, Physics 8A, 8B, and 8C, or consent of instructor. Formation of solar nebula; origin of planets and their satellites; comets, asteroids, and meteorites; celestial mechanics and dynamics; physics of planetary interiors, surfaces, and atmospheres.

Mr. Paige

**195G. Field Geology for Graduate Students (2 to 4 units).** Lecture, two hours; four to five field trips. Prerequisite: course 121B or equivalent or consent of instructor. Required of new graduate students in geology program. Advanced techniques in field geologic mapping, exposing students to igneous, metamorphic, and sedimentary terranes with varying amounts of tectonism. May be repeated for credit. P/NP or letter grading.

Mr. Reed (F)

**199. Special Studies in Earth and Space Sciences (2 to 8 units).** May be repeated for credit.

**199H. Honors Research in Earth and Space Sciences.** Prerequisites: senior standing, consent of departmental honors committee. Individual research designed to broaden and deepen students' knowledge of some phase of Earth and space sciences.

## Graduate Courses

**200A. Introduction to Geophysics and Space Physics I: The Solid Earth and Planets.** Lecture, three hours. Prerequisites: Physics 105A, 110A, 112, and 131, or consent of instructor. Geochemistry, cosmochemistry, and petrology; geotectonics; gravity field; seismology; heat transfer, thermal and mechanical evolution of the mantle; core and geomagnetism; lunar and planetary interiors.

Mr. Bird (F)

**200B. Introduction to Geophysics and Space Physics II: Oceans and Atmospheres.** Lecture, three hours. Prerequisites: Physics 105A, 110A, 112, and 131, or consent of instructor. Evolution, chemistry, and heat balance of oceans and atmospheres; molecular spectra, radiative transfer, and planetary observations; dynamics of oceans and atmospheres.

Mr. Schubert (Sp)

**200C. Introduction to Geophysics and Space Physics III: Plasmas — Aeronomy and the Interplanetary Medium.** Lecture, three hours. Prerequisites: Physics 105A, 110B, 112, and 131, or consent of instructor. Solar surface features, heating and expansion of corona, solar wind, plasma and magnetic fields, interaction of the solar wind with Earth, magnetospheric phenomena.

Ms. Kivelson (W)

**201. Classical Mechanics.** Lecture, three hours. Kinematics, variational principles and Lagrange equations, rotational dynamics. Hamilton equations of motion, linear and nonlinear perturbation theory, applications to solar system.

**202. Continuum Mechanics.** Lecture, three hours. Kinematics and dynamics of continuous media. Properties of stress, strain, and rate-of-strain tensors. Conservation laws. Elasticity and viscosity. Heat transfer, boundary layers, and dynamical similarity. S/U or letter grading.

Mr. Newman (F)

**203. Electrodynamics.** Prerequisite: upper division electromagnetic theory course or consent of instructor. Maxwell equations and boundary conditions; momentum, angular momentum, and energy of electromagnetic fields; plane electromagnetic and magnetohydrodynamic waves; wave guides, simple radiating systems, and diffraction.

**204. Time-Series Analysis and Spectral Estimation.** Lecture, three hours. Prerequisites: intermediate courses in calculus (including linear algebra and complex variables) and computer programming (including FORTRAN). Basic methods in time-series analysis, including spectral estimation, prediction, and signal detection, in application to problems in geophysics, atmospheric physics, and space physics. Topics include Fourier transforms (continuous, discrete, FFT), time series (Z-transforms, deconvolution), maximum entropy spectral analysis, autoregressive and moving average methods (AR, MA, ARMA), and multichannel prediction and spectral analysis.

**205. Inverse Theory and Data Interpretation.** Lecture, three hours. Prerequisites: Mathematics 115A, M150A-150B, and 151, or consent of instructor. Inverse modeling problem — determination of model parameters consistent with experimental data, considering effects of random errors and nonuniqueness. Emphasis on linear and quasi-linear problems; non-linear problems also discussed. Tools used include matrix theory, quadratic forms, orthogonal rotations, statistics, principal axis transformation for rectangular matrices, Bachus/Gilbert resolving kernels, and Lagrange multipliers. Examples from a broad range of physical sciences.

**208. Geothermics.** Lecture, two and one-half hours; discussion, 30 minutes. Prerequisite: Mathematics 33A or consent of instructor. Basic concepts of heat transfer applied to solutions of geological and geophysical problems, including continental heat flow, cooling of oceanic lithosphere, solidification of magmas, thermal and subsidence history of sedimentary basins, frictional heating on fault zones, mantle geotherms, temperature in descending slabs, thermal convection in geothermal regions.

Mr. Schubert (F)

**219. Planetary and Orbital Dynamics.** Planetary rotations, satellite orbits, and tidal dissipation; planetary orbital system; resonance effects and chaos; spin-orbit and orbit-orbit coupling; planetary rings.

**220. Principles of Paleobiology.** Lecture/discussion, three hours. Prerequisite: graduate standing in science. Open to qualified undergraduates in biological and physical sciences with consent of instructor. Current and classic problems in paleobiology, with emphasis on interdisciplinary problems involving aspects of biology, geology, organic geochemistry, and cosmology. Content varies from year to year. May be repeated for credit.

Mr. Marshall

**221. Field Geology.** Lecture, one hour; discussion, one hour; fieldwork, 10 days. Prerequisites: course 121B, or 195G and consent of instructor. Planning, execution, and presentation of geologic mapping projects at professional level. Resolution of problems in Southern California geology from synthesis of new and published research. Field area varies from year to year. May be repeated for credit.

Mr. Yin

**222. Introduction to Seismology.** Lecture, three hours. Types of seismic waves; travel-time seismology; epicenter location; amplitude variations; seismograph theory; explosion seismology; seismicity; focal conditions; surface wave analysis; microseisms and tsunamis.

Mr. Davis (Sp)

**M224A. Elastodynamics.** (Same as Mechanical, Aerospace, and Nuclear Engineering M257A.) Lecture, four hours; outside study, eight hours. Prerequisites: Mechanical, Aerospace, and Nuclear Engineering 256A and M256B, or consent of instructor. Equations of linear elasticity, Cauchy equation of motion, constitutive relations, boundary and initial conditions, principle of energy. Sources and waves in unbounded isotropic, anisotropic, and dissipative solids. Half-space problems. Guided waves in layered media. Applications to dynamic fracture, nondestructive evaluation (NDE), and mechanics of earthquakes.

Mr. Mal

**M224B. Elastic Wave Propagation II.** (Same as Mechanical, Aerospace, and Nuclear Engineering M257B.) Prerequisite: course M224A. Diffraction and scattering of elastic waves by isolated cracks and inclusions; normal mode theories for vibration of finite elastic bodies; dynamic theories of fracture; representative applications in engineering and seismology.

**225A. Physics and Chemistry of Planetary Interiors I.** Chemical compositions of Earth and planets; high-pressure and temperature effects, phase transitions, and equations of state; variations of density and temperature with depth; thermal and compositional evolution.

Mr. Anderson (F)

**225B. Physics and Chemistry of Planetary Interiors II.** Lateral inhomogeneities in Earth: seismic velocities, petrology, geothermal and gravitational variations; evidences of motion; remanent magnetism, seismic motions; postglacial rebound; plate tectonics; rheology of mantle; thermal convection.

Mr. Schubert

**229. Planetary Atmospheres.** Lecture, three hours. Prerequisite: course 200B or consent of instructor. Planetary atmospheric structure, dynamics, and composition. Topics include spacecraft observations; origin and evolution of atmospheres; photochemistry, radiation mechanisms, and transport; atmospheric waves and general circulation; wave-mean flow and turbulence; remote sensing and inversion techniques.

Mr. Newman (W)

**230. X-Ray Crystallography.** Lecture, three hours; laboratory, three hours. Prerequisite: course 51B. Point, translation, and space group symmetry, diffraction of X ray, reciprocal lattice theory, single crystal X-ray methods, diffraction symmetry and elementary crystal structure analysis. (Alternates yearly with course 231.)

**231. Crystal Chemistry and Structure of Minerals.** Lecture, three hours; laboratory, three hours. Prerequisite: course 51B. Bonding, interatomic configurations, polymorphic transformations, isotypism, thermal and positional disorder; survey of structures of common minerals, and relation of physical and chemical properties to crystal structure. (Alternates yearly with course 230.)

Mr. Dollase (Sp)

**C232. Isotope Geochemistry.** Lecture, three hours; discussion, one hour. Prerequisite: junior, senior, or graduate standing in physical or biological sciences or consent of instructor. Theoretical aspects of isotope behavior: stable and radiogenic isotopes. Principles of geochronology. Use of isotopes as tracers in crust and mantle processes. Stable isotopes as indicators of environment and paleoclimate. Concurrently scheduled with course C130.

**233. Mineral Physics and Equations of State.** Lecture, three hours. Prerequisite: consent of instructor. Interrelationship of physical properties of rock-forming minerals: optical reflectivity, refraction index, sound velocity, elastic constants, specific heat, and thermal expansivity. Determination of pressure, volume, and temperature relationships and planet-forming compounds. Variation of elastic constants with temperature and pressure. Application of shock-wave experiments to equations of state.

**234A. Thermodynamic and Geometric Principles of Phase Equilibria.** Prerequisites: course 51B and Chemistry 110B, or consent of instructor. Thermodynamic bases of phase transformations and of phase rules. Geometric representation of multicomponent systems using pressure, temperature, chemical potential, molal volume, and fugacity of oxygen, water, and other volatile components as variable parameters.

**234B. Petrologic Phase Equilibria.** Lecture, three hours; discussion, three hours. Prerequisites: course 51B and Chemistry 110B, or consent of instructor. Principles governing homogeneous and heterogeneous equilibria, with selected applications to mineral stability relations in igneous and metamorphic rocks (fractional crystallization, partial melting, hydrothermal solutions, element partitioning in coexisting phases).

**235A-235B-235C. Current Research in Geochemistry (1 unit each).** Prerequisite: graduate standing in Earth and space sciences. Seminars presented by staff, outside speakers, and graduate students stressing current research in Earth and planetary chemistry. May be repeated for credit. S/U grading.



**C236. Advanced Igneous Petrology.** (Formerly numbered 236.) Lecture, three hours; laboratory, three hours; field trips. Prerequisite: course 103A or graduate standing or consent of instructor. Understanding the genesis of igneous rocks based on geochemical, tectonophysical, and other geological evidence and principles. Concurrently scheduled with course C132. S/U or letter grading.

Mr. Davidson (W)

**237. Geochemistry of Solutions.** Lecture, three hours. Prerequisites: courses 103A, 103C, Chemistry 110A, and 110B, or consent of instructor. Classical thermodynamics applied to mineral solutions, silicate melts, and low- and high-temperature aqueous solutions and gases. Chemical kinetics and its application to geologic problems.

**238. Metamorphic Petrology.** Lecture, three hours; laboratory, six hours. Prerequisite: one introductory petrology and petrography course or consent of instructor. Interpretation of metamorphic rocks in light of observation, theory, and experiment. Geological relations, petrographic evidence, metamorphic zoning, thermodynamics of phase equilibria, projections, chemographic relationships, use of piezobirefringent haloes, Rayleigh depletion model, isotopic fractionation, environmental factors of metamorphism. Laboratory study of representative metamorphic rocks and suites of rocks selected to illustrate topics discussed in lectures.

**239. Structural Petrology of Deformed Rocks.** Discussion, three hours; laboratory, three hours. Prerequisites: courses 51B, 112. Recommended: courses 245A-245B, 249. Use of universal stage. Microscopic study of textures, structures, and preferred orientations of minerals in tectonites. Deformation mechanisms in crystals and aggregates. Theories of development of preferred orientation. Application of experimental data to interpretation of microfibrils. (Alternates yearly with course 249.)

Mr. Christie (W)

**240. Space Plasma Physics.** Lecture, three hours. Prerequisite: course 203 or Physics 210A. Physics of plasmas in space, including treatments based on magnetohydrodynamics and kinetic theory. Applications to solar or planetary winds; steady-state magnetospheres; magnetospheric convection; substorm processes; magnetic merging; field-aligned currents and magnetosphere/ionosphere coupling; ring current dynamics; and wave particle instabilities.

Mr. Coleman (Sp)

**241. Sedimentary Petrology.** Lecture, two hours; laboratory, six hours. Prerequisites: courses 51B, 103B. Texture, composition, structure, and modes of origin of sedimentary rocks. Content varies from year to year.

**242. Sandstone Petrology.** Lecture, two hours; laboratory, four hours. Prerequisite or corequisite: course 141. Petrographic study of sandstones, with emphasis on provenance, petrofacies, and paleotectonic reconstructions.

**M243A-M243B-M243C. Advanced Evolutionary Biology.** (Same as Biology M231A-M231B-M231C.) Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. Series of advanced studies of concepts and methods in evolutionary biology. Topics may include speciation, extinction, coevolution, fossil record, rates of evolution, contributions of molecular biology in evolutionary studies, and development of evolutionary thought. Students encouraged to take each course in sequence. Themes vary from year to year. May be repeated for credit. S/U or letter grading. **M243A.** Mechanisms of Evolution. Prerequisites: Biology 120 and/or 135 or equivalent; **M243B.** Patterns of Evolution; **M243C.** Molecular Evolution.

**244. Tectonics of Sedimentary Basins.** Lecture, two hours; discussion, two hours; field trips. Prerequisites: courses 103B, 119. Recommended: course 141. Plate-tectonic settings of sedimentary basins. Basin analysis, stratigraphy, paleoenvironments, sedimentology, and related subjects in context of plate-tectonic controls on basin evolution.

Mr. Ingersoll (W)

**245A-245B. Stress and Deformation.** Lecture, three hours. Prerequisites: Physics 8A, 8B, Mathematics 32A, and 32B, or consent of instructor. Recommended: Mathematics 33A. Scalars, vectors, tensors; subscript notation; rotation and inversion of axes, transformation matrix; stress; finite homogeneous strain, rotation; infinitesimal strain, strain rate; Mohr's circle construction and other graphical methods; flow laws.

Mr. Oertel (W,Sp)

**246. Stress in the Lithosphere.** Lecture, three hours. Prerequisite: course 202 or 245A or Civil Engineering 108 or consent of instructor. Overcoiling, hydrofracture, fault plane solutions, seismic stress drops; effects of erosion, cooling, Earth ellipticity, topography, and density anomalies. State of stress in plate boundaries and interiors. Application of finite element and analytic methods to stress determination.

**247. Glaciology.** Lecture, three hours. Prerequisite: course 245A or equivalent or consent of instructor. Occurrence and classification of glaciers; accumulation and ablation; glacier budget; mechanical properties of ice; glacier flow; crevasses; textural and structural features; thermal relationships; bed slip; climatic response; catastrophic advances.

Mr. Shreve (W)

**248. Advanced Structural Geology.** Lecture, three hours; discussion, two hours. Prerequisite: course 111. Principles governing fracture, folding, and flow of rocks; solutions of structural problems at various scales; regional tectonic problems.

Mr. Yin (Sp)

**249. Structural Analysis of Deformed Rocks.** Discussion, three hours; laboratory, three hours. Prerequisites: courses 111 and 112, or consent of instructor. Recommended: course 248. Geometrical analysis of megascopic structures in terranes with complex or multiple deformations. Analysis of strain from deformed primary features. Interpretation of structural history in metamorphic terranes. (Alternates yearly with course 239.)

**250. Advanced Engineering and Environmental Geology.** Lecture, three hours; required field trips. Prerequisite: course 139 or consent of instructor. Current topics in engineering and environmental geology, including slope stability, hazardous waste disposal, grading codes, slip rates and recurrence intervals of active faults, computer and remote sensing applications, and case histories. Offered irregularly according to demand.

**251. Seminar: Mineralogy.** Lecture, three hours. Examination of groups of rock-forming minerals (e.g., feldspars), integrating such aspects as crystal structure, crystal chemistry, phase equilibria, and petrogenesis.

Mr. Dollase (F)

**252. Seminar: Geochemistry.** Lecture, two hours; discussion, two hours. Phase equilibria under crustal conditions, chemistry of ocean waters, recent and ancient sediments, structure and chemistry of upper mantle, geochronology, cosmochronology, and cosmochemistry.

Mr. Wasson (F)

**253. Seminar: Petrology.** Lecture, three hours. Problems of igneous or metamorphic petrology: methods of evaluating physical conditions of metamorphism; diffusion in mineralogic systems; origin of ultramafic rocks and problems of the mantle; element fractionation among coexisting phases; other current subjects in the field. S/U or letter grading.

Mr. Manning (Sp)

**254. Seminar: Sedimentology.** Lecture, three hours. Processes of sediment transport and deposition; deep sea sediments; deltas and estuaries; petrology of carbonates, sandstones, and lutites; stratigraphy; paleoenvironmental studies.

**255. Seminar: Structural Geology and Tectonics.** Lecture, three hours. Flow and fracture in Earth's crust from microscopic to continental scale and in experiments. Examples may include metamorphic terranes, glaciers, plutons, volcanoes, and consolidated or unconsolidated sediments. Modern concepts of oceanic basins; processes leading to segregation of continental-type rocks.

Mr. Christie (W)

**256. Seminar: Glaciology and Geomorphology.** Lecture, three hours. Glacier physics, theoretical geomorphology, river mechanics, statistical models.

**257. Seminar: Paleontology.** Lecture/discussion, three hours. Prerequisite: consent of instructor. Advanced topics in paleobiology, biostratigraphy, paleoecology, and paleobiogeography, with emphasis on relations to other disciplines.

Mr. Marshall, Mr. Schopf (F,W)

**258. Seminar: Mineral Deposits.** Lecture, three hours. Problems of distribution, composition, and formation of mineral deposits; mineral economics; investigations of opaque minerals by microscopic or other techniques.

**259. Seminar: Paleotectonics.** Lecture, two hours; discussion, two hours. Prerequisite: course 244 or consent of instructor. Basin evolution and paleogeography, with emphasis on the Phanerozoic of the Western U.S.

Mr. Ingersoll (Sp)

**260. Seminar: Advanced Topics in Geology (2 to 4 units).** Topics vary. May be repeated for credit.

**261. Topics in Magnetospheric Plasma Physics.** Lectures, discussions, and exercises on specific advanced topics in magnetospheric plasma physics. Previous courses examined magnetic storms, magnetospheric substorms, ultralow frequency waves, and adiabatic particle motion in Earth's radiation belts.

Mr. McPherron (W)

**265. Instrumentation, Data Processing, and Data Analysis in Space Physics.** Lecture, three hours. Principles, testing, and operations of magnetometers and other instruments. Data processing, display, and archiving. Time-series analysis techniques, including filtering. Fourier series, eigenanalysis, and power spectra.

Mr. Russell (Sp)

**268. Seminar: Resource Analysis.** Lecture, three hours. Prerequisite: consent of instructor. Geological, geophysical, economic, and technological factors in studies of optimum use of mineral and energy resources. Emphasis on different mineral or energy sources from time to time.

**M270A-M270B-M270C. Seminars: Climate Dynamics (2 to 4 units each).** (Same as Atmospheric Sciences M272A-M272B-M272C and Geography M270A-M270B-M270C.) Lecture, two hours. Prerequisite: consent of instructor. Archaeological, geochemical, micropaleontological, and stratigraphic evidence for climate change throughout the geological past. Rheology and dynamics of climatic subsystems: atmosphere and oceans, ice sheets and marine ice, lithosphere and mantle. Climate of other planets. Modeling, simulation, and prediction of modern climate on monthly, seasonal, and interannual time scale. May be repeated for credit. S/U or letter grading.

**282. Seminar: Geophysics.** Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. Seismology, geophysical prospecting, electromagnetic prospecting. Selected topics in Earth physics. Content varies from year to year. May be repeated for credit.

**M285. Origin and Evolution of Solar System.** (Same as Astronomy M285.) Dynamical problems of solar system; chemical evidences from geochemistry, meteorites, and solar atmosphere; nucleosynthesis; solar origin, evolution, and termination; solar nebula, hydromagnetic processes, formation of planets and satellite systems. Content varies from year to year. May be repeated for credit. S/U grading.

**286A-286B-286C. Seminars: Planetology (2 units each).** Problems of current interest concerning moon, planets, and meteorites. May be repeated for credit. S/U grading.

**287A-287B-287C. Seminars: Seismology and Earth's Interior (2 units each).** Problems of current interest in seismology and Earth's interior. May be repeated for credit. S/U grading.

**M288A-M288B-M288C. Seminars: Space Physics (2 units each).** (Same as Atmospheric Sciences M275A-M275B-M275C.) Lecture, one hour. Problems of current interest concerning particles and fields in space. May be repeated for credit. S/U grading.

**289A-289B-289C. Seminars: Fluid Dynamics (2 units each).** Problems of current interest in fluid dynamics, with emphasis on geophysical applications. May be repeated for credit. S/U grading.

**290. Seminar: Time-Series Analysis (2 units).** Discussion, three hours. Discussion of recent research in spectral estimation, filtering, and signal detection applied to geophysical problems. S/U grading.

Mr. Jackson (Sp)

**295A-295B-295C. Current Research in Earth and Space Sciences (1 unit each).** Prerequisite: graduate standing in Earth and space sciences. Seminars presented by outside speakers, staff, and/or graduate students describing current research. Written reports required. May be repeated for credit. S/U grading.

Mr. Bird, Mr. Yin

**296A-296Z. Research Topics in Earth and Space Sciences (1 unit each).** Discussion, one to three hours. Prerequisite: graduate standing in Earth and space sciences or consent of instructor. Advanced study and analysis of current topics in Earth and space sciences. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading:

**296A.** Rock Deformation, Structural Geology, Tectonics. Mr. Christie

**296B.** Volcanology and Geochemistry of Volcanic Rocks. Mr. Davidson

**296C.** Seismology and Solid Earth Physics. Mr. Davis

**296D.** Thermal Evolution of Lithosphere. Mr. Harrison

**296E.** Sedimentation and Tectonics. Mr. Ingersoll

**296F.** Seismology. Mr. Jackson

**296G.** Planetary and Orbital Dynamics. Mr. Kaula

**296H.** Space Plasma Physics. Ms. Kivelson

**296I.** Earthquakes. Mr. Knopoff

**296J.** Metamorphic Petrology. Mr. Manning

**296K.** Quantitative and Molecular Paleobiology. Mr. Marshall

**296L.** Magnetic Phenomena. Mr. McPherron

**296M.** Planetary Physics. Mr. Newman

**296N.** Martian Surface and Atmosphere. Mr. Paige

**296O.** Tectonics and Stratigraphy. Mr. Reed

**296P.** Chemical Geodynamics. Ms. Reid

**296Q.** Paleobiology. Mr. Runnegar

**296R.** Planetary and Space Physics. Mr. Russell

**296S.** Precambrian Paleobiology. Mr. Schopf

**296T.** Geophysical Fluid Dynamics. Mr. Schubert

**296U.** Geomorphology and Geological Physics. Mr. Shreve

**296V.** Cosmochemistry. Mr. Wasson

**296W.** Structural Geology, Tectonics. Mr. Yin

**297. Advanced Techniques in Geological Research (2 to 4 units).** S/U grading. Mr. Jones (W)

**298. Advanced Topics in Earth and Space Sciences (2 to 4 units).** (W,Sp)

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study and/or Research (2 to 12 units).** May be repeated. S/U or letter grading.

**597. Preparation for M.S. Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 8 units).** S/U grading.

**598. M.S. Research and Thesis Preparation (2 to 12 units).** May be repeated. S/U grading.

**599. Ph.D. Research and Dissertation Preparation (2 to 12 units).** S/U grading.

## East Asian Languages and Cultures

290 Royce Hall, (310) 206-8235

### Professors

Robert E. Buswell, Ph.D. (*Chinese*)  
 Leo Ou-fan Lee, Ph.D. (*Chinese*)  
 Peter H. Lee, Ph.D. (*Korean*), *Chair*  
 Herbert E. Plutschow, Ph.D. (*Japanese*)  
 Hartmut E.F. Scharfe, Ph.D. (*Sanskrit*)  
 Richard E. Strassberg, Ph.D. (*Chinese*)  
 Robert C. Epp, Ph.D., *Emeritus*  
 Kan Lao, B.A., *Emeritus*  
 Richard C. Rudolph, Ph.D., *Emeritus*

### Associate Professors

Noriko Akatsuka, Ph.D. (*Japanese*)  
 Hung-hsiang Chou, Ph.D. (*Japanese*)  
 Shirleen S. Wong, Ph.D. (*Chinese*)  
 Ben Befu, Ph.D., *Emeritus*

### Assistant Professors

William M. Bodiford, Ph.D. (*Japanese*)  
 John B. Duncan, Ph.D. (*Korean*)  
 Shoichi Iwasaki, Ph.D. (*Japanese*)  
 Michele F. Marra, Ph.D. (*Japanese*)  
 Leslie Pincus, Ph.D. (*Japanese*)  
 C.P. Haun Saussy, Ph.D. (*Chinese*)  
 Shu-mei Shih, Ph.D. (*Chinese*)

### Lecturers

Masako Douglas, Ph.D. (*Japanese*)  
 Sung-Ock Sohn, Ph.D. (*Korean*)  
 Kuo-ming Sung, M.Phil. (*Chinese*)  
 Yihua Wang, M.A. (*Chinese*; *Luckman Distinguished Teaching Award*)  
 Y.C. Chu, M.A., *Emeritus*  
 Kuo-yi Pao (Unenseñen), M.A., M.S., *Emeritus*

## Scope and Objectives

The Department of East Asian Languages and Cultures aims to provide students with an exposure to the rich cultural heritage of China, Japan, Korea, and India. This is accomplished through courses in language, literature, religion, thought, archaeology, and other aspects of culture. For undergraduates the department offers a program leading to the B.A. degree in Chinese or Japanese, in which the emphasis is on the language and culture of China or Japan. The language program aims to develop the four skills of speaking, aural comprehension, reading, and writing in a balanced and mutually supportive manner.

At the graduate level, the department offers a program leading to an M.A. degree in several

fields of East Asian culture. The program aims to give students a solid mastery of these fields preparatory to careers in teaching or in areas such as journalism, business, banking, or government service. The Ph.D. program, which is very selective, trains research scholars for academic careers in specialized fields.

## Classes for Nonmajors

The department offers the following courses in which knowledge of Asian languages is not required: Chinese 50, 150, 151, 160, 175, 190, East Asian Languages and Cultures 60, 61, 88, 161, 162, Indic 175, Japanese 50, 88, 90, 150, 151, 160, 161, 175, M182, Korean 50, 150, 151, 160, 175, 180A, 180B, 180C.

## Buddhist Courses

The department also offers the following courses in Buddhism: Chinese 160, 165, 265A-265B, East Asian Languages and Cultures 60, 61, 161, 162, 265A-265B, Japanese 160, 165, 265A-265B, Korean 160, 165, 265A-265B.

## Bachelor of Arts in Chinese

### Preparation for the Major

*Required:* Chinese 1, 2, 3, 4, 5, 6, 50, History 9C, and 11A or 11B. *Recommended:* Anthropology 9, Chinese 110A, and English 4.

### The Major

*Required:* A total of 11½ courses, of which seven must be upper division language courses, including at least two vernacular language courses from Chinese 100A, 100B, 100C, 101A, 101B, 101C, and at least four classical language courses from 110A, 110B, 110C, 140A, 140B, 140C, 165.

The remaining four and one-half required courses must include Chinese 150 or 151; one course from 160, 175, 190; East Asian Languages and Cultures 199 (at least two units in the senior year); Art History C115D, C115E, or C115F; and either History 182A, 182B, 183A, 183B, or 184.

English 95A, 95B, 95C, and additional courses in Chinese history are recommended. Students planning to undertake graduate study are urged to include in their undergraduate program additional courses in classical Chinese and beginning courses in Japanese or Korean. Those planning to undertake advanced graduate study are urged to gain a reading knowledge of French or German.

## Bachelor of Arts in Japanese

### Preparation for the Major

*Required:* Japanese 1, 2, 3, 4, 5, 6, 50, History 9C, and 11A or 11B. *Recommended:* Anthropology 9 and English 4.

## The Major

*Required:* A total of 12½ courses, of which seven must be upper division language courses selected from Japanese 100A, 100B, 100C, 130A, 130B, 140A, 140B, 140C, 149. The seven courses must include 100B and 130A or 130B.

The remaining five and one-half required courses must include Japanese 120 or CM122 or CM123; 150 or 151; one course from 160 or 175; East Asian Languages and Cultures 199 (at least two units in the senior year); Art History 114C; and either History 187A, 187B, or 187C.

English 95A, 95B, 95C, and additional courses in Japanese history are recommended. Students planning to undertake graduate study are urged to include in their undergraduate program three courses in classical Japanese and beginning courses in Chinese or Korean. Those planning to undertake advanced graduate study are urged to gain a reading knowledge of French or German.

## Master of Arts Degree

### Admission

To qualify for admission you are expected to (1) meet general University requirements for the undergraduate major, (2) have taken a minimum of three quarter courses or the equivalent in classical Chinese (for Chinese majors), classical Japanese (for Japanese majors), or a minimum of three years of modern Korean (for Korean majors), and (3) present a B.A. degree from a Department of East Asian Languages and Cultures similar to UCLA's. Applicants with a B.A. in another field or from departments whose requirements are less rigorous are admitted to the Department of East Asian Languages and Cultures (290 Royce Hall, UCLA, Los Angeles, CA 90024-1540) only if they can meet the requisite standards within one year. Selection is based on (1) prior scholastic performance, (2) recommendations by professors, (3) score on the Graduate Record Examination (GRE), (4) statement of purpose focusing on research interests, and (5) an undergraduate term paper or comparable writing sample in English.

### Major Fields or Subdisciplines

M.A. students may specialize in Chinese language and culture, Japanese language and culture, or Korean language and culture. A comparative or interdisciplinary field may be incorporated into an area of specialization.

### Language Requirements

Students majoring in Chinese must have completed one year of Japanese or Korean with a grade of S or better; those majoring in Japanese must have completed one year of classical or modern Chinese or Korean with a grade of S or better; those majoring in Korean must have completed one year of Chinese or Japanese with a grade of S or better. This requirement may be fulfilled before admission to the M.A. program.

## Course Requirements

Nine courses (36 units minimum) are required for the degree, of which six (24 units minimum) must be graduate courses. Chinese 200 is required for the Chinese major; Japanese 200 is required for the Japanese major; Korean 200 is required for the Korean major. With departmental consent, up to two courses (eight units) taken outside the department (S/U grading is acceptable) may be applied toward the nine courses. No more than two 500-series courses (four units) may be applied toward the nine courses required for the degree; only one 500-series course may be applied toward the minimum graduate course requirement. Courses taken to meet admission standards and language requirements may not be applied toward the total course requirement. You must take at least one seminar in each of your comprehensive examination fields.

International students may also be required to take English as a Second Language 33A, 33B, 33C, 34, 36, or other ESL courses.

### Thesis Plan

This plan is recommended if you intend to proceed to the Ph.D. After completing at least one year of graduate work with excellence, you may petition the department to present a thesis; you also must have a letter of support from a faculty member agreeing to serve as your thesis director. After your committee accepts your thesis, you must take an oral examination related to it and a translation examination in your area of specialization.

### Comprehensive Examination Plan

Comprehensive examinations are offered in the literature and cultural history of China, Japan, or Korea. You are required to take an examination in each of three fields within your area of specialization, including one in a literature field. In consultation with your graduate adviser, you may replace one field with an outside field either within the department or in another department.

For the major in Chinese, you must take comprehensive examinations in three of the following fields: (1) modern Chinese literature, (2) traditional Chinese fiction and drama, (3) traditional Chinese poetry, (4) Chinese civilization or archaeology, (5) Chinese Buddhism.

For the major in Japanese, you must take comprehensive examinations in three of the following fields: (1) classical Japanese literature (poetry and prose), (2) classical Japanese culture and folklore, (3) modern Japanese literature and culture, (4) Japanese Buddhism, (5) Japanese linguistics.

For the major in Korean, you must take comprehensive examinations in three of the following fields: (1) Korean culture, (2) Korean Buddhism, (3) classical Korean poetry, (4) classical Korean fiction, (5) modern Korean literature.

You must also take a translation examination in your area of specialization, and you are re-

quired to present two seminar research papers. The results of the examinations and the quality of the papers determine whether you are admitted to the Ph.D. program.

## Ph.D. Degree

### Admission

An M.A. degree in the field or in a related field is required. Selection among qualified applicants from outside the department is based on (1) prior scholastic performance, (2) three letters of recommendation, (3) score on the Graduate Record Examination (GRE), (4) statement of purpose focusing on research interests, and (5) a recent research paper in English. Students with an M.A. in the department are judged on their M.A. record.

International students are encouraged to complete an M.A. in the department before proceeding to the Ph.D. program.

### Major Fields or Subdisciplines

The department emphasizes four major fields at the Ph.D. level: (1) Chinese language and literature with the subdisciplines of poetry, drama, fiction, and modern literature; (2) Japanese language and literature with the subdisciplines of ancient, medieval, early modern, and modern literature; (3) Korean language and literature with the subdisciplines of culture, Buddhism, classical poetry and fiction, and modern literature; (4) Buddhist studies with the subdisciplines of Chinese Buddhism, Japanese Buddhism, and Korean Buddhism. A comparative or interdisciplinary field may be incorporated into an area of specialization. In addition, a program in ancient Chinese civilization or Japanese linguistics may be arranged by petition.

### Foreign Language Requirement

You must demonstrate reading knowledge of French or German by passing (1) a reading examination administered by the department's foreign language examination committee, (2) the Graduate School Foreign Language Test (GSFLT) with a score of 500 or better, or (3) a level five course with a grade of B or better or S. With the consent of the department, Russian may be substituted.

### Course Requirements

Students entering the program with an M.A. in a different field, or in the same field but from another institution, must meet the standards of the department's M.A. coursework in addition to fulfilling Ph.D. course requirements. A minimum of five graduate courses (not including courses taken to meet the language requirements listed below) beyond the M.A. degree is required. In addition, students majoring in Chinese must take two years of modern Japanese with grades of S and a written examination testing their ability to translate Japanese studies in their field; those majoring in Japanese must take two years of modern Chinese, classical Chinese, or modern Korean with grades

of S and a written examination testing their ability to translate Chinese or Korean studies in their field; those majoring in Korean must take two years of modern Chinese, classical Chinese, or modern Japanese with grades of S and a written examination testing their ability to translate Chinese or Japanese studies in their field. Those majoring in Buddhist studies are encouraged to take appropriate courses in Sanskrit and/or Pali. A grade of B or better or S is required for all language courses.

### Qualifying Examinations

You must take written examinations as follows:

For the major in Chinese literature — (1) a general examination in Chinese literature covering modern Chinese literature, traditional fiction and drama, and traditional Chinese poetry; (2) examinations in three approved fields to be selected from at least two of the following groups: (a) Chinese poetry, Chinese fiction and drama, modern Chinese literature, (b) ancient Chinese civilization, Chinese Buddhism or another field of Chinese thought or religion, (c) an outside field from within the department, (d) a field offered in another department or interdepartmental program.

For the major in Japanese literature — (1) a general examination in Japanese literature; (2) examinations in two of the following approved fields (which cannot be from the same group): (a) ancient, medieval, early modern, or modern Japanese literature, (b) Japanese Buddhism, another field of Japanese thought or religion, or Japanese linguistics, (c) Chinese or Korean literature, (d) a field offered in another department or interdepartmental program.

For the major in Korean literature — (1) a general examination in Korean literature; (2) examinations in three approved fields to be selected from at least two of the following groups: (a) Korean poetry, Korean fiction, modern Korean literature, (b) Korean Buddhism, Korean thought, (c) Chinese or Japanese literature, (d) a field offered in another department or interdepartmental program.

For the major in Buddhist studies — (1) a general examination in your major field; (2) an examination in an approved subfield within your major field; (3) a general examination in another approved field inside or outside the department.

For the major in ancient Chinese civilization or Japanese linguistics — (1) an examination in your major language area; (2) a general examination in your major field; (3) an examination in an approved subfield within your major field; (4) a general examination in another approved field inside or outside the department.

The written qualifying examinations must be taken within a four-week period after satisfying all language and course requirements. With consent of the department, you may repeat the qualifying examinations once only. You must also take a translation examination in your area of specialization.

After successful completion of the written examinations, the department appoints a doctoral committee whose chair serves as your dissertation adviser. Preferably within six months, but no more than a year after your written examinations, you must pass the University Oral Qualifying Examination on the dissertation proposal. With department consent, you may repeat the examination once.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Dissertation/Final Oral Examination

Within three years after you have advanced to candidacy, you must present a dissertation embodying the results of independent investigation. If you fail to meet the five-year time limit for the completion of the dissertation, you are required to take the written qualifying examinations again.

A final oral defense of the dissertation is optional at the discretion of the doctoral committee.

## Chinese

### Lower Division Courses

No credit is allowed for completing a less advanced course after successful completion of a more advanced course in grammar and/or composition.

**1. Elementary Modern Chinese.** Lecture, two hours; discussion, three hours. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Introduction to fundamentals of standard Chinese, including pronunciation, grammar, and Chinese characters, with emphasis on all four basic language skills — speaking, listening comprehension, reading, and writing.

Ms. Wang

**2. Elementary Modern Chinese.** Lecture, two hours; discussion, three hours. Continuation of course 1.

Ms. Wang

**3. Elementary Modern Chinese.** Lecture, two hours; discussion, three hours. Continuation of course 2.

Ms. Wang

**4. Intermediate Modern Chinese.** Lecture, two hours; discussion, three hours. Prerequisite: course 3 or consent of instructor. Designed to strengthen communicative skills of listening, speaking, reading, and writing. Grammar reviews, knowledge of idiomatic expressions, and both traditional and simplified characters.

**5. Intermediate Modern Chinese.** Lecture, two hours; discussion, three hours. Prerequisite: course 4 or consent of instructor. Continuation of course 4.

**6. Intermediate Modern Chinese.** Lecture, two hours; discussion, three hours. Prerequisite: course 5 or consent of instructor. Continuation of course 5.

**50. Chinese Civilization.** Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. Survey of development of outstanding aspects of Chinese culture from prehistoric to modern times.

Mr. Chou

## Upper Division Courses

**100A-100B-100C. Advanced Modern Chinese.** Lecture, three hours. Prerequisite: course 6 or consent of instructor. Materials selected from contemporary Chinese publications; with emphasis on social sciences. Texts analyzed for their linguistic features and social and cultural background. Readings, compositions, informal debates on topical issues, and oral presentations.

Ms. Wang

**101A-101B-101C. Readings in Modern Expository Chinese.** Lecture, three hours. Prerequisite: course 100C or consent of instructor. Selected readings in modern essays taken from literary texts. In addition, students work with material in the area of their professional interests.

**110A-110B-110C. Introduction to Classical Chinese.** Lecture, three hours. Prerequisite: course 3 or consent of instructor. Grammar and readings in selected texts.

Mr. Chou, Mr. Strassberg

**120. Introduction to Chinese Linguistics.** Lecture, three hours. Prerequisite: course 6 or consent of instructor. Discussion of issues of Chinese phonology, morphology, and syntax. Case studies of seemingly idiosyncratic properties of Chinese in light of current theory of universal grammar.

Mr. Sung (F,W)

**130A-130B. Readings in Modern Chinese Literature.** Readings/discussion, three hours. Prerequisite: course 100B or consent of instructor. Readings and discussion of works of modern Chinese literature.

Ms. Shih

**140A-140B-140C. Readings in Classical Chinese Literature.** (Formerly numbered 140A-140B-140C, 143A-143B, 145A-145B.) Readings/discussion, three hours. Prerequisite: course 110C. Readings and discussion of works of classical Chinese literature. **140A.** Poetry; **140B.** T'ang and Sung Prose; **140C.** Fiction.

Mr. Saussy, Mr. Strassberg

**150. Chinese Literature in Translation: Classical Literature.** (Formerly numbered 150, 151.) Lecture, three hours; discussion, one hour. Prerequisite: English 3 or one course from Humanities 1A, 1B, 1C, 1D, 2A, 2B, 2C. Readings from English translations of masterpieces of the Chinese literary tradition, including most major genres (historical narrative, fiction, *shih* and *tz'u* poetry, drama, folk poetry, expository prose).

Mr. Saussy

**151. Chinese Literature in Translation: Modern Literature.** (Formerly numbered 152.) Lecture, three hours; discussion, one hour. Prerequisite: English 3 or one course from Humanities 1A, 1B, 1C, 1D, 2A, 2B, 2C. Knowledge of Chinese not required. Lectures and reading of representative works from 1900 to the present in English translation.

Ms. Shih

**160. Chinese Buddhism.** Lecture, three hours. Knowledge of Asian languages not required. Introduction and development of Buddhism in China, interaction between Buddhism and Chinese culture, rise of Chinese schools of Buddhism such as Pure Land and Zen, contributions to Chinese culture.

Mr. Buswell

**165. Introduction to Chinese Buddhist Texts.** Lecture, three hours. Prerequisite: course 100A or 110C or Korean 100A or Japanese 100A. Readings in Buddhist texts written in literary Chinese and taken from translated Indian sutras, indigenous exegetical materials, Chinese apocryphal scriptures, and Ch'an writings. Problems in translation from Indo-European languages into Chinese; evolution of Chinese Buddhist terminology. Coverage varies. May be repeated for credit with consent of instructor.

Mr. Buswell

**170. Readings in Chinese Philosophical Texts.** (Formerly numbered 275.) Lecture, three hours. Prerequisite: course 110C or consent of instructor. May be repeated for credit with consent of instructor.

Mr. Strassberg

**175. Introduction to Chinese Thought.** Lecture, three hours. Knowledge of Asian languages not required. General survey of indigenous Chinese thought from Chou period to circa 1800, covering Confucianism, Taoism, Mo-tzu, legalists, influence of Buddhism, development of neo-Taoism and neo-Confucianism.

**190. Archaeology in China.** (Formerly numbered 190A-190B.) Lecture, three hours. Early Chinese study of their own past, types of artifacts, beginnings of scientific archaeology, and surveys of major excavations of sites of all periods. Mr. Chou

**195. Chinese Etymology and Calligraphy.** Lecture, three hours. Prerequisite: one year of classical Chinese or consent of instructor. Covers (1) development of the Chinese writing system from the "Pottery Inscriptions" 6,000 years ago to modern "Simplified Forms" and the studies of Six Scripts principles which were used to form Chinese characters and (2) aesthetic training of calligraphic art and its appreciation, with focus on ways of recognizing and interpreting the "Cursive Style," a common form of handwriting. Mr. Chou

## Graduate Courses

**200. Bibliography and Methods of Research in Chinese.** Required of all graduate students in Chinese. Lectures and discussion on research methodologies for dealing with traditional Chinese materials, with emphasis on bibliography training (including most up-to-date indexes in Chinese studies), punctuation practice, knowledge of textual criticism, and rare book editions. Mr. Chou

**M201. China — Seminar: Classical Historiography and Readings in Classical Studies.** (Same as History M281.) Discussion, three hours. Prerequisite: two years of classical Chinese or working knowledge of classical Chinese. Readings in historiography and selected genres of historical documents. Mr. Chou

**210. Modern Chinese Literary History.** (Formerly numbered 231A-231B.) Lecture, three hours. Prerequisite: graduate standing. Discussion of history of modern Chinese literature, focusing on sources, controversies, major literary genres, and critical approaches to studying the relationship between literature and history. Mr. L. Lee

**211. Chinese Poetry I: *Shi jing* and Related Texts.** Readings/discussion, three hours. Centered on a philological and literary-critical reading of the Zhou dynasty collection, *The Book of Odes (Shi jing)*, examination of role of poetry in Zhou culture, interrelationships of poetry, music, and ritual, and problems of textual transmission and interpretation. Mr. Saussy

**212. Chinese Poetry II: Han to Six Dynasties.** Readings/discussion, three hours. Readings from major genres and authors between end of Qin dynasty in 207 B.C. and founding of Sui dynasty in A.D. 589 (main text to be the anthology *Wen xuan* compiled ca. 531). Genres include *Fu*, *Yuefu*, and *Shi* poetry, as well as a sampling of historical and philosophical theoretical texts. Authors include Song Yu, Sima Xiangru, Zuo Si, Ban Gu, Cao Zhi, Lu Ji, Tao Yuanming, and Xie Lingyun. Mr. Saussy

**230A-230B. Seminars: Selected Topics in Modern Chinese Literature.** Seminar, three hours. Prerequisite: consent of instructor. Selected readings in 20th-century Chinese literature, emphasizing fiction. Discussion of individual research projects. May be repeated for credit. In Progress grading. Mr. L. Lee

**245A-245B. Seminars: Traditional Chinese Narrative and Drama.** Seminar, three hours. Prerequisite: reading knowledge of colloquial and literary Chinese. Seminar topics alternate yearly between traditional narrative and drama, with emphasis on generic, hermeneutical, and historical approaches. Topics in narrative selected from genres from Chou through Ch'ing periods. Topics in drama selected from *tsa-chü* and *ch'uan-ch'i*. May be repeated for credit with consent of instructor. In Progress grading. Mr. Strassberg

**265A-265B. Seminars: Chinese Buddhist Texts.** Seminar, three hours. May be repeated for credit with consent of instructor. In Progress grading. Mr. Buswell

**290A-290B. Seminars: Selected Topics in Chinese Archaeology.** Seminar, three hours. Prerequisite: course 190 or consent of instructor. Discussion and research on major problems about Chinese archaeology and different interpretations to the most important archaeological finds, with emphasis on studies of the Xia and Shang cultures and Xia and Shang dynasties. May be repeated for credit. In Progress grading. Mr. Chou

**295A-295B. Seminars: Selected Topics in Chinese Cultural History.** Seminar, three hours. Prerequisite: consent of instructor. Discussion and research on major problems related to Chinese culture, such as beginnings of the Chinese civilization and Chinese dynastic history. Other topics include cultural developments of ancient and medieval China. May be repeated for credit. In Progress grading. Mr. Chou

## East Asian Languages and Cultures

### Lower Division Course

**60. Introduction to Buddhism.** Lecture, three hours; discussion, one hour. Knowledge of Asian languages not required. General survey of development of Buddhism in India, focusing on those religious doctrines and meditative practices most essential to various Asian traditions of the religion. Mr. Bodiford, Mr. Buswell

**61. Introduction to Zen Buddhism.** Lecture, three hours; discussion, one hour. Knowledge of Asian languages not required. Introduction to Zen traditions and to interplay between Zen and other fundamental cultural and religious concerns in East Asia. Topics include role of Zen within Buddhist thought and practice, artistic and literary arts, society, and daily life. Mr. Bodiford

**88. Cross-Cultural Understanding in the Pacific Rim: Case Study of U.S., Japan, and Thailand.** Seminar, three hours. Development of skills to analyze intercultural communications through readings, discussions, lectures, interviews, and films, with focus on three countries of the Pacific Rim region — U.S., Japan, and Thailand. Mr. Iwasaki

### Upper Division Courses

**161. Buddhist Literature in Translation.** Readings, three hours. Prerequisite: prior course on Buddhism or traditional Asian religions. Readings from variety of Buddhist literature of Indic and non-Indic origin, with emphasis on key Buddhist themes and critical issues in cross-cultural interpretations of Asian religious texts. Mr. Bodiford, Mr. Buswell

**162. Buddhist Meditation Traditions.** Lecture, three hours. Knowledge of Asian languages not required. Survey of theory and practice of meditation in Buddhism, with emphasis on Theravada and Zen schools. Topics include various typologies of meditation, symbiotic relationship between meditation and soteriology, and processes by which doctrinal innovation prompts changes in meditative praxis. Mr. Buswell

**199. Special Studies in East Asian Languages and Cultures (2 to 4 units).** Prerequisites: senior standing in department or advanced reading knowledge of Chinese or Japanese, consent of instructor. Required of senior majors. Special individual studies. May be repeated once with consent of instructor.

## Graduate Courses

**230A-230B. Seminars: Theoretical Topics in East Asian Literature.** Seminar, three hours. Prerequisite: reading knowledge of at least one East Asian language. Concerns of literary theory which are brought to the fore by reading of literature from or about East Asia. Readings from both Western and Eastern theorists; issues of translation, comparison, and categorization. In Progress grading. Mr. Saussy

**240A-240B. Seminars: Topics in East Asian Literary History.** Seminar, three hours. Prerequisite: reading knowledge of at least one East Asian language. Critical issues common to literary historiography in East Asia, including periodization, canon, ideology, interaction between high and low culture, the written and the oral, etc. In Progress grading. Mr. P. Lee

**245A-245B. Seminars: Position of Modernity in East Asian Literature.** Seminar, three hours. Prerequisites: graduate standing, at least five years of an East Asian language. Course 245A concerned with conceptual architecture and archaeology of modernity, with readings largely from European sources. In-class debate probes relevance of these readings for work as Asianists. Focus on Asian writings in course 245B. In Progress grading. Mr. L. Lee, Mr. Saussy

**265A-265B. Seminars: Selected Topics in Buddhist Studies.** Seminar, three hours. Coverage varies. May be repeated for credit. In Progress grading. Mr. Bodiford, Mr. Buswell

**299. Independent Study (2 to 6 units).** (Formerly numbered 299A-299B.) Prerequisite: graduate standing. Guided research and writing of a research paper. May be repeated, but only four units may be applied toward M.A. degree. May not be applied toward Ph.D. degree. S/U or letter grading. Mr. P. Lee (F,W,Sp)

**301. Teaching an East Asian Language as a Foreign Language.**

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Studies (2 to 4 units).** S/U grading.

**597. Preparation for M.A. Comprehensive Examination or Ph.D. Qualifying Examinations (4 to 8 units).** S/U grading.

**598. Research for and Preparation of M.A. Thesis (4 to 8 units).** Prerequisite: consent of instructor. Maximum of eight units may be applied toward M.A. degree requirements. S/U grading.

**599. Research for and Preparation of Ph.D. Dissertation (4 to 8 units).** S/U grading.

## Indic

### Upper Division Courses

**110A. Elementary Sanskrit.** Lecture, three hours. Introduction to script and grammar, with reading exercises and attention to significance of Sanskrit for the understanding of other Indo-European languages. Mr. Scharfe

**110B. Intermediate Sanskrit.** Lecture, three hours. Prerequisite: course 110A or equivalent. Advanced aspects of grammar and reading of literary texts. Mr. Scharfe

**110C. Advanced Sanskrit.** Lecture, three hours. Prerequisite: course 110B or equivalent. Reading of entire *Bhagavadgita* or comparable amount of other Sanskrit literature. Mr. Scharfe

**115. Readings in Sanskrit.** Lecture, three hours. Prerequisite: course 110C or equivalent. Extensive reading in such texts as best serve students' needs. Mr. Scharfe

**175. Introduction to Indic Philosophy.** Lecture, three hours. Survey of main trends in Indian philosophy from ancient to modern times. Mr. Scharfe

## Graduate Courses

**M222A-M222B. Vedic.** (Same as Iranian M222A-M222B.) Lecture, three hours. Prerequisite: knowledge of Sanskrit equivalent to course 110C. Characteristics of Vedic dialect and readings in Rig-Vedic hymns. Only course M222B may be repeated for credit.

Mr. Schmidt

**230. Selected Readings in Sanskrit Texts.** (Formerly numbered 230A-230B.) Lecture, three hours. May be repeated for credit with consent of instructor. S/U or letter grading.

Mr. Scharfe

**234A-234B. Introduction to Panini's Grammar.** Lecture, three hours. Prerequisite: course 110C or equivalent. Reading of selected passages of the text, with introduction to Panini's technique. S/U or letter grading.

Mr. Scharfe

**236A-236B. Pali and Prakrits.** Lecture, three hours. Prerequisites: knowledge of Sanskrit equivalent to course 110B, consent of instructor. Grammatical studies and reading of texts. Comparative considerations. S/U or letter grading. **236A.** Pali; **236B.** Prakrits.

Mr. Scharfe

## Japanese

### Lower Division Courses

No credit is allowed for completing a less advanced course after successful completion of a more advanced course in grammar and/or composition.

**1. Elementary Modern Japanese.** Lecture, two hours; discussion, three hours. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Introduction to modern Japanese with attention to conversation, grammar, and written forms. Conversation drill based on material covered in class.

Ms. Akatsuka, Mr. Iwasaki

**2. Elementary Modern Japanese.** Lecture, two hours; discussion, three hours. Continuation of course 1.

Ms. Akatsuka, Mr. Iwasaki

**3. Elementary Modern Japanese.** Lecture, two hours; discussion, three hours. Continuation of course 2.

Ms. Akatsuka, Mr. Iwasaki

**4. Intermediate Modern Japanese.** Lecture, three hours; discussion, two hours. Prerequisite: course 3. Continuation of course 3. Readings in modern Japanese, with emphasis on comprehension and structural analysis.

**5. Intermediate Modern Japanese.** Lecture, three hours; discussion, two hours. Prerequisite: course 3. Continuation of course 4.

**6. Intermediate Modern Japanese.** Lecture, three hours; discussion, two hours. Prerequisite: course 3. Continuation of course 5.

**50. Japanese Civilization.** Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Knowledge of Japanese not required. Survey of development of Japanese culture and its relationship to the Asiatic mainland.

Mr. Plutschow

**88. Personalities in Japanese Civilization.** Seminar, three hours. Introduction to Japanese civilization through study of important personalities.

Mr. Plutschow

**90. Japanese Aesthetics and Tea Ceremony.** Lecture, three hours. Prerequisite: consent of instructor. Introduction to Japanese aesthetics in theory and practice, including study of ritual and specific trends in Japanese aesthetics such as imperfection asymmetry, suggestion, minaturization, indirectness, *wabi*, *sabi*, *hie-kare*, *yugen*, especially as reflected and practiced in the tea ceremony.

Mr. Plutschow

## Upper Division Courses

**100A-100B-100C. Advanced Modern Japanese.** Lecture, two hours; discussion, three hours (100A-100B) and one hour (100C). Prerequisite: course 6. Emphasis on comprehension, structure, and proficiency in reading, composition, and conversation in modern Japanese.

**101A-101B. Advanced Readings in Modern Japanese.** Lecture, two hours; discussion, 90 minutes. Prerequisite: course 100C. Advanced readings and discussion for students planning to do advanced coursework or research on Japan. Topics selected from magazines, journals, and books related to humanities and social sciences.

Ms. Pincus

**120. Introduction to Japanese Linguistics.** (Not the same as course CM120 prior to Fall Quarter 1990.) Lecture, three hours. Prerequisite: course 3 or equivalent. Introduction to Japanese grammar and sociolinguistics through reading, discussion, and problem solving in phonology, syntax, semantics, and discourse pragmatics.

Ms. Akatsuka, Mr. Iwasaki

**CM122. Structure of Japanese I.** (Formerly numbered CM120.) (Same as Linguistics M176A.) Lecture, three hours. Prerequisites: course 120 or equivalent or consent of instructor, two years of Japanese. Discussion of many seemingly idiosyncratic characteristics of Japanese syntax and semantics in light of word-order typology and universal grammar, often in form of a contrastive analysis of Japanese and English. Concurrently scheduled with course C222.

Ms. Akatsuka

**CM123. Structure of Japanese II.** (Same as Linguistics M176B.) Lecture, three hours. Prerequisite: two or more years of Japanese language study or consent of instructor. Survey of Japanese language at three different levels of organization: (1) word level — word class, verbal morphology and semantics; (2) clause/sentence level — tense, aspect, modality; (3) discourse level — point of view, ellipsis, topicalization. Concurrently scheduled with course C223.

Mr. Iwasaki

**CM127. Contrastive Analysis of Japanese and Korean.** (Same as Korean CM127 and Linguistics M178.) Lecture, three hours. Prerequisites: two years of Japanese or Korean, one introductory linguistics course. Critical reading and discussion of selected current research papers in syntax, pragmatics, discourse, and sociolinguistics from perspective of contrastive study of Japanese and Korean. May be repeated for credit with consent of instructor. Concurrently scheduled with course CM227.

Ms. Akatsuka, Ms. Sohn

**130A-130B-130C. Readings in Modern Japanese Literature.** (Formerly numbered 130, 131, 133.) Readings/discussion, three hours. Prerequisite: course 6. Readings and discussion of works by modern Japanese writers.

**140A-140B-140C. Readings in Classical Japanese Literature.** (Formerly numbered 140, 141, 142.) Readings/discussion, three hours. Prerequisite: course 100C or consent of instructor. Readings and discussion of works of classical Japanese literature. **140A.** Heian; **140B.** Medieval; **140C.** Edo.

**149. Introduction to Kambun and Other Literary Styles.** Lecture, three hours. Prerequisite: course 140A or 140B or consent of instructor. Introduction to Kambun, the Japanese literary rendering of classical Chinese, and Sorobun, the epistolary style.

Mr. Plutschow

**150. Japanese Literature in Translation: Classical.** Lecture, three hours; discussion, one hour. Prerequisite: English 3 or one course from Humanities 1A, 1B, 1C, 1D, 2A, 2B, 2C. Knowledge of Japanese not required. Survey of Japanese literature from the beginning to 1600, emphasizing Chinese, Buddhist, and Western influences.

Mr. Marra

**151. Japanese Literature in Translation: Modern.** Lecture, three hours; discussion, one hour. Prerequisite: English 3 or one course from Humanities 1A, 1B, 1C, 1D, 2A, 2B, 2C. Knowledge of Japanese not required. Survey of Japanese literature from the 16th century to post-World War II.

Ms. Pincus

**160. Japanese Buddhism.** Lecture, three hours. Knowledge of Asian languages not required. Development of Buddhism in Japan in its cultural context, with emphasis on key ideas and teachings.

Mr. Bodiford

**161. Religious Life in Modern Japan.** Lecture, three hours. Religious transformations accompanying rapid industrialization, urbanization, militarism, and defeat in the Pacific War, including analyses of Shinto mythology, secular positivism, Buddhist reform movements, new religions, and continuing role of traditional village/family religious rites.

Mr. Bodiford (W)

**165. Introduction to Japanese Buddhist Texts.** Lecture, three hours. Prerequisite: course 140B or 149 or Chinese 165 or consent of instructor. Readings in Buddhist texts written by Japanese in literary Chinese, Kambun, and mixed Japanese/Chinese literary styles concerning textual commentaries, doctrinal treatises, hagiographies, temple histories, etc. Coverage varies. May be repeated for credit with consent of instructor.

Mr. Bodiford

**175. Introduction to Japanese Thought.** Lecture, three hours. Knowledge of Asian languages not required. General survey of Japanese thought from early to modern times, including analyses of Shinto mythology, forms of Confucianism, ethic of bushido, National Learning School, and modern Japanese philosophers such as Nishida Kitaro and Watsuji Tetsuro. Attention also to representative types of contemporary thinking about Japanese thought, especially the question of what might qualify as recognizably "Japanese" in aesthetics, ethics, and philosophy.

**M182. Japanese Folklore.** (Same as Folklore M182.) Lecture, three hours. Knowledge of Japanese not required. Lectures/discussions on native religious rituals (festivals) and observances of the Japanese, with special emphasis on artistic behavior. Discussion of Shinto, Shinto/Buddhist syncretism, and other non-Buddhist belief systems found in Japan.

Mr. Plutschow

**M196. Seminar: Comparative Japanese Law — Selected Readings (2 units).** (Same as Law M519.) Designed to introduce students to a variety of Japanese-language legal materials. Reading of law review articles and other sources as time permits (e.g., selections from contracts, cases, or treatises); titles vary from term to term. Classroom work may be coordinated with outside research projects with consent of instructor.

## Graduate Courses

**200. Bibliography and Methods of Research in Japanese.** Lecture, three hours. Required of all graduate students in Japanese.

**210. Issues in Modern Japanese Literature.** Lecture, three hours. Introduction to issues in the field of modern Japanese literature, with readings in primary and secondary sources. Topics vary.

Ms. Pincus

**211. No and Kyogen.** (Formerly numbered 243A-243B.) Lecture, three hours. Prerequisite: one year of classical Japanese. Readings of selected No and Kyogen texts from Muromachi and Edo periods, as well as readings of critical writings and discussion of theories. May be repeated for credit with consent of instructor.

Mr. Plutschow

**212. Kyoto through Classical Japanese Literature.** (Formerly numbered 290.) Discussion, three hours. Prerequisite: knowledge of Japanese. Investigation of history and life of the city as seen through Japanese literature.

Mr. Plutschow

**C222. Structure of Japanese I.** (Formerly numbered C220.) Lecture, three hours. Prerequisites: course 120 or equivalent or consent of instructor, two years of Japanese. Discussion of many seemingly idiosyncratic characteristics of Japanese syntax and semantics in light of word-order typology and universal grammar, often in form of a contrastive analysis of Japanese and English. Concurrently scheduled with course CM122.

Ms. Akatsuka

**2223. Structure of Japanese II.** Lecture, three hours. Prerequisite: two or more years of Japanese language study or consent of instructor. Survey of Japanese language at three different levels of organization: (1) word level — word class, verbal morphology and semantics; (2) clause/sentence level — tense, aspect, modality; (3) discourse level — point of view, ellipsis, topicalization. Concurrently scheduled with course CM123. Mr. Iwasaki

**224A-224B. Seminars: Selected Topics in Japanese Discourse Linguistics.** Seminar, three hours. Prerequisite: course CM122 or equivalent. Critical reading and discussion of selected topics in Japanese discourse linguistics. May be repeated for credit with consent of instructor. In Progress grading.

Ms. Akatsuka, Mr. Iwasaki

**225A-225B. Seminars: Linguistic Analysis of Japanese Narratives.** Seminar, three hours. Prerequisite: course CM122 or consent of instructor. Analysis of selected modern and classical Japanese narratives. Emphasis on exploration of how grammatical features such as tense, aspect, voice, and point of view are utilized to achieve desired literary effects. May be repeated for credit with consent of instructor. In Progress grading.

Ms. Akatsuka

**226. Survey of Functional Linguistics.** (Formerly numbered 226A-226B.) Lecture, three hours. Survey of recent empirical and theoretical research in several areas of functional linguistics, which has served as backbone for development of Japanese discourse linguistics. May be repeated for credit with consent of instructor.

Ms. Akatsuka

**CM227. Contrastive Analysis of Japanese and Korean.** (Same as Korean CM227.) Lecture, three hours. Prerequisites: two years of Japanese or Korean, one introductory linguistics course. Critical reading and discussion of selected current research papers in syntax, pragmatics, discourse, and sociolinguistics from perspective of contrastive study of Japanese and Korean. May be repeated for credit with consent of instructor. Concurrently scheduled with course CM127.

Ms. Akatsuka, Ms. Sohn

**228. Fundamentals in Discourse Data Analysis.** Lecture, three hours. Designed to prepare students to conduct research in natural discourse data, both spoken and written, for linguistic analysis. Discussion of discourse taxonomy, data collection methodologies, data organization, analytical frameworks.

Ms. Akatsuka, Mr. Iwasaki

**235A-235B. Seminars: Selected Topics in Modern Japanese Fiction.** Seminar, three hours. May be repeated for credit with consent of instructor. In Progress grading.

Ms. Pincus

**240A-240B. Seminars: Selected Topics in Japanese Literature.** Seminar, three hours. May be repeated for credit. In Progress grading.

**241A-241B. Seminars: Japanese Classics.** Seminar, three hours. Prose and poetry from early times to 1868. May be repeated for credit with consent of instructor. In Progress grading.

**245A-245B. Seminars: Medieval Japanese Literature.** Seminar, three hours. Prerequisite: one year of classical Japanese. Selected readings in travel poetry, travel diaries, and other genres of Japanese travel literature of Heian, Kamakura, Nambokucho, and Muromachi periods. May be repeated for credit with consent of instructor. In Progress grading.

Mr. Plutschow

**265A-265B. Seminars: Japanese Buddhist Texts.** Seminar, three hours. May be repeated for credit with consent of instructor. In Progress grading.

Mr. Bodiford

**M270A-M270B. Seminars: Japanese Ritual Arts.** (Same as Folklore M270A-M270B.) Seminar, three hours. Reading knowledge of Japanese not required. Discussions and readings on ritual (performing) arts of Japan comprising music, dance, storytelling, viewing, purification, divination, disguise, mimicry, and competitive as well as acrobatic arts, with special emphasis on religio-magical purposes and symbolic structure of these arts. In Progress grading.

Mr. Plutschow

## Korean

### Lower Division Courses

No credit is allowed for completing a less advanced course after successful completion of a more advanced course in grammar and/or composition.

**1. Elementary Modern Korean.** Lecture, two hours; discussion, three hours. Not open to students who, from whatever source, already know the language. Introduction to standard spoken Korean and Korean writing, with emphasis on conversation.

Ms. Sohn

**2. Elementary Modern Korean.** Lecture, two hours; discussion, three hours. Continuation of course 1.

Ms. Sohn

**3. Elementary Modern Korean.** Lecture, two hours; discussion, three hours. Continuation of course 2.

Ms. Sohn

**4. Intermediate Modern Korean.** Lecture, two hours; discussion, three hours. Prerequisite: course 3 or equivalent. Continuation of course 3. Conversation, composition, and readings with structural analysis in modern Korean.

Ms. Sohn

**5. Intermediate Modern Korean.** Lecture, two hours; discussion, three hours. Prerequisite: course 3 or equivalent. Continuation of course 4.

Ms. Sohn

**6. Intermediate Modern Korean.** Lecture, two hours; discussion, three hours. Prerequisite: course 3 or equivalent. Continuation of course 5.

Ms. Sohn

**50. Korean Civilization.** Lecture, three hours; discussion, one hour. Knowledge of Korean not required. General survey of development of Korean culture within context of political, social, and economic history.

Mr. Duncan

### Upper Division Courses

**100A-100B-100C. Advanced Modern Korean.** Lecture, three hours. Prerequisite: course 6 or equivalent. Course 100A or consent of instructor is prerequisite to 100B, which is prerequisite to 100C. Continuation of course 6. Readings of modern prose and poetry, with emphasis on grammar and Sino-Korean.

**101A-101B-101C. Advanced Readings in Modern Korean.** Lecture, three hours. Prerequisite: course 100C or equivalent. Advanced readings and discussion for students planning to do advanced coursework or research on Korea. Topics selected from magazines, journals, and books related to humanities and social sciences.

**CM120. Structure of Korean.** (Same as Linguistics M177.) Lecture, three hours. Prerequisites: two years of Korean, or one year of Korean and some knowledge of linguistics. Discussion of major syntactic, semantic, and pragmatic characteristics of Korean in light of linguistic universals, with brief introduction to formation, typological features, and phonological structure of Korean. Concurrently scheduled with course C220.

Ms. Sohn

**CM127. Contrastive Analysis of Japanese and Korean.** (Same as Japanese CM127 and Linguistics M178.) Lecture, three hours. Prerequisites: two years of Japanese or Korean, one introductory linguistics course. Critical reading and discussion of selected current research papers in syntax, pragmatics, discourse, and sociolinguistics from perspective of contrastive study of Japanese and Korean. May be repeated for credit with consent of instructor. Concurrently scheduled with course CM227.

Ms. Akatsuka, Ms. Sohn

**130A-130B. Readings in Modern Korean Literature.** Readings/discussion, three hours. Prerequisite: course 101A or consent of instructor. Readings and discussion of major modern Korean literary texts.

Mr. P. Lee (W,Sp)

**150. Korean Literature in Translation: Classical.** Lecture, three hours. Prerequisite: English 3 or one course from Humanities 1A, 1B, 1C, 1D, 2A, 2B, 2C. Knowledge of Korean not required. Survey of Korean literature from the beginning to the present day, with all readings from English translations. Poetry and prose to the end of the 19th century.

Mr. P. Lee

**151. Korean Literature in Translation: Modern.** Lecture, three hours. Prerequisite: English 3 or one course from Humanities 1A, 1B, 1C, 1D, 2A, 2B, 2C. Knowledge of Korean not required. Survey of Korean literature from the beginning to the present day, with all readings from English translations. Literature of the 20th century.

Mr. P. Lee

**160. Korean Buddhism.** Lecture, three hours. Knowledge of Asian languages not required. Introduction and development of Buddhism in Korea, interactions between indigenous Korean culture and Sinitic traditions of Buddhism, Korean syntheses of imported Buddhist theological systems and meditative techniques, and independent Son (Zen) schools of Korea.

Mr. Buswell

**165. Introduction to Korean Buddhist Texts.** Lecture, three hours. Prerequisites: course 100A and/or Chinese 110C. Introduction to reading Korean Buddhist texts written in Sino-Korean and taken from indigenous doxographic materials and philosophical writings, Korean Buddhist apocryphal scriptures, native exegetical commentaries, and Son (Zen) texts. Coverage varies. Texts may be read in either Sino-Korean or literary Chinese. May be repeated with consent of instructor.

Mr. Buswell

**175. Introduction to Korean Thought.** Lecture, three hours; discussion, one hour. General survey of Korean thought from the earliest records to the 20th century, including shamanism, Taoism, Buddhism, Christianity, and neo-Confucianism. Korean traditions and those found in India, China, Japan, and the West.

Mr. Duncan

**176. Introduction to Korean Confucian Texts.** Lecture, three hours. Prerequisite: course 100C or equivalent. Reading in Koryo and Choson texts on politics, society, and culture. Coverage varies. Texts may be read in either Sino-Korean or literary Chinese. May be repeated with consent of instructor.

Mr. Duncan

**180A-180B-180C. Cultural History of Korea.** Lecture, three hours; discussion, one hour. Prerequisite: course 50. Examination of evolution of Korean culture and society within context of political and institutional industry. Consideration of both higher and popular culture. **180A.** Through 1259; **180B.** 1260 through 1876; **180C.** Since 1876.

Mr. Duncan

### Graduate Courses

**200. Bibliography and Methods of Research in Korean.** Lecture, three hours. Prerequisites: graduate standing, reading knowledge of Korean and Chinese. Review of basic Western and modern Korean reference books, with concentration on Korean literature and language, and survey of basic bibliographical material. In addition, introduction to most important primary sources in student's field of specialization.

Mr. P. Lee

**210. Thought and Society in Korea.** (Formerly numbered 290A-290B.) Readings/discussion, three hours. Prerequisites: graduate standing, reading knowledge of Korean. Readings in Korean intellectual history and its social, political, and economic background from the rise of neo-Confucianism in the 14th century to the 20th century.

Mr. Duncan (W,Sp)

**C220. Structure of Korean.** Lecture, three hours. Prerequisites: two years of Korean, or one year of Korean and some knowledge of linguistics. Linguistic analysis of Korean for those who concentrate on Korean language. Discussion of major syntactic, semantic, and pragmatic characteristics of Korean in light of linguistic universals. Concurrently scheduled with course CM120.

Ms. Sohn

**CM227. Contrastive Analysis of Japanese and Korean.** (Same as Japanese CM227.) Lecture, three hours. Prerequisites: two years of Japanese or Korean, one introductory linguistics course. Critical reading and discussion of selected current research papers in syntax, pragmatics, discourse, and sociolinguistics from perspective of contrastive study of Japanese and Korean. May be repeated for credit with consent of instructor. Concurrently scheduled with course CM127. Ms. Akatsuka, Ms. Sohn

**230A-230B. Seminars: Literary Translation from Korean.** Seminar, three hours. Prerequisite: reading knowledge of Korean. In consultation with instructor, students select works to be translated. Devoted to skill of producing accurate and readable translations, with emphasis on problems and techniques unique to poetry and prose. At end of term, students expected to produce publishable translations. May be repeated once with consent of instructor. In Progress grading. Mr. P. Lee

**235A-235B. Seminars: Topics in Modern Korean Literature.** Seminar, three hours. Prerequisite: graduate standing or at least five years of Korean. Recommended: reading knowledge of Chinese or Japanese. Study of a selected period, movement, theme, or author of 20th-century Korean literature, with critical review of secondary works in Western and Korean languages. May be repeated for credit with consent of instructor. In Progress grading. Mr. P. Lee

**240A-240B. Seminars: Classical Korean Fiction.** Seminar, three hours. Prerequisite: reading knowledge of Korean. Formal and thematic study of tales of the marvelous, romance, satirical stories, diaries, and *p'ansori* fiction. Status of fiction in society and culture, fiction as imaginative representation of the writer's relationship to real conditions of existence. Latest Western theory of narratology applied in analysis. In Progress grading. Mr. P. Lee

**245A-245B. Seminars: Classical Korean Poetry.** Seminar, three hours. Prerequisite: reading knowledge of Korean. Critical reading and analysis of classical Korean poetry, including discussion of literary and cultural contexts of poetic genres. Nature of codes, conventions that make meaning possible. Review of latest Korean scholarship. May be repeated once with consent of instructor. In Progress grading. Mr. P. Lee

**265A-265B. Seminars: Korean Buddhist Texts.** Seminar, three hours. Prerequisite: consent of instructor. Selected topics in Korean Buddhist texts. Coverage varies. In Progress grading. Mr. Buswell

**295A-295B. Seminars: Topics in Korean Cultural History.** Seminar, three hours. Prerequisite: reading knowledge of Korean or literary Chinese. Discussion and research on major topics in Korean cultural history, such as Confucianization of Korean society, Practical Learning movement of late Choson dynasty, or Korean reactions to the West in Eastern learning and enlightenment movements of the 19th century. May be repeated for credit. In Progress grading. Mr. Duncan

260A. Indian Art  
260B. Chinese Art  
260C. Japanese Art

**Education 253C.** Seminar: Asian Education

**English 95A.** Introduction to Poetry

140A. Criticism: History and Theory

140B. Criticism: Special Topics

201A. History of Literary Criticism

**Ethnomusicology and Systematic Musicology**

91D. Music of China

91G. Music of Japan

91J. Music of Korea

156A-156B. Music of China

157. History of Chinese Opera

158A-158B-158C. Studies in Chinese Instrumental Music

160A. Survey of Music in Japan

160B. Studies in Japanese Court Music

**Geography 186.** Contemporary China

286. Eastern Asia

**History 182A-182B.** Thought and Society in China

183A-183B. Society and Economy in China

184. 20th-Century China

187A-187B-187C. Japanese History

188A. Early History of India

200L. Advanced Historiography: China

200M. Advanced Historiography: Japan

200P. Advanced Historiography: History of Religions

201L. Topics in History: China

201M. Topics in History: Japan

201P. Topics in History: History of Religions

282A-282B. Seminars: Chinese History

285A-285B. Seminars: Modern Japanese History

293A-293B. Seminars: History of Religions

**Law 278.** Comparative Law: Japanese Law and Society

**Linguistics 103.** Introduction to General Phonetics

120A. Phonology I

120B. Syntax I

220. Linguistic Areas

225H. Linguistic Structures: Japanese

225P. Linguistic Structures: Chinese

**Political Science 135.** International Relations of China

136. International Relations of Japan

159. Chinese Government and Politics

160. Japanese Government and Politics

C242. Chinese and East Asian Studies

C243. Japanese and Western Pacific Studies

**Sociology 188.** Comparative Social Institutions of East Asia

276. Selected Topics in Sociology of East Asia

Donald F. McCallum, Ph.D. (*Art History*)

Fred G. Notehelfer, Ph.D. (*History*)

Herman Ooms, Ph.D. (*History*)

Herbert E. Plutschow, Ph.D. (*East Asian Languages and Cultures*), *Administrative Director*

Richard E. Strassberg, Ph.D. (*East Asian Languages and Cultures*)

#### Associate Professors

Miriam Silverberg, Ph.D. (*History*)

Richard von Glahn, Ph.D. (*History*)

#### Assistant Professors

John B. Duncan, Ph.D. (*East Asian Languages and Cultures*)

Leslie Pincus, Ph.D. (*East Asian Languages and Cultures*)

#### Lecturers

Danny Lee (*Ethnomusicology and Systematic Musicology*)

Ikuko Yuge, B.A. (*Ethnomusicology and Systematic Musicology*)

Tsun Y. Lui, *Emeritus* (*Ethnomusicology and Systematic Musicology*)

Suenobu Togi, *Senior Emeritus* (*Ethnomusicology and Systematic Musicology*)

## Scope and Objectives

This undergraduate major is an area studies program of the East Asian region which is divided into three areas of concentration — China, Japan, and Korea. It offers a social science approach, combined with language study and work in the humanities.

## Bachelor of Arts Degree

Two years of language and a total of 13 upper division courses, including courses in the social sciences, culture, and language, must be taken for graduation. You must take a minimum of nine courses in the area of your choice. The remainder must be taken in another area of concentration within the major. No more than eight courses may be from a single department. You should select the courses from the lists below. Courses on East Asia not listed below, offered only on a temporary basis, may also be applied toward the major. At the discretion of the adviser, you may be advised to take theory classes applicable to the major requirements.

### China Concentration

**Preparation for the Major:** Chinese 1, 2, 3, 4, 5, 6, History 11A-11B, Sociology 1.

**The Major:** A minimum of nine courses selected from Anthropology 175T\*, Art History C115B, C115D, C115E, C115F, Chinese 150, 151, 160, 175, 190, and up to three upper division language courses or equivalent, Economics 190\*, 191\*, 192\*, Ethnomusicology and Systematic Musicology 156A, 156B, 157, 158A, 158B, 158C, Geography 186, History 182A, 182B, 183A, 183B, 184, Political Science 135, 159, Sociology 188\*, and a 199 spe-

## Related Courses in Other Departments

**Art History 114A.** Early Art of India

114C. Japanese Art

114D. Later Art of India

114E. Arts of Korea

114F. Arts of Southeast Asia

C115A. Advanced Indian Art

C115B. Advanced Chinese Art

C115C. Advanced Japanese Art

C115D. Art of Early China, Neolithic to A.D. 906

C115E. Chinese Art of Sung and Yuan Dynasties, 906-1368

C115F. Chinese Art from Ming Dynasty to the People's Republic, 1368 to the Present

## East Asian Studies (Interdepartmental)

290 Royce Hall, (310) 206-8235

#### Professors

Francesca Bray, Ph.D. (*Anthropology*)

Robert E. Buswell, Ph.D. (*East Asian Languages and Cultures*)

Lucie C. Cheng, Ph.D. (*Sociology*)

Benjamin A. Elman, Ph.D. (*History*)

Philip C. Huang, Ph.D. (*History*)

Peter H. Lee, Ph.D. (*East Asian Languages and Cultures*)

\*Courses on East Asia in general.



cial studies course in Chinese or in any social sciences or humanities department.

### Japan Concentration

**Preparation for the Major:** History 9C, Japanese 1, 2, 3, 4, 5, 6, Sociology 1.

**The Major:** A minimum of nine courses selected from Anthropology 175T\*, Art History 114C, C115C, Economics 190\*, 191\*, 192\*, Ethnomusicology and Systematic Musicology 160A, 160B, History 185, 186, 187A, 187B, 187C, Japanese 150, 151, 160, 175, M182, and up to three upper division language courses or equivalent, Political Science 136, 160, Sociology 188\*, 189, Theater 102A, and a 199 special studies course in Japanese or in any social sciences or humanities department.

### Korea Concentration

**Preparation for the Major:** Korean 1, 2, 3, 4, 5, 6, 50, Sociology 1.

**The Major:** A minimum of nine courses selected from Anthropology 175T\*, Art History 114E, East Asian Languages and Cultures 162, Economics 190\*, 191\*, 192\*, Korean 150, 151, 160, 175, 180A, 180B, 180C, and three upper division language courses or equivalent, Sociology 188\*, Theater 102E\*, and a 199 special studies course in Korean or in any social sciences or humanities department.

## Economics

2263 Bunche Hall, (310) 825-1011

### Professors

Costas Azariadis, Ph.D.  
 Harold Demsetz, Ph.D. (*Arthur Andersen and Company Alumni Professor of Business Economics*)  
 Sebastian Edwards, Ph.D. (*Henry Ford II Professor of International Management*)  
 Bryan C. Ellickson, Ph.D. (*Distinguished Teaching Award*)  
 Roger E. Farmer, Ph.D.  
 Arnold C. Harberger, Ph.D.  
 Michael D. Intriligator, Ph.D.  
 Benjamin Klein, Ph.D.  
 Deepak K. Lal, D.Phil. (*James S. Coleman Professor of International Development Studies*)  
 Edward E. Leamer, Ph.D. (*Chauncey J. Medberry Professor of Management*)  
 Axel Leijonhufvud, Ph.D.  
 David K. Levine, Ph.D.  
 John J. McCall, Ph.D.  
 Joseph M. Ostroy, Ph.D.  
 M. Hashem Pesaran, Ph.D.  
 John G. Riley, Ph.D.  
 Lloyd S. Shapley, Ph.D.  
 Kenneth L. Sokoloff, Ph.D.  
 Earl A. Thompson, Ph.D.  
 Finis R. Welch, Ph.D.  
 William R. Zame, Ph.D.

### Professors Emeriti

Armen A. Alchian, Ph.D.  
 William R. Allen, Ph.D. (*Distinguished Teaching Award*)  
 Masanao Aoki, Ph.D.  
 John F. Barron, Ph.D. (*Distinguished Teaching Award*)  
 Robert W. Clower, D.Litt.  
 Paul A. Dodd, Ph.D., LL.D.  
 George W. Hilton, Ph.D.  
 Werner Z. Hirsch, Ph.D.  
 Jack Hirsleifer, Ph.D.  
 George G.S. Murphy, Ph.D.  
 Harold M. Somers, Ph.D., LL.B.

### Associate Professors

Trudy Cameron, Ph.D.  
 Janet Currie, Ph.D.  
 Gary D. Hansen, Ph.D.  
 Guido Tabellini, Ph.D.

### Assistant Professors

Michele Boldrin, Ph.D.  
 David A. Butz, Ph.D.  
 Andrew Dick, Ph.D.  
 Eric Engen, Ph.D.  
 Bruce Fallick, Ph.D.  
 William G. Gale, Ph.D.  
 Kathleen McGarry, Ph.D.  
 Seonghwan Oh, Ph.D.  
 Sule Ozler, Ph.D.  
 Simon Potter, Ph.D.  
 Jean-Laurent Rosenthal, Ph.D.  
 Keungwan Ryu, Ph.D.  
 Hilary Sigman, Ph.D.  
 Kazimierz Stanczak, Ph.D.  
 Federico Sturzenegger, Ph.D.  
 Mariano Tommasi, Ph.D.  
 Darrell Williams, Ph.D.

## Scope and Objectives

UCLA's Economics Department is ranked among the 10 best in the nation according to a recent survey conducted by the Conference Board of the Associated Research Councils. Its undergraduate program is designed for students who wish to gain a thorough understanding of economic analysis. Emphasis is on economic principles applied to resolving interpersonal conflicts of interest and coordinating productive activity in a world of scarce resources. Because students must gain a thorough theoretical and technical competence before extensive study of the applied specializations in the discipline, the analytic core of the major in economics is closely structured. Some courses are appropriate for nonmajors, but the curriculum is most suitable for students who wish to make the study of economics the primary focus in their undergraduate education.

The undergraduate major provides analytical training in reference to socioeconomic phenomena and provides an excellent theoretical background for those pursuing graduate education in law, management, public administration, journalism, social welfare, architecture and urban planning, and education, as well as economics.

The graduate program is designed primarily for students pursuing the Ph.D. degree. The doctorate is awarded to those students who have

achieved the level of study and training required for a professional economist. The degree recognizes students' ability to make scholarly contributions in their fields of specialization and to undertake advanced research in those areas. A Master of Arts program is also offered, which involves coursework and comprehensive examinations designed for the Ph.D. student.

## Bachelor of Arts in Economics

### Preeconomics Major

While you are completing the lower division preparation courses for the major, you may be classified as a preeconomics major. When you have completed the preparation courses for the major and before you reach 100 quarter units (but no later than 135 quarter units), you must petition to enter the major at the undergraduate counselor's office in 2253 Bunche Hall.

### Preparation for the Major

**Required:** English 4 or 100W or 129; Economics 1, 2, 11, 40 (or Statistics 50 as a substitute for course 40); Mathematics 31A, 31E. All courses must be taken for a letter grade. A 2.0 (C) grade is required in each premajor course, with a combined 2.5 GPA required in the economics and mathematics courses. You must petition for major standing by the time you attain 135 quarter units.

Repetition of more than one preparation course or of any preparation course more than once results in automatic denial of admission to the major. Transfer credit for any of the above is subject to department approval; consult the undergraduate counselor before enrolling in any courses for the major.

### The Major

**Required:** Nine upper division courses in economics which must include Economics 101, 102, and at least one course in three different fields in economics selected from the list below (all courses must be taken for a letter grade). Economics 100, 110, and 190 may not be included among the nine upper division courses. One or two of the nine courses may include Management 120A, 120B, 130A, 130B, and/or 133 (Learning Center courses or courses transferred from other institutions may not be applied toward this option).

A grade of C- or better is required in each of courses 101 and 102. In addition, you must have a 2.0 grade-point average in the upper division major courses. Transfer credit for any of the above is subject to department approval; consult the undergraduate counselor before enrolling in any courses for the major.

### Major Fields

Economic theory (courses 101, 102, 103A-103Z, 104, 105AH, 105BH, 107); economic

\*Courses on East Asia in general.

development (courses 111, 112); regional economics (courses 120, 121); public finance (courses 130, 133, M135, M136); statistics, mathematical economics, and econometrics (courses 141, 142, 143, 144, 145, 146, 147A, 147B); labor economics (courses 150, 151, 152); money and banking (courses 160, 161); government and industry (courses 170, 171, 172, 173, 174, 175, 176, 177); economic institutions (courses 180, 181A, 181B, 182, 183, 184); international economics (courses 191, 192).

## Bachelor of Arts in Business Economics

This program offers students a business orientation in their undergraduate studies and is designed to prepare students for careers in business and for graduate education in business, economics, and law. The program requires students to include specific courses offered by the department and the John E. Anderson Graduate School of Management (see "The Major").

### Admission

Students who did not qualify for admission to the major by the last day of Spring Quarter 1992 must follow the premajor and major requirements listed below.

Enrollment in the program is limited. Applications for admission are handled exclusively by the Department of Economics. To apply you must have completed at least 72 quarter units (but no more than 135 quarter units), one 12-unit term of residence in regular session at UCLA, and all courses listed under "Preparation for the Major." In addition, you must (1) be enrolled in UCLA regular session at the time of application, (2) have a 2.0 (C) minimum grade in each preparation course, and (3) have a 3.0 (B) overall average in all preparation courses except English.

Note: The requisite grade-point averages plus completion of the preparation for the major courses do not guarantee admission to the program. Admission is on a competitive basis, using the above qualifications as minimum standards for consideration.

### Prebusiness Economics Major

While you are completing the preparation courses for the major, you may be classified as a pre-business economics major. (Transfer students who wish to enter UCLA as prebusiness economics majors must meet the admission screening requirements. For information, contact the Office of Undergraduate Admissions and Relations with Schools.) When you have completed the required economics, mathematics, and management preparation courses and have at least 72 quarter units (but no more than 135 quarter units), you must petition to enter the major at the business economics counselor's office in 2250B Bunche Hall.

### Preparation for the Major

*Required:* Economics 1, 2, 11, 40 (or Statistics 50), 101; English 4 or 100W or 129; Management 1A-1B; Mathematics 31A, 31E. All courses must be taken for a letter grade.

Repetition of more than one preparation course or of any preparation course more than once results in automatic denial of admission to the major. Transfer credit for any of the above is subject to department approval; consult the business economics counselor before enrolling in any courses for the major.

### The Major

*Required:* Economics 102 and at least two courses from 104, 173, 174, 177, 184; four other upper division courses in economics in at least two different fields (no more than two may be taken in the government and industry field); four upper division courses from Management 108, 120A, 120B, 122, 123, 124, 127, 130A, 130B, 133, 140, 175. Transfer credit for any of the major courses is subject to department approval. In addition, some graduate courses from the Anderson Graduate School of Management may be applied toward the major with department consent prior to taking the courses. Consult the business economics counselor before enrolling in any courses for the major.

All upper division major courses must be taken for a letter grade. A grade of C- or better is required in each upper division major course (except for Economics 101 which is part of the premajor), and you must have a 2.0 GPA in the upper division major courses to graduate in this major.

## Bachelor of Arts in Economics/International Area Studies

This program is for students who wish to attain specialized knowledge of a particular geographical area in addition to the economics analysis provided by the major. It should be useful to those who plan careers in international business or government service. The department encourages participation in the University of California Education Abroad Program or other recognized international study programs. Experience in foreign firms or institutions would be an advantage but yields no academic unit credit toward the major.

### Admission

Students who did not qualify for admission to the major by the last day of Spring Quarter 1992 must follow the premajor and major requirements listed below.

Qualified students must submit written applications to the undergraduate counselor in 2253 Bunche Hall to be admitted. To apply you must have completed at least 72 quarter units, one 12-unit term of residence in regular session at UCLA, and all courses listed under

"Preparation for the Major" (except for the second year of your foreign language). In addition, you must be enrolled in UCLA regular session at the time of application. All courses must be completed for a letter grade. A minimum 2.0 (C) grade is required in each premajor course, with a combined 2.5 GPA in the economics and mathematics courses. Language course preparation need not be completed at the time of admission but must be completed before preparing the research paper required in Economics 193. Your program as a whole must be approved by the Economics Department faculty adviser before you are admitted to the major; you must apply before you reach 135 quarter units.

### Preeconomics/International Area Studies Major

While you are completing the preparation courses for the major, you may be classified as a pre-economics/international area studies major. When you have completed the required mathematics and economics preparation courses and at least the first year of foreign language, and have at least 72 quarter units (but no more than 135 quarter units), you must petition to enter the major at the undergraduate counselor's office.

### Preparation for the Major

*Required:* Economics 1, 2, 11, 40 (or Statistics 50), 101, 102; Mathematics 31A, 31E. You also must complete the sixth quarter course (or equivalent) of any modern foreign language spoken in the geographical area of your major concentration.

Repetition of more than one preparation course or of any preparation course more than once results in automatic denial of admission to the major. Transfer credit for any of the above is subject to department approval; consult the undergraduate counselor before enrolling in any courses for the major.

### The Major

*Required:* A total of 12 upper division courses selected from economics and the "Approved Noneconomics Courses" listed below for your concentration. Eight must be from economics, including Economics 191, 192, 193, and five courses from at least two different fields in economics (selected from the "Major Fields" listed under the regular economics major). Economics 101 and 102 (which are required for the premajor) cannot be used to satisfy this requirement. The four remaining upper division courses must be chosen from the approved courses listed below for your concentration and must include selections from at least two different departments. Economics 193 must be completed in your last year before graduation and includes the preparation of a research paper on the economy of the country or region of your specialization. Sources in the language of the region or country must be utilized. The noneconomics courses, the research paper,

and the language learned must show consistency of purpose.

One or two courses from Management 120A, 120B, 130A, 130B, 133 may be substituted for one or two of the economics electives (Learning Center courses or courses transferred from other institutions may not be applied toward this option).

To graduate in the major you must achieve a 2.0 GPA for both economics and noneconomics courses, with a grade of C– or better in each course.

### Concentrations for the Major

When you declare your major, you must also select a concentration that includes a geographical area where the foreign language you have taken is spoken, and you must complete four of the approved noneconomics courses listed, including courses from at least two different departments. You may not use courses that are not on your concentration list unless you have petitioned and received approval in advance. Consult the undergraduate counselor or in 2253 Bunche Hall regarding the petition process.

#### (1) *East Asia*

Languages: Chinese, Japanese, Korean  
Approved Noneconomics Courses: Anthropology 175P, 175T. Chinese 175, Geography 186, History 182A, 182B, 183A, 183B, 184, 185, 187A, 187B, 187C, 190A, 190B, Japanese 175, Korean 175, 180A, 180B, 180C, Political Science 135, 136, 159, 160, Sociology 153, 188, 189

#### (2) *Europe*

Languages: French, German, Italian, Portuguese, Spanish  
Approved Noneconomics Courses: French 130B, 132, Geography 183, German 100A, 100B, 100C, History 124A, 124B, 125A, 125C through 125F, 126A through 126E, 128A, 128B, 128C, 129A through 129D, 132A, 132B, 133A, 133B, 134A, 134B, 141A, 141B, 141C, 142A, 142B, Political Science 127A, 152, 153, 153A, 154, 155, 157

#### (3) *Latin America*

Languages: Portuguese, Spanish  
Approved Noneconomics Courses: Geography 181, 182A, 182B, History 165A, 166, 167A through 167D, 168, 171, 172, 173, 174, Political Science 130, 131, 163A, 163B, Sociology 186

#### (4) *Middle East*

Languages: Arabic, Hebrew, Iranian, Turkish  
Approved Noneconomics Courses: Geography 187, History 106C, 107B, 108A, 110B, 111B, Jewish Studies 142, Political Science 132A, 164, Sociology 187, Turkish Languages 180

#### (5) *Former Soviet Union*

Languages: Armenian, Russian  
Approved Noneconomics Courses: Geography 184, History 112A, 112B, 112C, 113, 124A, 124B, 131A through 131D, Political Science 128A, 128B, 156

#### (6) *Individual Concentration*

Language, geographical area, and noneconomics courses to be approved in advance by the economics/international area studies faculty adviser

## Specialization in Computing

Majors in economics, business economics, and economics/international area studies may select a specialization in computing by (1) satisfying all the requirements for a bachelor's degree in the specified major, (2) completing Program in Computing 10A, 10B, Mathematics 61, and two courses from Program in Computing 10C, 30, 60, and (3) completing at least two courses from Economics 104, 143, 144, 145, 146, 147A, 147B, 199, with the additional provision that the courses taken must make substantial use of computers. A grade of C– or better is required in each course, with a combined GPA of at least 2.0. You graduate with a bachelor's degree in your major and a specialization in computing.

## Bachelor of Science in Economics/System Science

The degree is described following the Economics Department courses.

### Honors Program

The departmental honors program is open to majors in economics, business economics, economics/international area studies, and economics/system science who have an overall 3.5 grade-point average.

To qualify for departmental honors at graduation, you must (1) select at least seven of the required upper division economics courses from the approved list designated for departmental honors, (2) complete a senior thesis acceptable to the departmental honors committee, (3) present your thesis in Economics 195H, and (4) complete your major requirements with at least a 3.5 GPA in the economics courses. Highest honors are awarded at the discretion of the departmental honors committee based on grade-point average and quality of the senior thesis.

Economics 195H and 199, the courses used for thesis preparation, may be counted as upper division courses toward the field in which the thesis is written (for purposes of satisfying the requirements for the major). Further information and application forms are available from the undergraduate counselor in 2253 Bunche Hall.

## Graduate Study

### Admission

Applicants for graduate study who satisfy the University minimum requirements are eligible to apply. It is strongly recommended that you have undergraduate training in economics, mathematics, and statistics. You must also submit a full record of prior university experience, three letters of reference, and your scores in the Graduate Record Examination (GRE) General Test and the Subject Test in Economics. International applicants must also submit scores for the Test of English as a Foreign Language (TOEFL).

The Department of Economics (2263 Bunche Hall, UCLA, Los Angeles, CA 90024-1477) admits students only for Fall Quarter of each academic year. The deadline for submitting the admission/fellowship application is December 15.

### Major Fields or Subdisciplines

Economic theory; econometrics; information and uncertainty; mathematical economics; monetary theory; economic history; public finance; labor economics; industrial organization; international economics; development economics.

## Master of Arts Degree

### Course Requirements

The department requires nine upper division and graduate-level courses in economics completed in graduate standing at UCLA. At least five of the nine courses must be graduate-level courses in the department, one of which must be either Economics 207 or 241 or 242. Each course must be completed with a grade of B or better.

With prior consent of the vice chair for graduate affairs, you may offer a maximum of two courses from outside the department; however, you must still take five graduate economics courses.

Four units of course 596 may be applied toward the total course requirement and the minimum graduate course requirement with prior consent of the vice chair for graduate affairs.

### Comprehensive Examination Plan

The comprehensive examination requirement for the master's degree consists of passing two examinations and may be met in one of the following three ways:

(1) Master's-level (M) passes in comprehensive examinations for two of the three first-year sequences and a grade of B or better in all three courses in the remaining sequence OR

(2) Master's-level (M) passes in the comprehensive examination for one of the three first-year sequences and in one doctoral field examination OR

(3) Master's-level (M) passes in two doctoral field examinations.

Examinations are graded H (Ph.D. honors pass), P (pass at the Ph.D. level), M (pass at the M.A. level), or F (fail).

## Ph.D. Degree

The standard first-year core sequences are defined as the first-year graduate courses in microeconomic theory (Economics 201A-201B-201C), macroeconomic theory (courses 202A-202B-202C), and quantitative methods (courses 203A, 203B, 203C).

## Qualifying Examinations

All Ph.D. qualifying examinations are intended to determine competency in the overall field and are not restricted solely to the material presented in course lectures or assigned exercises. Written qualifying examinations are offered in the following areas (with preparatory courses in parentheses):

**Core Sequences** — Microeconomic theory (Economics 201A-201B-201C); macroeconomic theory (courses 202A-202B-202C); quantitative methods (courses 203A, 203B, 203C).

**Elective Doctoral Fields** — Econometrics (Economics 203B, 203C, 231A, 231B, M232A, 232B); information and uncertainty (courses 211A-211B, 212A); mathematical economics (courses 213A-213B, 214A); monetary theory (courses 221A-221B); economic history (courses 241, 242); public finance (courses 251A, 251B, 252); labor economics (courses 261A-261B); industrial organization (courses 271A-271B, 271C); international economics (courses 281A, 281B, 281C); development economics (courses 286A, 286B, 287A, 287B).

Written examinations are graded H (honors pass), P (pass at the Ph.D. level), M (pass at the M.A. level), or F (fail). They can be repeated, but you may sit for no more than seven in total.

You must pass (with a P or better) the qualifying examinations for two of the first-year core sequences — microeconomic theory, macroeconomic theory, and/or quantitative methods — by the end of Spring Quarter of your second year. You must satisfy an additional requirement in the remaining first-year core sequence by either earning a Ph.D. pass on the corresponding qualifying examination or earning a grade of B or better in all three courses.

You must also pass (with a P or better) qualifying examinations in three doctoral elective fields, usually by the end of your second year, even if you passed all three first-year core sequence qualifying examinations. Contact the graduate adviser for details on a breadth option (substituting three graduate courses for one of the three elective fields).

A written paper, ideally related to your doctoral dissertation, must be completed by the end of your third year. Material from the paper may be used as the basis for your presentation in a departmental workshop (see below), as well as the basis for your dissertation proposal.

In order to be advanced to candidacy, you are required to present a paper in a departmental workshop. It is recommended that this be completed by the end of your third year.

The University Oral Qualifying Examination, administered by your doctoral committee, is scheduled after successful completion of all written qualifying examinations, course requirements, written paper and workshop requirements, and submission of a written dissertation proposal. The examination focuses on, but is not limited to, the dissertation proposal.

## Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

## Final Oral Examination

A final oral examination on the doctoral dissertation is required unless it is waived by the committee that supervises the dissertation.

## Lower Division Courses

**1. Principles of Economics.** Lecture, three hours; discussion, one hour. Not open to students with credit for course 100. Introduction to principles of economic analysis, economic institutions, and issues of economic policy. Emphasis on allocation of resources and distribution of income through the price system.

**2. Principles of Economics.** Lecture, three hours; discussion, one hour. Not open to students with credit for course 100. Introduction to principles of economic analysis, economic institutions, and issues of economic policy. Emphasis on aggregate economics, including national income, monetary and fiscal policy, and international trade.

**5. Introductory Economics.** Lecture, three hours. Not open to students with credit for course 1, 2, or 100. Principles of economics as tools of analysis. Presentation of a set of concepts with which to analyze a wide range of social problems that economic theory illuminates. May not be used to fulfill entrance requirements for any Economics Department major.

**11. Microeconomic Theory.** (Formerly numbered 101A.) Lecture, three hours; discussion, two hours. Prerequisites: courses 1, 2, and two calculus courses, or consent of instructor. Laws of demand, supply, returns, and costs; price and output determination in different market situations.

**40. Introduction to Statistical Methods.** Lecture, three hours; discussion, one hour. Not open to students with credit for Mathematics M150A-150B, 151, Statistics 50, M152A, or 152B. Elements of statistical analysis. Presentation and interpretation of data; descriptive statistics; theory of probability and basic sampling distributions; statistical inference, including principles of estimation and tests of hypotheses; introduction to regression and correlation.

Mr. Potter, Mr. Ryu

**88A. Lower Division Research Seminar: Microeconomics.** Discussion, three hours. Prerequisite: course 1. Limited to 10 freshmen or sophomores. Seminar in which students do intensive research project under guidance of regular faculty. Students select topics in consultation with instructor (topics limited to material covered in course 1), write papers, and present them at the seminar.

**88B. Lower Division Research Seminar: Macroeconomics.** Discussion, three hours. Prerequisite: course 2. Limited to 10 freshmen or sophomores. Seminar in which students do intensive research project under guidance of regular faculty. Students select topics in consultation with instructor (topics limited to material covered in course 2), write papers, and present them at the seminar.

**99. Lower Division Seminar (2 or 4 units).** Prerequisites: courses 1 and 2 with a grade of B or better in each, overall 3.0 grade-point average, consent of instructor. Designed to provide an instructional vehicle for student research projects. May not be used to fulfill entrance requirements for any Economics Department major.

## Upper Division Courses

Courses 1 and 2, or 100 are prerequisite to all upper division courses in economics.

**100. Economic Principles and Problems.** Lecture, three hours. Prerequisite: upper division standing. Not open to students with credit for course 1, 2, or 5. Principles of economics with application to current economic problems. May not be used to fulfill entrance requirements for any Economics Department major.

**101. Microeconomic Theory.** (Formerly numbered 101B.) Lecture, three hours; discussion, one hour. Prerequisite: course 11. Theory of factor pricing and income distribution; general equilibrium; implications of pricing process for optimum allocation of resources; interest and capital.

**102. Macroeconomic Theory.** Lecture, three hours; discussion, one hour. Prerequisites: two calculus courses or consent of instructor. Theory of income, employment, and price level. Analysis of secular growth and business fluctuations; introduction to monetary and fiscal policy.

Mr. Farmer, Mr. Hansen, Mr. Thompson

**103A-103Z. Upper Division Research Seminars: Applications of Economic Theory.** Prerequisites: course 101A and others as set by instructor. Limited enrollment seminars in which students usually write a research paper on a topic selected in consultation with instructor.

**M103A. Political and Economic Issues in the Proliferation of Nuclear Weapons.** (Same as Political Science M139A.) Interdisciplinary approach to the problem of nuclear proliferation. Economic aspects of acquisition of nuclear weapons and economic aspects of nuclear energy treating technological, bargaining, and stability issues.

Mr. Intriligator (alternate years)

**103B. Economics of Energy.** Prerequisites: courses 101A, 101B, 102. Topics include pricing and taxation of exhaustible resources, interactions between energy and the economy, institutions such as OPEC and oil price controls, oil debt and balance of payments, energy conservation, and future technologies.

**104. Managerial Economics.** Lecture, three hours. Prerequisite: course 11. Enrollment priority to business economics students. Application of economic principles to business decisions. Allocating joint costs. Implicit costs of capacity constraints. Problems in capital budgeting, financing, and pricing. Role of interest rates in business decisions.

Mr. Riley

**105AH. Topics in Microeconomics (Honors).** Lecture, three hours. Prerequisites: courses 11, 101, and departmental honors program standing or consent of instructor. Introduction to Walrasian and Nash equilibrium. Modeling of selected applied topics such as peak load pricing, pricing of externalities, strategic pricing.

Mr. Levine

**105BH. Topics in Macroeconomics (Honors).** Lecture, three hours. Prerequisites: courses 11, 101, and departmental honors program standing or consent of instructor. Imperfect information-based models of monetary business cycles: theory and evidence. Real business cycle models: role of shocks and interindustrial technology structure in explaining fluctuations. Policy analysis and policy intervention in a world with rational maximizing agents: recent perspectives.

Mr. Hansen

**107. History of Economic Theory.** Lecture, three hours. Prerequisite: course 1 or 100. Survey of economic analysis from Grecian antiquity to the early 20th century, concentrating on the 18th and 19th centuries; special attention to selected writers, including Aristotle, mercantilists, Physiocrats, Hume, Smith, Malthus, Ricardo, Marx, marginalists, and Marshall.

**110. Economic Problems of Underdeveloped Countries.** Lecture, three hours. Prerequisite: course 1 or 100. Limited to non-Economics Department majors. Not open for credit to students with credit for course 111 or 112. Survey of major issues of development economics. Economic structure of low-income countries and primary causes for their limited economic growth. Economic goals and policy alternatives open to their leaders. Possible roles of developed countries. May not be applied toward any Economics Department major.

**111. Theories of Economic Growth and Development.** Lecture, three hours. Prerequisite: course 11. Growth models, theory of production under constraints, relative factor prices and their impact on choice of technology, investment criteria, role of the market, economic planning in less developed areas.

Mr. Lal

**112. Policies for Economic Development.** Lecture, three hours. Prerequisite: course 102 or 111. Suggested strategies for economic development: inflation, balanced growth, industry vs. agriculture, import substitution, export-oriented expansion, foreign aid, and others. Selected case studies.

Mr. Lal

**120. Introduction to Urban and Regional Economics.** Lecture, three hours. Prerequisite: course 11 or consent of instructor. Survey of broad range of policy and theoretical issues that are raised when economic analysis is applied in an urban setting. Topics include urbanization and urban growth, housing markets, location decisions of households and firms, transportation, urban labor markets, and local public sector.

**121. Urban Economic Analysis.** Lecture, three hours. Prerequisites: courses 11, 101. Urban economic analysis requires development of analytical tools that are different in some respects from standard methodology presented in courses 11 and 101. Construction and implementation of these tools, with applications to urban location decisions, housing, transportation, labor markets, and local public sector.

**130. Public Finance.** Lecture, three hours. Prerequisites: courses 11 and 101, or consent of instructor. Role of government in a market economy. Alternative justifications for government intervention. Principles and effects of spending programs (especially social insurance and health), taxation, deficit financing, and federal credit programs. Taxation in an open economy. Properties of public choice mechanisms.

Mr. Engen, Mr. Gale

**133. State and Local Finance.** Lecture, three hours. Prerequisite: course 130. Division of functions and revenues between state and local governments; revenues, expenditures, and indebtedness of these governments. Analyses of state and local tax systems.

Mr. Engen

**M135. Economic Models of Public Choice.** (Same as Political Science M105.) Prerequisites: course 11, any lower division political science course other than Political Science 1, and junior/senior standing, or consent of instructor. Analysis of methods and consequences of arriving at collective decisions through political mechanisms. Topics include free-rider problem, voting and majority choice, demand revelation, and political bargaining.

Mr. Wallerstein

**M136. Economic Models of Political Conflict and Conflict Resolution.** (Same as Political Science M106.) Prerequisites: course 11, any lower division political science course other than Political Science 1, and junior/senior standing, or consent of instructor. Biological, cultural, and organizational sources of political conflict. Role of threats, promises, commitments. Models of the onset and termination of conflict. Conduct of war: strategy and tactics.

**141. Principles of Statistical Decision.** Lecture, three hours. Prerequisite: course 40 or equivalent. Errors of first and second kind; economic loss functions; prior probabilities and Bayes theorem. Analysis of classical and Bayesian approaches. Application to inventory and production problems. Value of information and implications for sampling design.

Mr. Ellickson, Mr. McCall, Mr. Ostroy

**142. Probabilistic Microeconomics.** Lecture, three hours. Prerequisites: courses 11, 101. Combination of basic probability introduced in course 40 with microeconomic models presented in courses 11 and 101 in order to explain phenomena such as insurance, job search, and stock market behavior. Optimal production and consumption under uncertainty. Review of probability and introduction to alternative measures of risk and risk aversion.

Mr. McCall

**143. Applied Regression Analysis.** Lecture, three hours; discussion/computer tutorial, one hour. Prerequisite: course 40 or equivalent. Not open to students with credit for course 147A or 147B. Review of simple regression; assumptions of classical linear regression model; multiple regression, estimation, and inference; violations of assumptions of classical model (multicollinearity, heteroskedasticity, autocorrelation); autoregressive models, dummy variables. Emphasis on practical experience with regression analysis and interpretation; matrix algebra not required.

Ms. Cameron

**144. Introduction to Mathematical Methods in Economics.** Lecture, three hours. Prerequisites: courses 11, 101, two calculus courses. Introduction to use of calculus in economic analysis. Topics include partial differentiation, optimization, integration, and differential and difference equations, with applications to the theory of the household and the firm, capital theory, and economic dynamics.

Mr. Ellickson, Mr. Intriligator, Mr. Riley

**145. Topics in Mathematical Economics.** Lecture, three hours. Prerequisite: course 144. Possible topics include theory of economic growth; competitive equilibrium analysis; examination of market failure and role for market intervention.

Mr. Ellickson, Mr. Ostroy

**146. Linear Models in Economics.** Lecture, three hours. Prerequisite: one linear or matrix algebra course. Not open for credit to students with credit for Mathematics 144 or Electrical Engineering 136. Possible topics include duality theory of linear programming and simplex algorithm, input-output analysis, and two-person zero-sum games.

Mr. McCall, Mr. Ostroy

**147A. Introduction to Econometrics.** Lecture, three hours. Prerequisites: two calculus courses and course 143 (or Mathematics M150A-150B or Statistics M152A, 152B), or consent of instructor. Introduction to econometrics, including review of matrix algebra and statistical theory; linear regression model; model specification; data collection; estimation and hypothesis testing; and introduction to simultaneous equations models. Original econometric paper required.

Mr. Ellickson, Mr. Intriligator, Mr. Levine

**147B. Applications of Econometrics.** Lecture, three hours. Prerequisite: course 147A. Econometric models and data; forecasting, policy analysis, estimation of simultaneous equations models, applications of econometrics. Major original econometric paper required.

Mr. Ellickson, Mr. Intriligator, Mr. Levine

**148. Introductory System Theory.** Lecture, three hours. Prerequisites: Mathematics 33A, 33B. Introduction to modeling and analysis of dynamic systems, with emphasis on examples from social and life sciences. Linearity, impulse responses, stability, state variables, algorithms for filtering and control.

Mr. Ellickson (W)

**150. Wage Theory.** Lecture, three hours. Prerequisites: courses 11 and 101, or consent of instructor. Supply and demand for labor. Analysis of government, union, and other constraints on competitive system of wage determination. Wage level and structure. Wages and human capital theory.

Mr. Fallick

**151. Labor, Wages, and Income.** Lecture, three hours. Prerequisite: course 150 or consent of instructor. Selected topics in labor theory; income distribution; business cycles and unemployment; investments in human capital and life cycles; migration; human fertility; marriage and divorce, etc.

Mr. Fallick

**152. Trade Unions and Professional Associations.** Lecture, three hours. Comparative behavior of unions and professional associations; criteria for wage maximization; quantification of gains; analysis of legal framework applying to such organizations.

**160. Money and Banking.** Lecture, three hours. Recommended prerequisite: course 102. Principles of money and banking in the U.S.; legal and institutional framework; money supply process; investments, effects, and practice of monetary policy.

**161. Monetary Theory.** Lecture, three hours. Prerequisite: course 160. Nature of money and monetary exchange; level and term structure of interest rates; level and growth rate of money; transmission of monetary shocks; theory and practice of monetary policy.

**170. Monopoly and Competition.** Lecture, three hours. Prerequisite: course 11. Comparison of economic and legal treatments of the competitive process. Monopoly competition, and collusion as economic theory, as antitrust doctrine, and as fact. Source of monopoly. Predatory behavior. Misleading practices in theory and policy. General problem of relationship between private rights of action and competitive entry.

Mr. Demsetz, Mr. Klein

**171. Industrial Organization: Theory and Tactics.** Lecture, three hours. Prerequisite: course 11. Study of pricing and output decisions of firms under conditions of less than perfect competition or monopoly; theories of oligopoly and monopolistic competition; information costs and advertising; examination of pricing practices such as price discrimination, tie-in selling, predatory pricing, and resale price maintenance.

Mr. Demsetz, Mr. Klein

**172. Economic Analysis of Laws and Legal Institutions.** Lecture, three hours. Prerequisite: course 11. Application of economic theory to legal rule formulation: study of economic nature and consequences of alternative legal arrangements, with special reference to property rights. Application of economic theory to analysis of effects of laws relative to property contracts, torts, crimes, taxation, and constitutional issues. Analysis of legal process.

Mr. Demsetz

**173. Centralized Markets.** Lecture, three hours. Prerequisite: course 11. Enrollment priority to business economics students. Organization and function of stock, bond, commodity, and foreign exchange markets. Theory and evidence related to efficiency of these markets in evaluating information, to their role in facilitating risk-bearing and capital allocation. Interrelationship between business finance and organized capital markets.

Mr. Butz, Mr. Demsetz, Mr. Williams

**174. Organization of the Firm.** Lecture, three hours. Prerequisite: course 11. Enrollment priority to business economics students. Role of the firm in traditional economic theory and modern developments in the theory of the firm. Functions of ownership and management in face of risk and opportunism. Internal organization of the firm. Problem of separation of ownership from control in the modern corporation. Determinates of firm size, vertical integration, and degree of specialization of activities of firms. Decision making within the firm in a democratic setting.

Mr. Butz, Mr. Demsetz, Mr. Dick

**175. Economics of Transportation.** Lecture, three hours. Prerequisite: course 11. Economic characteristics of transport; functions of the different agencies; pricing and resource allocation in transport; public regulation of transport; urban transport; modern transport problem.

**176. Business and Government.** Lecture, three hours. Prerequisites: courses 11, 101. Several aspects of interaction between business and government, including regulation of prices, entry, working conditions, natural resource use, policies of taxation, and subsidy of business. Mr. Demsetz

**177. Contractual Arrangements in Business.** Lecture, three hours. Prerequisites: courses 11, 101. Enrollment priority to business economics students. Economic and legal determinants of contractual arrangements adopted by business. Franchise contracts, rights-of-first refusal, and tie-in contracts. Legal constraints and efficiency of different contractual arrangements. Mr. Demsetz, Mr. Klein

**180. Comparative Systems: Transformation of Socialist Economies.** Lecture, three hours. Prerequisites: courses 11, 101. Comparative analysis of capitalist and socialist economies. Models of transition from centrally planned to free market economies. Analysis and critique of actual implementation. Future prospects.

**181A. Development of Economic Institutions in Western Europe.** Lecture, three hours. Prerequisite: upper division standing. European economic history, 900-1700. Custom, command, and market modes of organization. Evolution of property rights, contract forms, and monetary arrangements. Decline of feudal institutions, especially serfdom. Open field village and enclosures. Crafts manufacturing and guild organization. Development of banking. Public finances and role of government. Mr. Rosenthal

**181B. Development of Economic Institutions in Western Europe.** Lecture, three hours. Prerequisite: upper division standing. European economic history, 1700-1914. Industrial revolution in Britain and its spread to the continent. Rise of factories, industrial firms, and unions. Changes in standard of living and demographic consequences. Imperial expansion and decline of Britain. Worldwide diffusion of economic growth and the Gerschenkron hypothesis. Mr. Rosenthal, Mr. Sokoloff

**182. Centralized Economics Systems.** Lecture, three hours. Prerequisites: courses 11, 101. Introduction to theory of centralized systems and examination of some centralized economies. Considerable attention to economy of the U.S.S.R.; some attention to other economies selected in light of the centralized model and with view to the march of current events. Mr. Murphy

**183. Development of Economic Institutions in the U.S.** Lecture, three hours. Study of changing economic conditions in the U.S. from Colonial times to the early 20th century and effects of these changes on American society. Mr. Sokoloff

**184. History of Enterprise and Entrepreneurship in the American Economy.** Lecture, three hours. Enrollment priority to business economics students. Study of role of innovation in history of American enterprise. Examination of specific episodes of salient entrepreneurial innovation, as well as general theoretical and empirical treatments. Mr. Sokoloff

**190. International Economics.** Lecture, three hours. Prerequisite: course 1 or 100. Limited to non-Economics Department majors. Not open to students with credit for course 191 or 192. General introduction to international economics, based on examination of theory of trade and the means and significance of balance of payments adjustments, with analysis of major issues of international commercial and monetary policy confronting national and international agencies. May not be applied toward any Economics Department major.

**191. International Trade Theory.** Lecture, three hours. Prerequisite: course 101. Not open to students with credit for course 190. Theory of international trade: bases, direction, terms, volume, and gains of trade. Effects of tariffs, quantitative restrictions, and international integration. Effects of free and restricted trade on economic welfare and political stability. Mr. Stanczak

**192. International Finance.** Lecture, three hours. Prerequisite: course 102. Not open to students with credit for course 190. Emphasis on interpretation of the balance of payments and adjustment to national and international equilibria through changes in price levels, exchange rates, and national income. Other topics include making international payments, determination of exchange rates under various monetary standards, capital movements, exchange controls, and international monetary organization. Ms. Ozler, Mr. Sturzenegger

**193. Research in International Area Studies Seminar.** Lecture, three hours. Limited to economics/international area studies seniors. Students prepare research paper on economy of the country or region of specialization. Mr. Sturzenegger

**195H. Honors Thesis Seminar.** Seminar, three hours. Limited to seniors in departmental honors program. Seminar in which students present results of their senior theses.

**199. Special Studies in Economics (2 or 4 units).** Prerequisites: courses 11, 101, junior/senior standing, consent of instructor. May be repeated but may be applied only once toward the major requirements.

## Graduate Courses

### Foundations of Economics

**201A-201B-201C. Microeconomics.** Lecture, three hours:

**201A.** Theory of the Firm and Consumer. Two input/two output model. Walrasian equilibrium and Pareto efficiency. Choice over time — consumer savings and firm investment decisions. Choice under uncertainty — state claims model, asset pricing. Mr. Riley

**201B.** General Equilibrium and Welfare Economics. Meaning of competition in general equilibrium. Decentralization and appropriation roles of prices. Increasing returns. Public goods. Pecuniary and non-pecuniary externalities. Mechanism design. Mr. Ostroy

**201C.** Basic Concepts and Techniques of Noncooperative Game Theory and Information Economics. Nash equilibrium and subgame perfection. Games with incomplete information. Models of strategic market behavior. Screening and signaling. Bargaining models. Theory of the firm. Mr. Ellickson

**202A-202B-202C. Macroeconomics.** Lecture, three hours:

**202A.** Dynamics and Growth Theory. Essential techniques and concepts from dynamical mathematics and neoclassical growth theory. Linear and nonlinear dynamical systems. Dynamic programming and control theory. Stochastic dynamics. Determinacy of equilibrium. Descriptive, optimal, and overlapping generations models of accumulation. Stochastic growth theory. Increasing returns and applications to economic development. Mr. Azariadis

**202B.** Business Cycles. Survey of representative agent and complete market models of short-run fluctuations. Facts about fluctuations and long-term growth. Real business cycle theory. Calibrating and simulating dynamic models. Asset prices, money, and inflation. Taxation of factor incomes. Cyclical aspects of employment. Mr. Potter

**202C.** Topics in Macroeconomics. Heterogeneous-agent models of endogenous fluctuations and growth. General equilibrium techniques in macroeconomics. Overlapping fluctuations model with national debt. Fiscal policy. Externalities, indeterminacy, and growth. Expectations and business cycles. Money and monetary policy. Historical overview of mainstream macroeconomics. Wicksell and Keynes. Monetarist controversy. New classical and new Keynesian macroeconomics. Mr. Farmer

**203A. Probability and Statistics for Econometrics.** Lecture, three hours. Provides statistical tools necessary to understand econometric techniques. Random variables, distribution and density functions, sampling, estimators, estimation techniques, hypothesis testing, and statistical inference. Use of economic problems and examples. S/U or letter grading. Ms. McGarry

**203B. Introduction to Econometrics: Single Equation Models.** Lecture, three hours. Estimation of basic linear regression model, testing hypotheses, generalized least squares, serial correlation, heteroskedasticity, multicollinearity, error-in-variables, distributed lags, qualitative dependent variables, and forecasting. S/U or letter grading. Mr. Ryu

**203C. Introduction to Econometrics: Systems Models.** Lecture, three hours. Multivariate regression, simultaneous equation estimation, identification, and latent variables. S/U or letter grading. Ms. Cameron

**204A-204Z. Applications of Economic Theory.** Lecture, three hours:

**M204L-M204M-M204N.** Seminars: Pharmaceutical Economics and Policy. (Formerly numbered M204L.) (Same as Health Services M204A-M204B-M204C.) Seminar, three hours every other week for three terms. Prerequisites: courses 201A-201B-201C or equivalent, graduate standing in public health or economics, consent of instructor. Various topics in economics of pharmaceutical industry, including rates of innovation, drug regulation, and economic impact of pharmaceuticals. In Progress grading. Mr. Intriligator, Mr. Schweitzer

**205. Economic Modeling.** Lecture, three hours. Development of modeling skills by considering a sequence of economic issues (e.g., peak load pricing, regulation, monopoly, capital asset pricing, Pareto efficiency). Emphasis on multivariate constrained optimization. S/U or letter grading. Mr. Intriligator, Mr. McCall

**207. History of Economic Thought.** Lecture, three hours. Topics from classical economics, including work of Smith, Ricardo, and Mill, and developments from the 1870s, including contributions of major figures of the marginalist revolution, the socialist controversy, and history of welfare economics. S/U or letter grading. Mr. Ostroy

### Economic Theory

**211A-211B. Economics of Uncertainty, Information, and Games.** Lecture, three hours. Prerequisites: course 201C, introductory probability. Theory of individual decision making under uncertainty, applied to topics such as asset pricing models, adverse selection, moral hazard, bargaining, signaling, auctions, and search. S/U or letter grading. Mr. Levine, Mr. McCall, Mr. Riley

**212A-212Z. Topics in Advanced Theory.** Lecture, three hours. Current research in microeconomic theory. Content varies. Courses in this sequence not ordinarily given every year. May be repeated for credit. S/U or letter grading:

**212A.** Search Theory. Prerequisites: calculus, introductory probability. Price searching, queueing, Brownian motion, martingales, and applications to the theory of the firm. Mr. McCall

**212B.** Applied Game Theory. Prerequisites: calculus, introductory probability. Use of theory of Bayesian games to study bargaining, monetary theory, and oligopoly. Use of theory of mechanisms to study auction design and imperfectly competitive markets. Mr. Levine, Mr. Riley

**213A-213B. General Equilibrium and Game Theory.** Lecture, three hours. Prerequisite: course 201C or consent of instructor. Selected advanced theoretical topics of current interest and introduction to modern mathematical economics, including general equilibrium theory and game theory. S/U or letter grading.

Mr. Ellickson, Mr. Ostroy, Mr. Shapley

**214A-214Z. Topics in Mathematical Economics.** Lecture, three hours. Prerequisite: course 213B or consent of instructor. Current research in mathematical economics. Content varies. Ordinarily only two courses in this sequence are given every year. May be repeated for credit. S/U or letter grading.

**214A. General Equilibrium Theory.** Prerequisite: course 201C or equivalent or consent of instructor. Core convergence theorem, cooperative and noncooperative approach to competitive equilibrium theory, perfectly competitive equilibria, the no-surplus condition, and applications to mechanism theory and incomplete market models.

Mr. Ostroy

**M214B. Game Theory.** (Same as Political Science M208A.) Prerequisites: course 213A or suitable mathematics courses. Bargaining theory, the core, the value, other solution concepts. Applications to oligopoly, general exchange and production economies, and allocation of joint costs.

Mr. Shapley

**M214C. Large Economies.** (Same as Political Science M208C.) Prerequisites: course 213A or suitable mathematics courses. Consideration of economics with a continuum of consumers and with a continuum of goods. Basic model applied to perfectly competitive equilibrium, the core, location models, and other models with nonconvex preferences and/or technology.

Mr. Ellickson

**M215. Topics in Applied Game Theory.** (Same as Political Science M208B.) Lecture, three hours. Prerequisites: calculus or introductory probability, and graduate standing in economics or consent of instructor. Survey and applications of major solution concepts to models of bargaining, oligopoly, cost allocation, and voting power. S/U or letter grading.

Mr. Shapley

**219A-219B-219C. Workshops: Economic Theory and Mathematical Economics.** Lecture, three hours. Prerequisite: consent of instructor. Workshops for dissertation and predissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. Research paper required. S/U grading.

Also see Management 200 (game theory and information economics), 203A (decision theory), 203B (economics of information)

## Monetary Economics

**221A-221B. Monetary Economics I, II.** Lecture, three hours. S/U or letter grading:

**221A.** Prerequisite: course 202C. Emphasis on empirical studies in money and banking. Econometric implications of rational expectations, random vs. deterministic trends, unemployment, central bank operating procedures, and evolution of monetary institutions.

Mr. Leijonhufvud, Mr. Tabellini

**221B.** Prerequisite: course 221A. Emphasis on theoretical aspects of monetary economics. Financial intermediation, models of banking panics, asset prices volatility, contract theory, game theoretic models of policy, and Keynesian models with monopolistic competition, search, and coordination failures.

Mr. Leijonhufvud, Mr. Oh

**222A-222Z. Topics in Monetary Economics.** Lecture, three hours. Current research in monetary economics. Content varies. May be repeated for credit. S/U or letter grading:

**M222A.** Control and Coordination in Economics. (Same as Computer Science M222.) Prerequisite: graduate standing in economics or engineering or consent of instructor. Recommended: appropriate mathematics course. Stabilization policies, short- and long-run dynamics and stability analysis; decentralization, coordination in teams; certainty equivalence and separation theorems; stochastic and learning models. Bayesian approach to price and output rate adjustment.

Mr. Aoki

**229A-229B-229C. Workshops: Monetary Economics.** Lecture, three hours. Prerequisite: consent of instructor. Workshops for dissertation and predissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. Research paper required. S/U grading.

Mr. Leijonhufvud, Mr. Tabellini

Also see Management 239A, 239B, 239C (Ph.D. sequence in finance), 239D (advanced topics in finance), 239X-239Y-239Z (finance workshops)

## Econometrics

**231A. Econometrics: Single Equation Models.** Lecture, three hours. Linear regression model, specification error, functional form, autocorrelation, nonlinear estimation, distributed lags, nonnormality, univariate time series, qualitative dependent variables, aggregation, structural change, and errors-in-variables. S/U or letter grading.

Mr. Leamer

**231B. System Models.** Lecture, three hours. Multivariate regression, errors-in-variables, simultaneous equations, identification, proxy variables, latent variables, factor analysis of panel data, asymptotic distribution theory. S/U or letter grading.

Mr. Ryu

**232A-232Z. Topics in Econometrics.** Lecture, three hours. Prerequisites: courses 231A, 231B. Current research in econometrics. Content varies. Courses in this sequence not ordinarily given every year. May be repeated for credit. S/U or letter grading:

**M232A.** Bayesian Econometrics. (Same as Political Science M208E.) Subjective probability, introduction to decision theory, Bayesian analysis of regression, sensitivity analysis, simplification of models, criticism.

Mr. Leamer

**232B.** Time Series. Stationary stochastic processes, Box/Jenkins methods, spectral analysis, forecasting, rational expectation models, analysis of macroeconomic data.

**239A-239B-239C. Workshops: Econometrics.** (Formerly numbered 239A-239B.) Lecture, three hours. Prerequisite: consent of instructor. Workshops for dissertation and predissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. Research paper required. S/U grading.

## Economic History

**241. Economic History of Western Europe.** Lecture, three hours. Prerequisite: graduate standing or consent of instructor. Seminar on European economic history, with emphasis on evolution of institutions and growth. Serfdom, medieval agriculture and the agricultural revolution, demographics, industrial revolution, imperial expansion, and decline of Britain. S/U or letter grading.

Mr. Rosenthal, Mr. Sokoloff

**242. Economic History of the U.S.** Lecture, three hours. Seminar on American economic history. Onset of industrialization, relative economic backwardness of the South, slavery, technological change, rise in industrial concentration, women in the labor force, development of financial markets. S/U or letter grading.

Mr. Sokoloff

**243A-243Z. Topics in Economic History.** Lecture, three hours. Current research in economic history. Content varies. May be repeated for credit. S/U or letter grading.

**249A-249B-249C. Von Gremp Workshops: History of Entrepreneurship in the U.S. Economy.** Lecture, three hours. Prerequisites: graduate standing, consent of instructor. Workshops for advanced graduate students. Research in progress discussed by visiting experts, UCLA faculty members, graduate students. S/U grading.

Mr. Sokoloff

## Public Finance

**251A. Theory and Policy of Taxation.** Lecture, three hours. Examination of influence of taxation on economic efficiency and incidence of taxation in first part of course. Topics include tax equivalences, Ramsey rules, and alternative forms of taxation. Special tax provisions, tax incentives, and progressivity in taxation in second part of course. S/U or letter grading.

Mr. Harberger

**251B. Cost-Benefit Analysis of Public Projects and Programs.** Lecture, three hours. Prerequisite: course 251A. Presentation of those aspects of applied capital theory that are relevant in decisions concerning investment projects in first part of course. Differences between social and private benefits and costs (shadow prices) for foreign exchange, capital, and labor, with applications to public investment decisions, in second part of course. S/U or letter grading.

Mr. Harberger

**252. Economics of Federalism.** Lecture, three hours. Theories of perfect games and social organization. Role of government, collective goods, collective defense, local public goods, spillovers, and intergovernmental relations. S/U or letter grading.

Mr. Thompson

**253A-253Z. Topics in Public Finance.** Lecture, three hours. Current research in public finance. Content varies. Topics include Social Security taxes and programs, unemployment insurance, public provision of medical care, theory of public goods, and theory of public choice. May be repeated for credit. S/U or letter grading.

**254A-254B-254C. Workshops: Public Economics.** Lecture, three hours. Prerequisites: graduate standing, consent of instructor. Workshops for advanced graduate students. Research in progress discussed by graduate students, UCLA faculty members, visiting experts. S/U grading.

## Labor Economics

**261A-261B. Labor Economics I, II.** Lecture, three hours. S/U or letter grading:

**261A.** Wage determination in competitive labor markets. Extension of wage determination to schooling and occupational choice, life-cycle earnings profiles, discrimination, minimum wage legislation, and unionism. Emphasis on empirical literature.

Mr. Fallick

**261B.** Prerequisite: course 261A. Models of life-cycle learning and work behavior, with particular emphasis on recent literature examining labor force behavior and experience of women.

Ms. Currie

**262A-262Z. Topics in Labor Economics.** Lecture, three hours. Current research in labor economics. Content varies. May be repeated for credit. S/U or letter grading.

**269A-269B-269C. Workshops: Labor Economics.** Lecture, three hours. Prerequisite: consent of instructor. Workshops for dissertation and predissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. Research paper required. S/U grading.

## Industrial Organization

**271A-271B. Industrial Organization, Price Policies, and Regulation I, II.** Lecture, three hours. S/U or letter grading:

**271A.** Major economic aspects of property rights system. The firm and the market compared from perspective of alternative arrangements for allocating resources. Traditional problems of competition, monopoly, and industrial concentration. Brief analysis of those portions of antitrust policy bearing on industrial structure. Mr. Demsetz

**271B.** Prerequisite: course 271A. Study of firm organization and pricing under conditions of less than perfect competition; information costs and advertising; economic and legal analysis of marketing practices such as discrimination, tie-in selling, resale price maintenance, exclusive dealing, and territorial arrangements. Mr. Klein

**271C. Mathematical Theory in Industrial Organization.** Lecture, three hours. Prerequisites: courses 201A-201B-201C. Formal modeling of theory of industrial organization: principal-agent problem, entry deterrence, endogenous price discrimination, monopolistic competition, new approaches to rationality. S/U or letter grading. Mr. Dick

**272A-272Z. Topics in Industrial Organization.** Lecture, three hours. Current research in industrial organization. Content varies. May be repeated for credit. S/U or letter grading.

**273A. Public Utility Regulation.** Lecture, three hours. Theory, practice, and consequences of regulation in electric power, gas, water, telecommunications, broadcasting, and other regulated industries; experiences of unregulated monopoly and public enterprises by way of contrast. S/U or letter grading.

**273B. National Transport Policy.** Lecture, three hours. Regulation of surface and air carriers, pricing and investment in public transport facilities, policy toward merchant marine. S/U or letter grading.

**279A-279B-279C. Workshops: Business Organization.** Prerequisite: consent of instructor. Workshops for dissertation and pre-dissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. Research paper required. S/U grading. Mr. Demsetz, Mr. Klein

Also see Management 262 (pricing policy)

## International Economics

**281A. International Trade Theory.** Lecture, three hours. Theoretical and empirical analysis of micro-economic relationships among countries. Determinants of commodity and factor flows, prices, and factor rewards. Effects of trade barriers. S/U or letter grading. Mr. Leamer

**281B. International Finance.** Lecture, three hours. Theory and evidence on balance of payments, exchange rate determination, international transmission of inflation and business cycles, macroeconomic policy in open economies, alternative monetary systems. S/U or letter grading. Mr. Edwards

**281C. International Economics.** Lecture, three hours. Theoretical and empirical analysis of interrelation between flows of capital, people, and goods. Applications to current policy. S/U or letter grading. Ms. Ozler

**282A-282Z. Topics in International Economics.** Lecture, three hours. Current research in international economics. Content varies. May be repeated for credit. S/U or letter grading.

**283. Economics of Soviet External Involvement.** Lecture, three hours. Prerequisite: consent of instructor. Interrelations between Soviet economy and the U.S.S.R.'s international behavior. Major topics, considered in various regional contexts of Soviet activity, include (1) extent of the U.S.S.R.'s global involvement, (2) domestic economic constraints on that involvement, and (3) external influences on Soviet domestic economic development. S/U or letter grading. Mr. Becker

## 284. Soviet Economic Theory and Organization.

Lecture, three hours. Overall strategy of planning used by U.S.S.R. planners and specific planning methods, interpreted broadly to cover not only instructions and objectives but also institutional arrangements. Intended and unintended outcomes of the methods. S/U or letter grading. Mr. Murphy

**285A-285B-285C. Workshops: International Economics.** Lecture, three hours. Prerequisite: consent of instructor. Workshops for dissertation and pre-dissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. Research paper required. S/U grading. Mr. Edwards, Mr. Harberger

## Development Economics

**286A. Economic Development.** Lecture, three hours. Prerequisites: courses 201C, 202C. Study of theoretical and empirical problems related to developing countries. Emphasis on relation between international trade and economic development, dynamic aspects of commercial policies, inflation, stabilization, structural adjustment, growth and migration. S/U or letter grading. Mr. Edwards

**286B. Analysis and Appraisal of Development Projects.** Lecture, three hours. Prerequisite: course 286A. Methodology for evaluating investment projects, with special attention to types of issues that arise in developing countries. Discussion of social versus private evaluation criteria; applications to highway, electricity, and irrigation projects. S/U or letter grading. Mr. Harberger

**287A-287Z. Topics in Development Economics.** Lecture, three hours. Current research in development economics. Content varies. Courses in this sequence not ordinarily given every year. May be repeated for credit. S/U or letter grading:

**287A.** Economic Problems of Latin America. Economic history of Latin America. The great depression, import substitution and industrialization, inflation and growth, free market experiments, and economic integration. Mr. Edwards

**287B.** Economic Development in East Asia. Recent economic history of East Asia, focusing on postwar development of Japan, Korea, and China. Emphasis on role of international investment and trade, especially with the U.S., in area's economic development.

## Urban Economics

**291A-291B. Urban Economics.** Lecture, three hours. Course 291A is prerequisite to 291B. Implications of urbanization for economic analysis. Development of theory in course 291A; emphasis on policy in 291B. Use of monocentric model of urban land use to introduce location and transportation costs. Examination of housing, transportation, and local public services. Ms. Cameron

**293A-293Z. Topics in Urban Economics.** Lecture, three hours. Current research in urban and regional economics. Content varies. Serves as forum for presentation of papers on urban economics by students, UCLA faculty members, and visitors. May be repeated for credit. S/U or letter grading. Ms. Cameron

## Special Studies

**299A-299B-299C. Workshops: Preparing a Dissertation Proposal.** Lecture, three hours. Workshops for third-year graduate students who are preparing for oral qualifying examination. Presentation of journal articles for critical analysis to develop students' analytical skills. Presentation of students' own research for critical analysis by fellow students and faculty. Workshops open to research in all fields of economics. S/U grading.

## 375. Teaching Apprentice Practicum (1 to 4 units).

Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495. Teaching College Economics (2 units).** Discussion, one hour; laboratory, three hours. Prerequisite: graduate standing. Required of all new teaching assistants. Classroom practice in teaching, with individual and group instruction on related educational methods, materials, and evaluation. May be repeated for credit. S/U grading.

**596. Individual Study (2 to 8 units).** Directed individual study or research. S/U grading.

**597. Individual Study: Graduate Examinations (2 to 8 units).** Directed individual study in preparation for M.A. comprehensive examination or Ph.D. qualifying examinations. S/U grading.

**599. Individual Research: Ph.D. Dissertation (2 to 8 units).** Prerequisite: advancement to Ph.D. candidacy. Directed individual research in preparation of Ph.D. dissertation. S/U grading.

## Economics/System Science (Interdepartmental)

2263 Bunche Hall, (310) 825-1011

### Professors

Bryan C. Ellickson, Ph.D. (*Economics; Distinguished Teaching Award*)  
Michael D. Intriligator, Ph.D. (*Economics*)  
Stephen E. Jacobsen, Ph.D. (*Electrical Engineering*)  
Masanao Aoki, Ph.D., *Emeritus (Economics)*

## Scope and Objectives

The major is an alternative to the regular departmental major in economics and combines work in the School of Engineering and Applied Science with preparation in economic theory and in those aspects of mathematics and statistics necessary for the study of quantitative aspects of economics and systems theory. The major is appropriate for students with interests in such areas as economic theory, mathematical economics, econometrics, feedback and control systems, optimization, computing techniques, and the modeling and analysis of various socioeconomic systems.

## Bachelor of Science Degree

### Admission

This interdepartmental major is in the process of being disestablished as there is no longer a system science department in the School of Engineering and Applied Science. Therefore, students admitted to the University for Fall Quarter 1993 and thereafter cannot enter this major. You can pursue one of the alternate programs available in mathematics/applied science (see Mathematics later in this chapter).



Students admitted to the preeconomics/system science major prior to Fall Quarter 1993 can apply for admission to the economics/system science major or to one of the alternate programs. All preeconomics/system science students applying for admission to the major are subject to the minimum entrance requirements as listed in the 1992-93 *UCLA General Catalog*.

### Preparation for the Major

*Required:* Economics 1, 2, 11; Computer Science 10C or 10F or Program in Computing 3 or 10A; Mathematics 31A, 31B, 32A, 32B, 33A, 33B. All courses must be completed for a letter grade of C- or better.

Repetition of more than one preparation course or of any preparation course more than once results in automatic denial of admission to the major. Transfer credit for any of the above is subject to department approval; consult the undergraduate counselor in 2253 Bunche Hall before enrolling in any courses for the major.

### The Major

*Required:* Thirteen upper division courses as follows: five courses in economics selected from Economics 101 and above, including 101, 102, and one course from 141, 142, 144, 145, 146, 147A, 147B; six courses in system science selected from Electrical Engineering 102, 103, 131A, 131B, 136, 141, 142, including 131A (or Mathematics M150A or Statistics M152A) and 131B (or Mathematics 151 or Statistics 152B); two courses in mathematics selected from Mathematics 110A and above (such mathematics courses may not also be applied toward the system science requirements).

Recommended courses include Electrical Engineering 141 and 142 in the area of dynamic systems analysis and Electrical Engineering 136 in the area of optimization.

All upper division major courses must be completed for a letter grade of C- or better, with an overall 2.0 GPA.

## Education

1605 Maxxam Building\*, (310) 825-8327

### Professors

Helen S. Astin, Ph.D.  
Nicholas Blurton Jones, Ph.D.  
James E. Bruno, Ph.D.  
Sol Cohen, Ph.D.  
John N. Hawkins, Ph.D.  
Carollee Howes, Ph.D.

Marilyn L. Kourilsky, Ph.D. (*Distinguished Teaching Award*)  
Val D. Rust, Ph.D.  
George F. Kneller, Ph.D., Litt.D., LL.D., D.Sc., L.H.D., *Emeritus*

### Associate Professors

Carlos A. Torres, Ph.D.  
James W. Trent, Ph.D.  
Concepción Valadez, Ph.D.  
Wellford Wilms, Ph.D.

### Assistant Professors

Robert M. Hodapp, Ph.D.  
D. Michael Pavel, Ph.D.  
Daniel G. Solorzano, Ph.D.  
Amy S. Wells, Ph.D.

### Lecturer

Edward (Chip) Anderson, Ph.D.

## Scope and Objectives

The undergraduate specialization in education is designed to (1) allow students to learn more about the multitude of professional and research issues in the field of education and to understand the complex interactions between social, political, and economic forces which influence and shape educational policies in America, (2) provide an introductory educational sequence for students who wish to pursue careers in education either as teachers or researchers, and (3) present an information base in the area of education by which UCLA students can become better consumers of educational services as future parents, taxpayers, and citizens.

The teaching philosophy is governed by a need to address these objectives with a logical and time-efficient course structure — lower division courses that provide an introduction to educational policy, upper division social and behavioral sciences courses (sociology, political science, history, philosophy, anthropology, economics, psychology) taught in the Graduate School of Education, upper division elective courses in which students can pursue their own specific interests in the area of education, and a special studies research experience. The specialization must be taken in conjunction with a departmental or interdepartmental major.

## Special Undergraduate Program

Enrollment is limited but includes sophomore or junior students. To enter the specialization you must submit a formal application to the Office of Student Services in the Graduate School of Education. All courses applied toward the specialization must be taken for a letter grade.

### Preparation for the Specialization

*Required:* Two courses from Education 91A through 91E.

## Upper Division

*Required:* Two social sciences courses from Education M108, 112, C191A through C191E; two elective courses from Education 100, M102, 125A, M148, 180, 181, 192, 197. Additional courses will be applicable as approved.

After successfully completing the six required courses with at least a 2.5 GPA, you must complete one special studies research experience (Education 199) or practicum course (Education 197) with a professor in the Graduate School of Education. Internship research areas include administration, curriculum, and teaching studies; higher education; psychological foundations and educational research methods; and social sciences (history, economics, anthropology, sociology, philosophy).

For further information and application forms, contact the Graduate School of Education Office of Student Services at the program address.

## English

2225 Rolfe Hall, (310) 825-4173

### Professors

Michael J.B. Allen, Ph.D., D.Litt. (*Distinguished Teaching Award*)  
Paula Gunn Allen, Ph.D.  
Martha Banta, Ph.D.  
Calvin B. Bedient, Ph.D. (*Luckman Distinguished Teaching Award*)  
Charles A. Berst, Ph.D. (*Distinguished Teaching Award*)  
A.R. Braunmuller, Ph.D. (*Distinguished Teaching Award*)  
Frederick L. Burwick, Ph.D.  
Daniel G. Calder, Ph.D.  
Michael J. Colacurcio, Ph.D.  
Robert A. Georges, Ph.D.  
Christopher W. Grose, Ph.D.  
George R. Guffey, Ph.D. (*Distinguished Teaching Award*)  
N. Katherine Hayles, Ph.D.  
Henry Ansgar Kelly, Ph.D.  
Gordon L. Kipling, Ph.D.  
V.A. Kolve, Ph.D. (*The UCLA Foundation Professor*)  
Richard A. Lanham, Ph.D.  
Richard D. Lehan, Ph.D. (*Distinguished Teaching Award*)  
Kenneth R. Lincoln, Ph.D. (*Distinguished Teaching Award*)  
Anne K. Mellor, Ph.D.  
Donka Minkova, Ph.D.  
Michael A. North, Ph.D.  
Maximilian E. Novak, D.Phil., Ph.D.  
Jonathan F.S. Post, Ph.D.  
Alan Roper, Ph.D.  
George S. Rousseau, Ph.D.  
Paul D. Sheats, Ph.D.  
Deborah K. Shuger, Ph.D.  
Eric Sundquist, Ph.D.  
Georg B. Tennyson, Ph.D.  
Robert N. Watson, Ph.D., *Acting Chair*  
Samuel Weber, Ph.D.  
Thomas R. Wortham, Ph.D., *Vice Chair*  
Stephen Yenser, Ph.D. (*Distinguished Teaching Award*), *Vice Chair*

\*122 Moore Hall in early 1994.

**Professors Emeriti**

Robert Martin Adams, Ph.D.  
 Vinton A. Dearing, Ph.D.  
 Robert W. Dent, Ph.D.  
 John J. Espey, B.Litt., M.A.  
 Robert P. Falk, Ph.D.  
 Reginald A. Foakes, Ph.D.  
 Patrick K. Ford, Ph.D.  
 Gerald J. Goldberg, Ph.D.  
 Charles V. Hartung, Ph.D.  
 Paul A. Jorgensen, Ph.D.  
 Jascha Kessler, Ph.D.  
 Robert S. Kinsman, Ph.D.  
 Blake R. Nevius, Ph.D.  
 Ada B. Nisbet, Ph.D.  
 Waldo W. Phelps, Ph.D.  
 Florence Ridley, Ph.D.  
 William D. Schaefer, Ph.D.  
 Paul R. Sellin, Ph.D.  
 Peter L. Thorslev, Jr., Ph.D.  
 Alexander Welsh, Ph.D.

**Associate Professors**

Walter E. Anderson, Ph.D.  
 Charles L. Batten, Jr., Ph.D. (*Distinguished Teaching Award*)  
 King-Kok Cheung, Ph.D.  
 Edward I. Condren, Ph.D.  
 Donald J. Cosentino, Ph.D.  
 James E. Goodwin, Ph.D.  
 Albert D. Hutter, Ph.D. (*Distinguished Teaching Award*)  
 Jack Kolb, Ph.D.  
 Robert M. Maniquis, Ph.D.  
 Joseph F. Nagy, Ph.D.  
 Barbara L. Packer, Ph.D.  
 Raymond A. Paredes, Ph.D.  
 Vincent P. Pecora, Ph.D.  
 Karen E. Rowe, Ph.D. (*Distinguished Teaching Award*)  
 Gregory M. Sarris, Ph.D.  
 Valerie A. Smith, Ph.D.  
 Richard A. Yarborough, Ph.D. (*Distinguished Teaching Award*)

**Assistant Professors**

Robert D. Aguirre, Ph.D.  
 Blake Allmendinger, Ph.D.  
 Ali Behdad, Ph.D.  
 Christopher Cannon, Ph.D.  
 Lowell Gallagher, Ph.D.  
 Deborah M. Garfield, Ph.D.  
 Jayne E. Lewis, Ph.D.  
 Jinqi Ling, Ph.D.  
 Arthur L. Little, Jr., Ph.D.  
 Claire E. McEachern, Ph.D.  
 Kenneth Reinhard, Ph.D.  
 Judith A. Rosen, Ph.D.  
 Sonia Saldivar-Hull, Ph.D.  
 Jenny Sharpe, Ph.D.

**Senior Lecturers**

David Stuart Rodes, Ph.D. (*Distinguished Teaching Award*)  
 Jerome Cushman, A.B., B.S.L.S., *Emeritus*

**Adjunct Professor**

Carolyn See, Ph.D.

**Scope and Objectives**

An interest in English and American literature draws many students to the Department of English, which also offers courses in other fields, including the history and structure of the English language itself. Although committed to no single method or approach, the department encourages an emphasis on literary history and requires of its undergraduate majors a

firsthand acquaintance with such influential writers as Chaucer, Milton, and Shakespeare. Students may range outward from this core to a rich variety of other fields — literary criticism, for example, or the ethnic literatures and popular culture of America, or the relation of literature to such complementary disciplines as history, sociology, psychology, and philosophy. Qualified students may elect a concentration in creative writing or an interdisciplinary program in American studies.

An understanding and appreciation of literature can furnish lifelong rewards. In addition to such personal benefits, the department seeks to impart the capacity to make balanced critical judgments and the ability to write the English language persuasively, with point and effect. Such skills are essential to success in a variety of professions for which the major in English can provide excellent preparation, including law, administration, business, and teaching.

A graduate program leading to the Master of Arts degree is available for students who wish to continue the study of literature at an advanced level. A parallel program continues to the Ph.D. degree. Because the Ph.D. program may require five years or more, it is intended only for qualified students who are seriously committed to advanced literary scholarship and, in some cases, to a career in college or university teaching.

**Bachelor of Arts Degree****Admission to Courses in English**

You must have completed the Subject A requirement before taking any courses in English (other than English A or 2). For further information regarding Subject A, see "Undergraduate Degree Requirements" in Chapter 2.

**Preparation for the Major**

*Required:* English 3, 4, 10A, 10B, 10C taken in the stated sequence (each course is a prerequisite for the next course).

*Extra-Departmental Requirement in Foreign Literature or Foreign Language:* All English majors must have completed either (1) level five or equivalent in any one foreign language or (2) level three or the equivalent of one foreign language and two additional courses in foreign language or foreign literature, including foreign literature in translation (see course listings later in this chapter). Italian 46 may not be applied. The courses may be taken on a P/NP grading basis.

**The Major**

*Required:* English 141A or 141B, 142A, 142B, 143, at least one course from the 180 series, and a minimum of seven additional upper division English courses. At least five of the seven courses must be selected from 140A, 140B, 142C, or 150 through 190. At least one of the seven courses must be in literature before 1800 (the 150 series).

You are encouraged to choose additional electives from courses 140A through M197. English 140A is especially recommended if you plan graduate work in literature. You may wish to select several courses in the relevant classical and postclassical foreign literatures and thought.

**Special Programs**

The department offers special programs in American studies, creative writing, and general literature, and one for international students. For all programs, the regular "Preparation for the Major" sequence as well as the departmental foreign language requirement apply. Because of the specialized nature of these programs, students should consult the departmental counselor before selecting and declaring one of them as a concentration.

**American Studies** — This program consists of nine upper division courses in English and six related upper division courses taken in other departments. The nine English courses must include 178; one course from M102 through M107A or 109; two courses from 142A, 142B, 143; three courses from the 170 series, with at least one course from 170, 171, or 172, and no more than one course from 176 or 177; and one course pertaining to American studies selected from 187, 188, or 189, taken preferably in the senior year. Of the six upper division courses in other departments, four must be in a selected discipline (history, political science, sociology, etc.). One of the four courses must deal with the methodology of the discipline, while the other three must explicitly treat American culture. The courses must be selected in consultation with the English departmental counselor.

**General Literature** — This program consists of nine upper division courses in English or American literature and six upper division courses in foreign literatures (at least one of which must be taught in the original language). The nine English courses must include 141A, 141B, or 143; 142A and 142B; at least one course from the 150 series; and four electives selected from courses 140A through M197 (students intending graduate work in literature are especially encouraged to take English 140A). A listing of acceptable courses may be obtained from the department.

**Creative Writing** — This program consists of English 142A and 142B and a minimum of 10 additional upper division English courses: three creative writing courses from the 133A through 135C series, taken in a single genre (poetry, short story, or drama), three literature courses paralleling the creative writing specialization, and four electives selected from courses 140A through M197. You may declare this program as a concentration only after you have completed three creative writing workshops in a single genre. If you are planning to select this program, you are encouraged to take course 20; for further details, contact the departmental counselor.

**International Students Program** — The department offers a special program in English to bona fide international students whose native language is other than English. For this program, you must satisfy all requirements listed under "Preparation for the Major"; you may fulfill the departmental foreign language requirement with your own native language. The following 12 courses are required for the program itself: English as a Second Language 103, 106, 109; two courses from English 100 through 199; 122; 142A, 142B; and four additional courses from those numbered 140A through 199. If you complete this program and wish to pursue graduate study, you should consult the departmental counselor about programs of study and requirements for admission.

### National Teachers Examination Waiver for Instructional Credential in English

On request the department will provide a letter asking for a waiver of the National Teachers Examination (NTE) to qualified graduating English majors. To qualify, you must complete either English 120A and 130A (elementary school) and at least one American literature course selected from 170 through 174, or English 120B and 130B (secondary school) and at least one American literature course selected from 170 through 174, as part of or in addition to the major. If you are interested in elementary school education, you are strongly urged to participate in the Diversified Liberal Arts Program (DLAP), administered by the College Counseling Service, A316 Murphy Hall. You are also encouraged to select additional courses in language, children's literature, literature for adolescents, American literature, and literature for minorities as some of your electives. The NTE is only one requirement in obtaining an instructional credential. For additional information on courses leading to the credential, consult the Graduate School of Education at (310) 825-8328.

### Honors Program

**Admission** — The honors program is open to English majors with a 3.5 departmental and a 3.25 overall grade-point average. If you have a lower GPA, you may petition for admission to the program, but these grade-point averages must be achieved before graduation in order to qualify for honors. You should apply by Spring Quarter of your junior year. For application forms and further information, contact the departmental counselor.

**Requirements** — All honors students are required to take English 140A during the junior year and one seminar from the English 180 through 189 sequence, preferably before the senior year. In Fall Quarter of your senior year, you must take course 199HA. During Winter and Spring Quarters, you take courses 199HB and 199HC, in which you write a thesis under the direction of a faculty member. The thesis

determines whether you receive high honors, honors, or no honors.

### Bachelor of Arts in English/Greek

See Classics

### Bachelor of Arts in English/Latin

See Classics

### M.A. and Ph.D. Degrees

All students admitted into the UCLA English graduate program with a B.A. must enter the M.A. course of study, which also serves as the first phase of the doctoral program. The M.A. degree may be obtained either by passing the first qualifying examination (which also grants admission into the second phase of the doctoral program) or by writing a thesis. Students admitted with a master's degree may waive some course requirements but must pass the first qualifying examination.

### Admission

Admission to the program is based on a thorough review of the student's academic record. Ordinarily, students holding the B.A. are expected to meet these minimum requirements: an undergraduate major or program that provides preparation for advanced study of literature; a grade-point average in all English courses and in the junior and senior years of at least 3.5; and a recent (within the last five years) score on the Graduate Record Examination (GRE) of 650 on both the verbal section of the General Test and the Literature in English Subject Test or a combined score of 1,300. Applicants holding the M.A. are expected to have a grade-point average of at least 3.7 in all graduate courses and a correspondingly higher score on the Literature in English Subject Test. A minimum of three letters of recommendation attesting to your ability to succeed in graduate study and a writing sample are also required. Care should be taken with the *statement of purpose and the writing sample*, since the quality of thought and argument they exhibit, as well as their style, weigh significantly in admissions decisions. For a descriptive brochure, write to the Graduate Assistant, Department of English, 2225 Rolfe Hall, UCLA, Los Angeles, CA 90024-1530.

If you elect the M.A. thesis option, you may, on completion of that course of study, petition to enter the doctoral program provided you have maintained a grade-point average of at least 3.7 in your graduate studies and are recommended by your thesis committee. Such petitions are not automatically approved and should be accompanied by appropriate supporting materials.

### Foreign Language Requirement

If you are pursuing only the M.A. degree, you may fulfill the language requirement by demonstrating reading knowledge of any foreign language. This requirement should be satisfied at the beginning of your first term in residence, but in any event no later than the midpoint of the term in which you complete all degree requirements.

If you are pursuing the Ph.D., you are expected to have reading knowledge of two foreign languages or to demonstrate superior proficiency in a single language (which must have prior approval of the vice chair of graduate studies). The departmentally approved languages are French, German, Italian, Spanish, Latin, and Greek, but other languages may be substituted by petition on the basis of a special research interest.

### Course Requirements

Nine letter-graded English courses from the 200 series are required for the M.A. If you enter the program with an M.A. in English, some of your prior coursework may be accepted by petition. An additional five letter-graded courses are required for the Ph.D.

### Teaching Experience

Although teaching experience is not required, most students in the Ph.D. program have the opportunity to serve as teaching assistants after passing English 495A and being in the program for at least one year. Teaching assistantships are awarded on the basis of merit.

### Qualifying Examinations

The doctoral program is divided into three stages, the first two of which culminate in the first and second qualifying examinations.

#### First Stage

*First Qualifying Examination Option* — If you are pursuing the Ph.D. degree, you take the first qualifying examination sometime early in your third year in the program. The examination consists of written work from any two seminars (substantial seminar papers) and a two-hour oral test in three historical periods or in two historical periods and one genre. The graduate faculty decides in each case whether to grant an M.A. and whether you will be admitted to the second stage of the Ph.D. program. Further details on breadth and philology requirements are available from the department.

*Terminal M.A. Thesis* — Students electing to take a terminal M.A. must request a thesis committee (three faculty members) from the graduate counselor at least two terms before completing the program. The committee then meets with you to consider your thesis proposal. Your thesis should not be less than 40 nor more than 60 pages in length.

#### Second Stage

In this stage of the program, you are encouraged to take as many seminars as possible

(any graduate seminar may be repeated for credit), as well as suitable courses in other departments. When sufficiently well prepared and after satisfying the second language requirement, you take the second qualifying examination.

**Second Qualifying Examination** — The University Oral Qualifying Examination, at least two hours in length, deals with your prospectus, a substantially researched paper which has been approved by the committee chair and distributed to the doctoral committee at least two weeks before the scheduled examination. The committee must certify that the prospectus has been approved. If you fail the examination, you may, at the discretion of the committee, repeat it once only.

### Third Stage/Candidate in Philosophy Degree

Once you have passed the second qualifying examination, you may advance to candidacy and, on application, receive the Candidate in Philosophy (C.Phil.) degree. You may then proceed with the writing of the dissertation.

### Final Oral Examination

A final oral defense of the dissertation is optional with the doctoral committee but is usually not required.

## Lower Division Courses

**A. Introduction to University Discourse (No credit).** See listing under "English Composition."

**2. Approaches to University Writing.** (Formerly numbered B.) See listing under "English Composition."

**3. English Composition, Rhetoric, and Language.** See listing under "English Composition."

**3H. English Composition, Rhetoric, and Language (Honors).** See listing under "English Composition."

**4. Critical Reading and Writing.** Prerequisites: satisfaction of Subject A requirement, course 3 or equivalent. Introduction to literary analysis, with close reading and carefully written exposition of selections from one or more of the principal modes of literature: poetry, prose fiction, and drama. Minimum of six papers (three to five pages each).

**4H. Critical Reading and Writing (Honors).** Discussion, three hours. Prerequisites: satisfaction of Subject A requirement, course 3 or equivalent, consent of department. Introduction to literary analysis, with close reading and carefully written exposition of selections from one or more of the principal modes of literature: poetry, prose fiction, and drama. Minimum of six papers (three to five pages each).

**10A. English Literature to 1660.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4. Study of selected works of the period, beginning with selections from Old English poetry and including writings by Chaucer, Spenser, Shakespeare, Donne, and Milton. Minimum of three papers (three to five pages each) or equivalent.

Mr. Allen, Mr. Condren, Mr. Rodes

**10B. English Literature, 1660-1832.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A. Study of selected works of the period, including writings by Dryden, Pope, Swift, Wordsworth, and Keats. Minimum of three papers (three to five pages each) or equivalent.

Mr. Batten, Mr. Burwick, Mr. Novak

**10C. English Literature, 1832 to the Present.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B. Study of selected works of the period, including writings by Tennyson, Arnold, Browning, Yeats, Joyce, and Eliot. Minimum of three papers (three to five pages each) or equivalent.

Mr. Aguirre, Mr. Berst, Mr. Kolb

**20. Introduction to Creative Writing.** Prerequisites: satisfaction of Subject A requirement, course 3 or equivalent, submission of creative or expository writing samples to a screening committee. Designed to introduce fundamentals of creative writing. Emphasis either on poetry, fiction, or drama, depending on wishes of instructor(s) during any given term. Readings from assigned texts and weekly writing assignments required.

**70. Major British Authors before 1800.** Prerequisite: satisfaction of Subject A requirement. Not open for credit to English majors or students with credit for course 10A or 10B. Study of selected masterpieces of English literature before 1800, including works of such writers as Chaucer, Shakespeare, Donne, Milton, Swift, Pope, Johnson, and Fielding.

Mr. Rousseau

**75. Major British Authors, 1800 to the Present.** Prerequisite: satisfaction of Subject A requirement. Not open for credit to English majors or students with credit for course 10B or 10C. Study of selected masterpieces of English literature from 1800 to the present, including works of such writers as Wordsworth, Coleridge, Keats, Tennyson, Dickens, Browning, Yeats, Joyce, and Eliot.

Mr. Berst, Mr. Hutter, Mr. Kolb

**80. Major American Authors.** Prerequisite: satisfaction of Subject A requirement. Not open for credit to English majors or students with credit for any courses in the 170 series. Introduction to the chief American authors, with emphasis on poetry, nonnarrative prose, and short fiction of such writers as Poe, Dickinson, Emerson, Whitman, Twain, Frost, and Hemingway.

Ms. Garfield, Mr. Goodwin, Mr. Wortham

**85. The American Novel.** Prerequisite: satisfaction of Subject A requirement. Not open for credit to English majors or students with credit for course 171, 172, or 174. Development, with emphasis on form, of the American novel from its beginning to the present day. Includes works of such novelists as Hawthorne, James, Fitzgerald, and Faulkner.

Mr. Allmendinger, Ms. Saldivar-Hull

**88A-88Z. Lower Division Seminars: Special Topics in English.** Seminar, three hours. Limited to 15 students. Content varies; see departmental counselor for information. P/NP or letter grading. **88A.** Medieval Literature; **88B.** Renaissance Literature; **88C.** 17th-Century Literature; **88D.** 18th-Century Literature; **88E.** Romantic Literature; **88F.** Victorian Literature; **88G.** 20th-Century British Literature; **88H.** Colonial American Literature; **88I.** 19th-Century American Literature; **88J.** 20th-Century American Literature; **88K.** History of English Language; **88L.** Folklore and Mythology; **88M.** Literature and Society;

**88K.** Introduction to English Etymology. Prerequisite: freshman standing. Historical sources of English word roots and affixes; linguistic rules governing phonetic and prosodic changes in native and borrowed vocabulary; and ways in which English words have changed their meaning through time. Ms. Minkova

**88L.** Poetics of Myth. Prerequisite: freshman standing. Exploration of categories of *myth/mythology* as they have been formulated, applied, and expanded in both Western and non-Western literary traditions, from time of ancient Sumer to our own time.

Mr. Nagy

**88M.** When Myth Systems Collide: 20th-Century Literature and Culture Confront Traditional Myths. Prerequisite: freshman standing. Exploration of how 20th-century literature and culture challenge traditional ways of viewing life. Four oral presentations and 10-page paper required.

Mr. Batten

**90. Shakespeare.** Prerequisite: satisfaction of Subject A requirement. Not open for credit to English majors or students with credit for course 142A or 142B. Survey of Shakespeare's plays, including comedies, tragedies, and histories, selected to represent Shakespeare's breadth, artistic progress, and total dramatic achievement.

Mr. Little, Mr. Rodes, Ms. Rowe, Mr. Watson

**95A. Introduction to Poetry.** Prerequisite: satisfaction of Subject A requirement. Recommended for instructional credential candidates. Study of critical issues (metrics, diction, figurative language, symbolism, irony and ambiguity, form and structure) and aesthetic issues, including evaluative criteria, followed by close critical analysis of a selection of representative poems. P/NP or letter grading.

Mr. Grose, Mr. Sheats, Mr. Thorslev

**95B. Introduction to Drama.** Prerequisite: satisfaction of Subject A requirement. Examination of representative plays; readings may range from Greek to modern drama. Emphasis on critical approaches to dramatic text; study of issues such as plot construction, characterization, special uses of language in drama, methods of evaluation. P/NP or letter grading.

Mr. Berst, Mr. Rodes

**95C. Introduction to Fiction.** Prerequisite: satisfaction of Subject A requirement. Introduction to prose narrative, its techniques and forms. Analysis of short and long narratives and of critical issues such as plot, characterization, setting, narrative voice, realistic and nonrealistic forms. P/NP or letter grading.

Mr. Anderson

**96. The Short Story in England and America.** Prerequisite: satisfaction of Subject A requirement. Historical survey of the short story as a genre, from the 19th century to the present. P/NP or letter grading.

Mr. Anderson

**97H. Honors Seminar for Freshmen and Sophomores.** (Formerly numbered 197H.) Seminar, three hours. Prerequisites: courses 3, 4. Limited to 15 students. Recommended for lower division students who anticipate entering English honors program during their junior year. Content varies; see departmental counselor for information.

Mr. Batten

## Upper Division Courses

**100. Introduction to Special Topics and Genres.** Prerequisite: satisfaction of Subject A requirement. Study of a particular topic, genre, or subgenre in literature such as satire, biography, parody, or a specialized classification of literature. May be repeated for credit. P/NP or letter grading.

Mr. Anderson, Mr. Tennyson

**100W. Intensive Writing.** See listing under "English Composition."

**100WH. Intensive Writing (Honors).** See listing under "English Composition."

**101. Gay and Lesbian Literature.** (Formerly numbered 100.) Prerequisite: satisfaction of Subject A requirement. Late-19th- and 20th-century fiction, drama, and poetry written on gay and lesbian themes. Special emphases (on different genres and on gay male or lesbian literature) vary with individual instructors.

**M102. Asian American Literature.** (Same as Asian American Studies M102.) Prerequisite: satisfaction of Subject A requirement. Prose and poetry by Americans of Chinese, Japanese, Filipino, and Korean origins. Study of interaction of autobiography and fiction, nourishing and limiting influences of mainstream American and Asian literary traditions, and conflict between ideological and literary criteria.

Ms. Cheung

**103. Jewish American Fiction.** Prerequisite: satisfaction of Subject A requirement. Study of the fiction of Jewish writers in America, such as Bellow, Malamud, and Roth, focusing on encounter of Jewish ethical ideals and social values with the contemporary environment.

Mr. Novak

**M104A. Early Afro-American Literature.** (Same as Afro-American Studies M104A.) Prerequisite: satisfaction of Subject A requirement. Introductory survey of black American literature from the 18th century through World War I, including oral and written forms (folktales, spirituals, sermons; fiction, poetry, essays), by authors such as Phillis Wheatley, David Walker, Frances Harper, Frederick Douglass, Harriet Jacobs, Paul Laurence Dunbar, Charles W. Chesnut, Booker T. Washington, and Pauline Hopkins.

Ms. Smith, Mr. Yarborough

**M104B. Afro-American Literature from the Harlem Renaissance to the 1960s.** (Same as Afro-American Studies M104B.) Prerequisite: satisfaction of Subject A requirement. Introductory survey of 20th-century black American literature from New Negro Movement of post-World War I period to the 1960s, including oral materials (ballads, blues, speeches) and fiction, poetry, and essays by authors such as Jean Toomer, Claude McKay, Langston Hughes, Sterling Brown, Nella Larsen, Zora Neale Hurston, Richard Wright, Ann Petry, James Baldwin, and Ralph Ellison.

Ms. Smith, Mr. Yarborough

**M104C. Afro-American Literature since the 1960s.** (Same as Afro-American Studies M104C.) Prerequisite: satisfaction of Subject A requirement. Introductory survey of diverse forms of Afro-American literary expression produced from rise of Black Arts Movement of the 1960s to the present by writers such as Amiri Baraka, Nikki Giovanni, Alice Walker, Etheridge Knight, Toni Morrison, Martin Luther King, Jr., Paule Marshall, Ernest Gaines, Ishmael Reed, and Audre Lorde. P/NP or letter grading.

Ms. Smith, Mr. Yarborough

**M105. The Chicano Experience in Literature.** (Same as Chicana and Chicano Studies M105.) Prerequisite: satisfaction of Subject A requirement. Study of literature in English by and about Chicanos. Survey of depiction of the Chicano experience in American literature generally, with emphasis on development of Chicano literature itself, its cultural backgrounds, and distinctive uses of language.

Mr. Paredes, Ms. Saldívar-Hull

**106. Native American Literary Studies.** Prerequisite: satisfaction of Subject A requirement. Study of Native American oral cultures through translated documents (song-poems, life-stories, myths, tales, dream visions, speeches) and/or images in writing about Native Americans (poetry, fiction, history, anthropology, sociology).

Mr. Lincoln, Mr. Sarris

**M107A. American Women Writers.** (Same as Women's Studies M107A.) Prerequisite: satisfaction of Subject A requirement. Survey of literary works by American women writers, with emphasis on roles of women, portrayal of nature and society, and evolution of forms and techniques in writing by American women.

Ms. Banta, Ms. Rowe

**M107B. British Women Writers.** (Same as Women's Studies M107B.) Prerequisite: satisfaction of Subject A requirement. Survey of literary works by British women writers, with emphasis on roles of women, portrayal of nature and society, and evolution of forms and techniques in writing by British women.

Ms. Lewis, Ms. Mellor

**M107C. Special Topics in Women and Literature.** (Same as Women's Studies M107C.) Prerequisite: satisfaction of Subject A requirement. Variable specialized studies course in women and literature, with emphasis on a period, genre, particular theme, or nonnational literary grouping.

Ms. Allen, Ms. Cheung, Ms. Smith

**108A-108B. The English Bible as Literature.** Prerequisite: satisfaction of Subject A requirement. Principal literary monuments of the Old and New Testaments in King James Version. **108A.** Old Testament; **108B.** New Testament.

Mr. Aguirre, Mr. Batten, Mr. Post

**108C. The English Bible as Literature: Special Topics.** Prerequisite: satisfaction of Subject A requirement. Study of the English Bible, with attention to particular literary themes, motifs, and genres. Possible discussion of influence of the Bible on discrete periods or individual authors in English literature. May be repeated for credit.

Mr. Aguirre

**109. Interdisciplinary Approaches to Literature.** Prerequisite: satisfaction of Subject A requirement. Study of British or American literature in relation to other disciplines such as history, politics, philosophy, psychology. May be repeated for credit.

Mr. Burwick, Mr. Maniquis

**110. Studies in Individual Authors.** Prerequisite: satisfaction of Subject A requirement. Specialized study of the work of a single poet, dramatist, prose writer, or novelist. May be repeated for credit.

**M111A. Literature of Myth and Oral Tradition.** (Same as Folklore M111.) Prerequisite: satisfaction of Subject A requirement. Study of myth, dramatic origins, oral epic, folktale, and ballad, emphasizing Indo-European and Semitic examples.

Mr. Cosentino, Mr. Nagy

**M111B. Anglo-American Folk Song.** (Same as Ethnomusicology M124 and Folklore CM106.) Survey of Anglo-American balladry and folk song, with attention to historical development, ethnic background, and poetic and musical values.

Mr. Porter

**M111C. British Folklore and Mythology.** (Same as Folklore M121.) Prerequisites: satisfaction of Subject A requirement, junior standing. Survey of folklore of the peoples of Britain, with attention to their history, function, and regional differences.

Mr. Nagy, Mr. Porter

**M111D. Celtic Mythology.** (Same as Folklore M122.) Lecture, three hours; discussion, one hour. Survey of early materials, chiefly literary, for study of mythic traditions of the Celtic peoples, ranging from ancient Gaul to medieval Ireland and Wales.

Mr. Nagy

**M111E. Survey of Medieval Celtic Literature.** (Same as Folklore M112.) Prerequisite: satisfaction of Subject A requirement. Knowledge of Irish or Welsh not required. General course dealing with Celtic literature from earliest times to the 14th century.

Mr. Nagy

**M111F. Celtic Folklore.** (Same as Folklore M127.) Prerequisite: Folklore 101 or consent of instructor. Folkloric traditions of modern Ireland, Scotland, and other Celtic countries, with attention to current techniques of folkloric research.

Mr. Nagy

**M111G. Oral Traditions in Africa.** (Same as Folklore M155.) Prerequisite: upper division standing. Survey of African folk traditions: folktale, epic, heroic poetry, and folk song.

Mr. Cosentino

**112. Children's Literature.** Prerequisite: satisfaction of Subject A requirement. Study of historical backgrounds and development of types of children's literature, folklore and oral tradition, levels of interest, criticism and evaluation, illustration and bibliography.

**113. Literature for Adolescents and Young Adults.** Prerequisite: satisfaction of Subject A requirement. Analysis and evaluation of literature intended mainly for students in junior and senior high schools. Review of mature books that are popularly suggested for this age group; study of interests and reading habits of young adults.

**114. World Literatures in English.** Prerequisites: satisfaction of Subject A requirement, consent of instructor. Survey of contemporary literature from English-speaking regions of the world, reviewing major genres from several countries and making cross-comparisons with the literatures. Generalizations concerning the nature of the English used by such writers. May be repeated for credit.

Mr. Cosentino, Ms. See

**115A. American Popular Literature.** Prerequisite: satisfaction of Subject A requirement. Study of main currents of popular and cultural taste as reflected in such genres as dime novels, detective fiction, and Western stories.

Mr. Nagy, Mr. Paredes

**115B. British Popular Literature.** Prerequisite: satisfaction of Subject A requirement. Readings in the literature of the British masses, from 16th-century broadsides to contemporary novels. Examination of social functions of literature.

Mr. Nagy

**116. Science Fiction.** Prerequisite: satisfaction of Subject A requirement. Study of science fiction and speculative literatures.

Mr. Guffey

**117. Detective Fiction.** Prerequisite: satisfaction of Subject A requirement. Study of British and American detective fiction and the literature of detection.

Mr. Hutter

**118. Film and Literature.** Prerequisite: satisfaction of Subject A requirement. Study of interdisciplinary relationships between film and literature, including theme and structure, and focusing on cinematic adaptations of literary works.

Mr. Goodwin

**119. Literature of California and the American West.** Prerequisite: satisfaction of Subject A requirement. Study of literature in English dealing with exploration, settlement, and emergent cultural awareness of the Western U.S. P/NP or letter grading.

Mr. Allmendinger, Mr. Wortham

**120A. Language Study for Teachers: Elementary School.** See listing under "English Composition."

**120B. Language Study for Teachers of English: Secondary School.** See listing under "English Composition."

**120C. Language Study for Teachers of Subjects Other Than English: Secondary School.** See listing under "English Composition."

**121. History of the English Language.** Prerequisite: satisfaction of Subject A requirement. Study directed toward English majors of main features in grammatical, lexical, and phonetic condition of the English language from Indo-European time to the present.

Mr. Condren, Ms. Minkova

**122. Introduction to Structure of Present-Day English.** Prerequisite: satisfaction of Subject A requirement. Introduction to techniques of linguistic description as applied to pronunciation, grammar, and vocabulary of modern English.

Ms. Minkova

**129. Intermediate Exposition.** See listing under "English Composition."

**129H. Intermediate Exposition (Honors).** See listing under "English Composition."

**130A. Composition for Teachers: Elementary School.** See listing under "English Composition."

**130B. Composition for Teachers: Secondary School.** See listing under "English Composition."

**131A-131J. Advanced Exposition.** See listing under "English Composition."

**132. Composition and Society.** See listing under "English Composition."

**133A-133B-133C. Creative Writing: Poetry.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, consent of instructor (following submission of writing samples). Weekly exercises in writing of poetry, with practice in standard forms and meters and study of techniques. Classroom discussion based on student use. Only one course in sequence may be repeated for credit.

Mr. Yenser

**134A-134B-134C. Creative Writing: Short Story.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, consent of instructor (following submission of writing samples). Three stories of average length to be completed during each term. Some of these may, with instructor's consent and student's wish, be substantial revisions of other stories presented. Classroom discussion based on stories presented. Only one course in sequence may be repeated for credit.

Ms. Allen, Ms. See

**135A-135B-135C. Creative Writing: Drama.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, consent of instructor (following submission of writing samples). Exploration of capacity of each student to write for the theater. Class discussion of student writing, individual conferences, rehearsed readings, and laboratory productions. Only one course in sequence may be repeated for credit.

Mr. Kessler, Mr. Rodes

**136A-136B-136C. Practical Writing and Editing.** See listing under "English Composition."

**137. Advanced Computer Techniques for Students of English.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C, and Program in Computing 1 and 10A or consent of instructor. Concurrent instruction in writing computer programs for literary study and in the kinds of literary research that can be aided by computers. BASIC is taught; students must know how to operate a computer. Principles of computer science neither assumed nor taught. Mr. Dearing

**140A. Criticism: History and Theory.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Study of some major historical documents and theoretical statements in history of literary criticism, including works by such writers as Plato, Aristotle, Horace, Sidney, Dryden, Johnson, Kant, Coleridge, Wordsworth, Shelley, Arnold, James, Croce, and T.S. Eliot, with emphasis on major critical positions posed and developed by these writers, basis of their theoretical positions, and practical consequences of those positions. Possible discussion of recent trends in criticism. Mr. Kolb, Mr. Pecora

**140B. Criticism: Special Topics.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Study of limited periods and specialized issues and approaches in history of literary criticism, including moral, biographical, sociological, psychological, formal, structural, and deconstructionist. Area of concentration determined by instructor and listed in *Schedule of Classes*. Some study of literary texts, to illuminate the value and practical application of the approach, may be required. Mr. Pecora, Mr. Reinhard

**141A. Chaucer: The Canterbury Tales.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Introductory study of Chaucer's language, versification, and historical and literary background, including analysis and discussion of his long major poem, *The Canterbury Tales*. Satisfies department's Chaucer requirement. Mr. Condren, Mr. Kolve, Ms. Ridley

**141B. Chaucer: Troilus and Criseyde and Selected Minor Works.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Intensive study of *Troilus and Criseyde* and selected minor works of Chaucer, such as *The Book of the Duchess*, *The House of Fame*, *The Parliament of Fowls*, etc. Satisfies department's Chaucer requirement. Mr. Condren, Mr. Kelly, Ms. Ridley

**142A. Shakespeare: Poems and Early Plays.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Intensive study of selected poems and representative comedies, histories, and tragedies through *Hamlet*. Mr. Allen, Mr. Gallagher, Mr. Post

**142B. Shakespeare: Later Plays.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Intensive study of representative problem plays, major tragedies, Roman plays, and romances. Mr. Braunmuller, Mr. Gallagher, Mr. Watson

**142C. Shakespeare: Selected Topics.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C, 142A, 142B. Designed for students interested in further study of Shakespeare. Limits of investigation set by individual instructors. Mr. Allen, Mr. Braunmuller, Mr. Rodes

**143. Milton.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Study of major works of Milton, with emphasis on *Paradise Lost*. Mr. Grose, Mr. Guffey, Ms. Lewis

**150. Later Medieval Literature.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Reading and historical explication of major writers of the 14th and 15th centuries (e.g., the Gawain-poet, Langland, Gower, Malory, miracle and morality plays, prose, and lyrics). The more difficult texts read in modernized form. Mr. Condren, Mr. Kipling, Mr. Kolve

**151. Elizabethan Literature.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Study of English literature of the 16th century, with special emphasis on development and interrelationships of poetry, prose, fiction, and literary theory and criticism during reign of Elizabeth I. Mr. Kipling, Ms. McEachern, Mr. Watson

**152A. Drama from the Beginning to 1576.** Prerequisites: courses 3, 4, 10A, 10B, 10C. English drama from its Latin and Anglo-Norman roots to opening of first public playhouse. P/NP or letter grading. Mr. Kipling, Mr. Kolve

**152B. Drama, 1576-1642.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Non-Shakespearean English drama from opening of first public playhouse to closing of the theaters. P/NP or letter grading. Mr. Braunmuller, Mr. Little

**153. Literature of the Early 17th Century, 1600-1660.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Study of major works as literary documents and as products of 17th-century thought. Work of Milton excluded. Mr. Grose, Mr. Post

**154. Literature of the Restoration and Earlier 18th Century, 1660-1730.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Study of major works as literary documents and as products of the Restoration and earlier 18th-century thought. Ms. Lewis, Mr. Roper, Mr. Rousseau

**155. Literature of the Later 18th Century, 1730-1798.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Study of major works as literary documents and as products of later 18th-century thought. Ms. Lewis, Mr. Novak, Mr. Roper

**156. Drama, 1660-1842.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Survey of English drama from the Restoration to the Licensing Act. Mr. Batten, Mr. Novak, Mr. Rodes

**157. The Novel to 1832.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Survey of works of major English novelists from Defoe through Scott. Mr. Batten, Mr. Lehan, Mr. Rousseau

**160. Earlier Romantic Poetry and Prose.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Intensive study of poetry and prose of Blake, Wordsworth, and Coleridge, with collateral readings from such authors as Godwin, Burke, Paine, Burns, Southey, Lamb, DeQuincey, and Scott. Mr. Maniquis, Ms. Mellor, Mr. Sheats

**161. Later Romantic Poetry and Prose.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Intensive study of poetry and prose of Keats, Shelley, and Byron, with collateral readings from such authors as Hazlitt, Hunt, Landor, Clare, Moore, and Peacock. Mr. Burwick, Mr. Maniquis

**162. Earlier Victorian Poetry and Prose.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Study of poetry and prose of the Victorian age from passage of the first Reform Bill through the high Victorian period, including such authors as Tennyson, Browning, Arnold, Carlyle, Mill, and Newman. Mr. Kolb, Mr. Tennyson

**163. Later Victorian Poetry and Prose.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Study of poetry and prose of the later Victorian age from Pre-Raphaelitism through the aesthetic and decadent movements, along with other intellectual trends, including such authors as Ruskin, Swinburne, Pater, Hopkins, Hardy, Wilde, and Yeats. Mr. Kolb, Mr. Tennyson

**164. The Novel, 1832-1900.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Survey of major English novelists from Dickens through Hardy. Mr. Anderson, Mr. Hutter

**165. 20th-Century British Poetry.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Survey of major British poets, including Yeats, Eliot, Auden, and Hughes, from 1900 to the present. Mr. Bedient, Mr. Kolb, Mr. North

**166. 20th-Century British Fiction.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Survey of major British novelists and short story writers, including Conrad, Joyce, Woolf, and Lawrence, from 1900 to the present. Mr. Kolb, Mr. Lincoln, Mr. Pecora

**167. Drama, 1842-1945.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C (for theater and film and television majors the 10A, 10B, 10C prerequisites are waived). Survey of British and American drama, with its principal continental influences, from 1842 through World War II. Mr. Berst, Mr. Braunmuller, Mr. Goodwin

**168. Drama, 1945 to the Present.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Study of British and American drama, with its principal continental influences, since World War II. Mr. Berst, Mr. Braunmuller, Mr. Goodwin

**170. American Literature to 1800.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Historical survey of American literature through the Colonial and early national periods. Mr. Colacurcio, Ms. Packer, Ms. Rowe

**171. American Literature, 1801-1865.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Historical survey of American literature, including fiction, from beginning of the 19th century to end of the Civil War. Mr. Colacurcio, Ms. Packer, Mr. Wortham

**172. American Literature, 1866-1912.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Historical survey of American literature from end of the Civil War to founding of *Poetry* magazine. Ms. Banta, Mr. Wortham

**173. American Poetry, 1912-1945.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Development of American poetry from 1912 through World War II, including works of Frost, Eliot, Pound, Williams, and Stevens. Mr. Bedient, Mr. Yenser

**174. American Fiction, 1912-1945.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Development of American novel and short story from 1912 through World War II, including works of Hemingway, Fitzgerald, Faulkner, and Stein. Mr. Goodwin, Mr. Lehan, Mr. Yarrowborough

**176. American Poetry, 1945 to the Present.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Study of contemporary American poetry. Mr. Yenser

**177. American Fiction, 1945 to the Present.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Study of contemporary novel and short story. Ms. Smith

**178. Perspectives in Study of American Culture.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Interdisciplinary study of American literature in its relationships to other disciplines, including art, architecture, film, history, music, politics, and various social sciences, with emphasis on application of literary methodology to historical survey of American culture. Mr. Goodwin, Mr. Paredes

Courses 180 through 189 are designed to permit a small number of students (normally 15) to engage in concentrated study in an area in which they have a particular interest and in which they have taken adequate upper division background courses. **Prerequisites:** satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Consult *Schedule of Classes* for author, period, genre, or subject to be studied in a specific term. For further details, see the departmental counselor. Courses may be repeated for credit.

- 180. Specialized Studies in Medieval Literature.**  
**180X. Specialized Studies in Literature.**  
**181. Specialized Studies in Renaissance Literature.**  
**182. Specialized Studies in 17th-Century Literature.**  
**183. Specialized Studies in 18th-Century Literature.**  
**184. Specialized Studies in Romantic Literature.**  
**185. Specialized Studies in Victorian Literature.**  
**186. Specialized Studies in 20th-Century British Literature.**  
**187. Specialized Studies in Colonial American Literature.**  
**188. Specialized Studies in 19th-Century American Literature.**  
**189. Specialized Studies in 20th-Century American Literature.**  
**190. Literature and Society.** Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Intensive study of some aspect of relationship between literature and social, economic, or political history. May be repeated for credit. Mr. Goodwin  
**M197. Topics in Afro-American Literature.** (Same as Afro-American Studies M197.) Variable specialized studies course in Afro-American literature. Topics include the Harlem Renaissance; Afro-American Literature in the Nadir, 1890-1914; Contemporary Afro-American Fiction. May be repeated for credit. Ms. Smith, Mr. Yarborough

**197F. Rhetoric in Modern American Culture.** See listing under "English Composition."

**199. Special Studies in English (2 to 4 units).** Prerequisite: consent of instructor. Intensive directed research project. To enroll or obtain information, see departmental counselor.

**199HA. Honors Seminar.** Prerequisite: course 140A. Introduction to research techniques and study of various approaches and applications of critical methodology as it relates to interpretation and evaluation of texts. (F)

**199HB-199HC. Honors Tutorial.** Prerequisites: course 199HA, consent of instructor. Tutorial in which students write theses under direction of a faculty member. In Progress grading. (W,Sp)

**199I. Independent Studies for internships (2 to 4 units).** Prerequisite: consent of instructor. Independent studies course to be supervised jointly by Field Studies Office and faculty supervisor. Further supervision to be provided by business for which student is doing internship. P/NP grading.

## Graduate Courses

**200. Approaches to Literary Research.** Bibliographical tools of English and American literary scholarship; introduction to descriptive bibliography and basic methods of research. Periods covered vary. Mr. Batten, Mr. Kipling

**201A. History of Literary Criticism.** (Formerly numbered 201.) Study of major documents in Western literary theory from Plato through T.S. Eliot. Mr. Lehan, Mr. Pecora

**201B. Modern Literary Criticism.** Study of developments and trends in 20th-century literary criticism. Mr. Pecora

**202. Enumerative and Descriptive Bibliography.** Problems in bibliography, texts, and editions, with practical application in compiling bibliographies, editing texts, and approaching literature through textual criticism.

**203. Computers and Literary Research.** Prior knowledge in this area not required. Practice in writing and using computer programs for analysis of literary style, content, and authorship.

**204. History of Rhetoric.** Reading of basic texts in history of rhetoric and selections from standard commentaries. Survey of classical period and medieval-to-modern period in alternate years. Mr. Lanham

**M205. Perspectives in American Folklore Research.** (Same as Folklore CM205.) Lecture, three hours. Prerequisite: Folklore 101 or consent of instructor. Examination of American folklore studies compared and contrasted with investigations in other countries, with emphasis on principal conceptual schemes and research orientations employed in study of folklore in American society. Mr. Georges, Mr. Jones

**210. History of the English Language.** Detailed study of history, characteristics, and changing forms of the language from its origin until about 1900. Ms. Minkova

**211. Old English.** Study of Old English grammar, lexicon, phonology, and pronunciation to enable students to read the literature silently and aloud. Reading of as much of the more interesting Old English prose and poetry as can be read in a term. Mr. Calder, Mr. Condren

**212. Middle English.** Prerequisite: course 211. Detailed study of linguistic aspects of Middle English and of representative examples of the better prose and poetry. Ms. Minkova

**213. Early Modern English.** Detailed study of phonology, morphology, syntax, and vocabulary of English between 1450 and 1750. Description and analysis of changes in the language in relation to intellectual, political, and social characteristics of the period. Ms. Minkova

**214. Modern English.** Description and analysis of modern English phonology, grammar, and vocabulary, using theory and techniques of contemporary linguistics. Survey of the evolution of American English and account of characteristic phonological and grammatical features of major regional varieties of English around the world. Ms. Minkova

**216A-216B. Old Irish.** Prerequisite: consent of instructor. Studies in grammar. Readings in the glosses and other texts. Comparative considerations. Mr. Nagy

**217A-217B. Medieval Welsh.** Prerequisite: consent of instructor. Studies in grammar. Readings in the Mabinogi and other texts. Comparative considerations.

**218. Celtic Linguistics.** Prerequisite: consent of instructor. Survey of salient features of Celtic linguistic stock in its Gaelic and British branches, with reference to position of Celtic within Indo-European languages.

**230. Workshop: Creative Writing (2 to 4 units).** Prerequisite: consent of instructor, following submission of writing samples in specified genre (poetry, fiction, or drama). May be repeated but may not satisfy more than one of the nine courses required for first qualifying examination nor any of the five courses required for second qualifying examination. Mr. Yenser

**M235. African Myth and Ritual.** (Same as Folklore M235.) Prerequisite: consent of instructor. Seminar on methods of analyzing African and African Diaspora myth and ritual. Mr. Cosentino

**238. Colloquium (2 to 4 units).** Special topics from various fields in lecture, proseminar, or seminar format. S/U grading.

Seminar courses (240 to the end of the 200 series) are open to all graduate students with adequate preparation and may be repeated for credit. Students must pre-enroll with the graduate counselor. Continuing students must sign up for seminars before the end of the preceding term. A prospectus announcing topics for all seminars is available in the department office in early summer for the ensuing academic year.

**240. Studies in History of the English Language.** Individual seminars dealing with any single historical period from Old English period to the present or development of a particular linguistic characteristic (phonology, syntax, semantics, dialectology) through various periods. Ms. Minkova

**241. Studies in Structure of the English Language.** Prerequisite: consent of instructor. Topics in various aspects of structure of modern English, especially syntax and semantics. Ms. Minkova

**242. Language and Literature.** Application of linguistics to literary analysis. Individual seminars dealing with a historical period (medieval and Renaissance, neoclassical, or 19th century and modern), specific authors, or contributions of specific groups of linguists to literary analysis. Mr. Grose, Mr. Lanham

**M243A. The Ballad.** (Same as Folklore M243A.) Prerequisite: consent of instructor. Study of English and Scottish popular ballads and their American derivatives, with some attention to European analogues.

**M243B. Problems in Ballad Scholarship.** (Same as Folklore M243B.) Prerequisite: course M243A or consent of instructor. Intensive investigation of a problem or problems in study of the popular ballad.

**244. Old and Medieval English Literature.** Studies in poetry and prose of Old and medieval English literature; limits of investigation set by individual instructor. Mr. Calder, Mr. Kelly, Mr. Kolve

**245. Chaucer.** Mr. Kelly, Mr. Kolve

**246. Renaissance Literature.** Studies in poetry and prose of Renaissance English literature, exclusive of Shakespeare; limits of investigation set by individual instructor. Mr. Gallagher, Mr. Kipling, Ms. Shuger

**247. Shakespeare.** Mr. Allen, Mr. Braunmuller, Mr. Watson

**248. Earlier 17th-Century Literature.** Studies in poetry and prose of 17th-century English literature up to the Restoration; limits of investigation set by individual instructor. Mr. Guffey, Ms. McEachern

**249. Milton.** Studies in poetry and prose of John Milton; limits of investigation set by individual instructor. Mr. Grose, Mr. Post

**250. Restoration and 18th-Century Literature.** Studies in English poetry and prose, 1660 to 1800; limits of investigation set by individual instructor. Mr. Novak, Mr. Roper, Mr. Rousseau

**251. Romantic Writers.** Mr. Burwick, Ms. Mellor, Mr. Sheats

**252. Victorian Literature.** Studies in English poetry and prose of the Victorian period; limits of investigation set by individual instructor. Mr. Kolb, Mr. Tennyson

**253. Contemporary British Literature.** Mr. Bedient, Mr. North

**254. American Literature to 1900.** Studies in Colonial and 19th-century American literature; limits of investigation set by individual instructor. Ms. Banta, Mr. Colacurcio, Ms. Packer

**255. Contemporary American Literature.** Studies in contemporary American poetry and prose; limits of investigation set by individual instructor. Ms. Hayles, Mr. Lehan, Mr. Yenser

**256. Studies in the Drama.** Studies in drama as a genre from its beginning to the present; limits of investigation set by individual instructor. Mr. Berst, Mr. Braunmuller

**257. Studies in Poetry.** Studies in various themes and forms of poetry from Old English to the present; limits of investigation set by individual instructor. Mr. Bedient, Mr. Yenser

**258. Studies in the Novel.** Studies in evolution of the genre from its beginning to the present; limits of investigation set by individual instructor. Mr. Lehan, Mr. Novak

**259. Studies in Criticism.** Mr. Guffey, Mr. Weber

**260. Studies in Literature and Its Relationship to the Arts and Sciences.** Studies in interrelationships of literature, arts, and sciences; limits of investigation set by individual instructor. Mr. Guffey, Ms. Hayles, Mr. Rousseau

**M260A. Topics in Asian American Literature.** (Same as Asian American Studies M297A.) Lecture, three hours. Graduate seminar that examines and critically evaluates writings of Asian Americans.

Ms. Cheung

**M262. Studies in Afro-American Literature.** (Same as Afro-American Studies M200E.) Prerequisite: consent of instructor. Intensive research and study of major themes, issues, and writers in Afro-American literature. Discussions and research on aesthetic, cultural, and social backgrounds of Afro-American writing. May be repeated for credit.

Ms. Smith, Mr. Yarborough

**263. Celtic Literature.** Lecture, three hours. Prerequisite: knowledge of one of the ancient or modern Celtic languages. Studies in poetry and prose of early and modern Celtic literatures, chiefly Irish and Welsh; limits of investigation set by individual instructor.

Mr. Nagy

**264. Studies in Rhetoric.** Discussion, three hours. Special topics in classical and modern rhetoric, including substantial practice in rhetorical analysis of literary texts.

Mr. Lanham

**265. Seminar: Literary Data Processing.** Prerequisites: courses 200, 203. Subjects alternate between (1) team writing of a large program to solve or help solve a research problem proposed by a faculty member (who usually joins in supervising the seminar) and (2) compilation and interpretation of literary statistics (with cooperation of a member of Statistical/Biomathematical Consulting Clinic).

**M266. Cultural World Views of Native America.** (Same as American Indian Studies M200B.) Seminar, three hours. Exploration of written literary texts from oral cultures and other expressive cultural forms — dance, art, song, religious and medicinal ritual — in selected Native American societies, as these traditional and tribal contexts have been translated into contemporary literary texts (fiction, poetry, essay, and drama). Survey, from secondary sources, of interdisciplinary methodological approaches taken from literary analysis, structural anthropology, folklore, linguistics, and ethnomusicology.

Ms. Allen, Mr. Lincoln, Mr. Sarris

**270A-270B. English for the Two-Year College.** Prerequisite: course 120B or 275. Discussion and practice of two-year college instruction in reading and composition. In Progress grading.

**272. Current Issues in Teaching English.** Focus on one of a variety of topics of special current interest.

Mr. Lanham

**275. Stylistics and the Teaching of English.** Strongly recommended for teaching assistants. Introduction to study of language and style and its application to teaching English, including rhetoric, linguistics, and grammar.

Mr. Lanham

**M298. Interdisciplinary Studies in the 17th and 18th Centuries.** (Same as History M298.) Topics vary according to participating faculty.

Mr. Brewer, Mr. Novak

**M299. Interdisciplinary American Studies (6 units).** (Same as History M299.) Discussion, four hours. Readings, discussion, and papers on a common theme, team-taught by faculty from different departments. Topics vary according to participating faculty. May be repeated for credit with consent of instructors.

Ms. Banta

**300. Teaching English.** See listing under "English Composition."

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May not be substituted for any departmental enrollment requirements. May be repeated for credit. S/U grading.

**495A-495B. Supervised Teacher Preparation (2 units each).** See listing under "English Composition."

**495C. Supervised Teacher Preparation (2 units).** See listing under "English Composition."

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study (2 to 4 units).** Prerequisite: consent of instructor. For students preparing for first qualifying examination or engaging in intensive directed research project. May not be applied toward any course requirement for degree. Consult graduate counselor to enroll or obtain information. S/U grading.

**597. Preparation for Ph.D. Examinations (4 to 12 units).** For second-stage Ph.D. students preparing for second qualifying examination. S/U grading.

**598. M.A. Research and Thesis Preparation (4 or 8 units).** Prerequisite: graduate standing. May not be applied toward any course requirement for degree. S/U grading.

**599. Ph.D. Dissertation Research (4 or 8 units).** Limited to Ph.D. candidates unable to enroll in seminars in their fields or to candidates concurrently enrolled in such seminars. (Exception to this rule must be requested by petition.) S/U grading.

## English Composition (Writing Programs)

Administration: 371 Kinsey Hall,  
(310) 206-6815

Student Services Office:  
271 Kinsey Hall, (310) 206-1145

### Lecturers

Bruce Beiderwell, Ph.D.  
Jennifer Bradley, Ph.D.  
Teddi Chichester, Ph.D.  
William Creasy, Ph.D.  
Esha De, Ph.D.  
Diane Durkin, Ph.D.  
Ed Frankel, M.A.  
Rachel Fretz, Ph.D.  
George Gadda, C.Phil.  
Lisa Gerrard, Ph.D. (*Distinguished Teaching Award*)  
Patricia Gilmore, Ph.D.  
Cheryl Giuliano, Ph.D. (*Distinguished Teaching Award*), Director  
Donna Gregory, Ph.D.  
Susan Griffin, Ph.D.  
Jeanne Gunner, Ph.D. (*Distinguished Teaching Award*), Assistant Director  
Daniel Hayes, M.F.A.  
Claudia Ingram, J.D., Ph.D.  
Janette Lewis, Ph.D. (*Luckman Distinguished Teaching Award*)  
Bonnie Lisle, Ph.D. (*Distinguished Teaching Award*)  
Sonia Maasik, M.A.  
Sandra Mano, Ph.D.  
John Mascaro, Ph.D.  
Anita McCormick, Ph.D.  
Cynthia Merrill, Ph.D.  
Geraldine Moyle, Ph.D.  
Mitzzy Myers, Ph.D.  
Stephen Osborne, Ph.D.  
Shelby Popham, Ph.D.  
Susan Popkin, Ph.D.  
Mike Rose, Ph.D.  
Jeffrey Smith, M.A.  
Ellen Strenski, Ph.D.

## Scope and Objectives

Students need writing proficiency at every stage of their university careers. Although UCLA does not have a composition major, this program offers a series of courses introducing the varieties of university discourse and providing instruction in basic to high-level skills. Besides courses which satisfy the University's Subject A and English Composition requirements, the program offers writing courses linked with courses in other departments, intermediate and advanced courses in exposition, language and composition courses for teachers, and a sequence of courses in professional writing and editing.

## Subject A

Every student who does not satisfy the Subject A requirement by presenting transfer credit or acceptable test scores is required to take, as early as possible during the first year in residence, either English A or 2. Placement in these courses is determined by performance on the Subject A Examination. For more information regarding Subject A, see "Undergraduate Degree Requirements" in Chapter 2.

## Composition Requirement

The College of Letters and Science and each of the University's professional schools set their own composition requirement. Completing English 3 with a grade of C or better meets the requirement in all divisions. For further information about the composition requirement, see the introductory copy for your college or school.

Students who score 660 or better on the CEEB English Composition Achievement Test are eligible to take the English 3 Proficiency Examination. Outstanding performance on this examination fulfills the composition requirement. For further information, contact the Student Services Office.

## Lower Division Courses

**A. Introduction to University Discourse (No credit).** Lecture, five hours. Prerequisite: appropriate score on Subject A Examination. English A displaces four units on student's Study List but yields no credit toward a degree. First course in reading university-level texts and framing written responses that employ a range of rhetorical strategies from paraphrase to analysis. Emphasis on revision, developing syntactic variety and academic vocabulary, and editing for grammar and style. Completion of this course with a grade of C or better or demonstration of minimum competence on Subject A Examination is prerequisite to English 2.

**2. Approaches to University Writing.** (Formerly numbered B.) Prerequisite: English A with a grade of C or better or appropriate score on Subject A Examination. Second course in university-level discourse, with analysis and critique of university-level texts. Emphasis on revision for argumentative coherence and effective style. Completion of this course with a grade of C or better meets Subject A requirement.

**3. English Composition, Rhetoric, and Language.** Lecture, three hours. Prerequisite: satisfaction of Subject A requirement by examination or by completion of course 2 with a grade of C or better. Rhetorical techniques and skillful argument. Analysis of varieties of academic prose and writing of a minimum of five formal papers (three to five pages each). Completion of this course with a grade of C or better satisfies English Composition requirement.



**3H. English Composition, Rhetoric, and Language (Honors).** Lecture, three hours. Prerequisites: satisfaction of Subject A requirement, consent of department. Rhetorical techniques and skillful argument. Analysis of varieties of academic prose and writing of a minimum of five formal papers (three to five pages each).

## Upper Division Courses

**100W. Intensive Writing.** Prerequisite: satisfaction of Subject A and English Composition requirements. Students must be concurrently enrolled in a course offered in conjunction with English 100W (consult *Schedule of Classes* for courses so designated). Writing assignments use materials from adjunct course and develop analytical reading and writing skills needed for work in its discipline.

**100WH. Intensive Writing (Honors).** Prerequisite: satisfaction of Subject A and English Composition requirements. Students must be concurrently enrolled in an honors course offered in conjunction with English 100WH (consult *Schedule of Classes* for courses so designated). Writing assignments use materials from adjunct course and develop analytical reading and writing skills needed for work in its discipline.

**120A. Language Study for Teachers: Elementary School.** Prerequisite: satisfaction of Subject A and English Composition requirements. Survey of topics in English linguistics of special interest to elementary school teachers. Subjects include approaches to English grammar; language acquisition and development; language attitudes; regional and social dialects of American English; bilingual schooling; contribution of English language study to teaching of reading, writing, spelling, and literature.

**120B. Language Study for Teachers of English: Secondary School.** Prerequisite: satisfaction of Subject A and English Composition requirements. Review of terminology of English grammar and survey of development of modern grammars, with special attention to transformational-generative grammar. Introduction to basic concepts in sociolinguistics, dialectology, and stylistics, especially as applied to analysis and evaluation of writing assigned in secondary school.

**120C. Language Study for Teachers of Subjects Other Than English: Secondary School.** Prerequisite: satisfaction of Subject A and English Composition requirements. Introduction for teachers of subjects other than English to basic concepts in language acquisition, dialectology, sociolinguistics, and composition.

**129. Intermediate Exposition.** (Formerly numbered 30.) Prerequisites: satisfaction of Subject A and English Composition requirements, sophomore standing. Intermediate course in academic writing suitable for both lower and upper division students. Teaches students how to write longer papers built on more complex, demanding texts. Readings include at least two books dealing with issues central to humanities, social sciences, or life sciences. Writing assignments include a research project appropriate to students' majors.

**129H. Intermediate Exposition (Honors).** Prerequisites: satisfaction of Subject A and English Composition requirements, sophomore standing. Honors course parallel to course 129.

**130A. Composition for Teachers: Elementary School.** Prerequisite: satisfaction of Subject A and English Composition requirements. Preparation for future elementary school teachers of English composition in writing and criticism of the kinds of prose discourse usually taught in primary schools. P/NP or letter grading.

**130B. Composition for Teachers: Secondary School.** Prerequisite: satisfaction of Subject A and English Composition requirements. Preparation for future secondary school teachers of English composition in writing and criticism of the kinds of prose discourse usually taught in secondary schools.

**131A-131J. Advanced Exposition.** Prerequisites: satisfaction of Subject A and English Composition requirements, upper division standing. Writing course designed to help students develop stylistic and argumentative virtuosity in various rhetorical contexts, including different sections that emphasize principles of effective writing in major professions. May be taken P/NP by English majors, though English majors who wish to use course to satisfy departmental prerequisites must take it for a letter grade. Each course may be taken independently for credit. **131A.** General; **131B.** Business; **131C.** Prehealth Care; **131D.** Journalism/Communication Studies; **131E.** Prelaw; **131F.** Fine Arts; **131G.** Science and Technology; **131H.** Honors; **131J.** Literature.

**132. Composition and Society.** Prerequisites: satisfaction of Subject A and English Composition requirements, upper division standing. Intensive study of some aspect of relationship between composition and social, economic, or political history. P/NP or letter grading. (W,Sp)

**136A-136B-136C. Practical Writing and Editing.** Lecture, three hours. Prerequisites: satisfaction of Subject A requirement, course 3, one course from 131 series, consent of instructor. Sequence in practical writing and editing ability specifically designed to prepare students for a career. Analysis of prose and literary styles necessary to the variety of writing in professional, nonacademic fields combined whenever possible with practical experience in a variety of writing internships and training in a wide range of editorial skills. In Progress grading for courses 136A-136B only.

**197F. Rhetoric in Modern American Culture.** Seminar, three hours. Prerequisites: satisfaction of Subject A and English Composition requirements, course 4 or 129 or one course from 131 series, upper division standing. One-term field studies course designed to provide students with academic background in and firsthand knowledge of media writing. P/NP or letter grading.

## Graduate Courses

**300. Teaching English.** Required of candidates for single subject credential in English. Study of theories of rhetoric, composition, reading, and literature as they apply to secondary school English curriculum.

**495A-495B. Supervised Teacher Preparation (2 units each).** Discussion, one hour; laboratory, 30 minutes. **495A.** Required of all applicants for a teaching assistantship in English. Practical concerns of designing a course, creating assignments, grading papers, and holding conferences for English 3 classes. **495B.** Must be taken concurrently with first teaching assignment. Examination of specialized problems which occur in teaching English 3 and introduction to techniques for teaching English 2 and ESL. In Progress and S/U grading.

**495C. Supervised Teacher Preparation (2 units).** Prerequisites: courses 495A-495B. S/U grading.

environmental disciplines. For details on this program, see Chapter 18 on the School of Public Health.

## Folklore and Mythology (Interdepartmental)

1041 Anderson Graduate School of Management, (310) 825-3962

### Professors

Shirley L. Arora, Ph.D. (*Spanish and Portuguese*)  
 Marianna D. Birnbaum, Ph.D., in Residence  
 (*Germanic Languages*)  
 Jesse L. Byock, Ph.D. (*Germanic Languages*)  
 Marga Cottino-Jones, Ph.D. (*Italian*)  
 Elsie Dunin, M.A. (*Dance*)  
 Robert A. Georges, Ph.D. (*English*)  
 Nazir A. Jairazbhoy, Ph.D. (*Ethnomusicology and Systematic Musicology*)  
 Michael O. Jones, Ph.D. (*History*)  
 James R. Massengale, Ph.D. (*Scandinavian Languages*)  
 Herbert E. Plutschow, Ph.D. (*East Asian Languages and Cultures*)  
 James W. Porter, M.A. (*Ethnomusicology and Systematic Musicology*)

### Professors Emeriti

Kees W. Bolle, Ph.D. (*History*)  
 Patrick K. Ford, Ph.D. (*English*)  
 Marija Gimbutas, Ph.D. (*Slavic Languages and Literatures*)  
 Vladimir Markov, Ph.D. (*Slavic Languages and Literatures*)  
 Philip L. Newman, Ph.D. (*Anthropology*)  
 Douglass R. Price-Williams, Ph.D. (*Anthropology*)  
 Jaan Puhvel, Ph.D. (*Classics*)  
 Stanley L. Robe, Ph.D. (*Spanish and Portuguese*)  
 Allegra Fuller Snyder, M.A. (*Dance*)  
 Donald J. Ward, Ph.D. (*Germanic Languages*)  
 Johannes Wilbert, Ph.D. (*Anthropology*;  
*Distinguished Teaching Award*)

### Associate Professors

Donald J. Cosentino, Ph.D. (*English*)  
 Jacqueline C. DjeDje, Ph.D. (*Ethnomusicology and Systematic Musicology*)  
 Steven Lattimore, Ph.D. (*Classics*)  
 Joseph F. Nagy, Ph.D. (*English*), Chair  
 Beverly J. Robinson, Ph.D. (*Theater*)

### Assistant Professor

Colin Quigley, Ph.D. (*Dance*)

## Scope and Objectives

The interdisciplinary Folklore and Mythology Program, which leads to the Master of Arts and Ph.D. degrees, provides coordinated study of the traditional life-styles of specific societies and culture areas, on the one hand, and systematic training in the research methods and investigative techniques of cross-cultural study, on the other. Courses focus on the nature, history, and functions of such traditional forms as narrative, song, music, art, dance, and speech and consider the part they play in

## Environmental Science and Engineering (Interdepartmental)

This interdisciplinary graduate program, which leads to the Doctor of Environmental Science and Engineering (D.Env.) degree, provides scientific training in the enlightened management of the environment through a broad range of

human development and cultural existence. The program examines the ways in which human traditions both reflect and contribute to continuity and consistency in thought and life.

Trained folklorists pursue careers in teaching, research, governmental agencies, museum work and administration, performing groups and arts management, social work, the medical and legal professions, and business. Their responsibilities include documenting cultural and ethnic traditions, introducing traditional artists and their works to interested audiences, describing transformations of traditional processes and forms, and preserving on tape and film the customs and mores of social groups and individuals.

Although no undergraduate degree program is offered in folklore and mythology, students majoring in world arts and cultures may select folklore and mythology as their area of concentration. A variety of undergraduate courses offered by departments or by faculty participating in the interdepartmental program is also available to all University students. Those with undergraduate preparation in folklore and mythology studies may continue their work on the graduate level. For planning coursework, you should consult departmental counselors and the chair of the committee which administers the interdepartmental program.

## Master of Arts Degree

### Admission

Two letters of recommendation from former instructors or other comparable references are required and should be sent to the Chair, Folklore and Mythology Program, 1041 AGSM, UCLA, Los Angeles, CA 90024-1459.

### Foreign Language Requirement

Reading knowledge of French, German, or Spanish is required. You have the option of demonstrating proficiency either by:

- (1) Passing the fifth quarter or fourth semester course in the selected foreign language at a college or university with a grade of B or equivalent no more than five years before graduate enrollment OR
- (2) Successfully completing the Graduate School Foreign Language Test (GSFLT) with a score of 550 or better OR
- (3) Passing a reading examination administered and evaluated by members of the program faculty (or by outside faculty for languages not familiar to the program faculty).

### Course Requirements

All degree candidates, whether electing the thesis or comprehensive examination plan (see below), must complete the following courses: Folklore and Mythology 200A, 200B, 200C (in sequence), and at least one course from each of the following groups:

Group 1 — One course in folk song, folk music, or folk dance (e.g., C206, M243B, M258, or CM284).

Group 2 — One course in the folklore and mythology of a specific culture or culture area.

Group 3 — One course in folktale, legend, or myth (e.g., 215 or 216).

Group 4 — One additional form/genre-based graduate course in folklore and mythology studies (e.g., M211, 213, M214, 217, 218, or C275).

Group 5 — One graduate seminar in an area of folklore and mythology (e.g., 228, M235, 259).

Only eight units of course 596 may be applied toward the minimum course requirements.

### Thesis Plan

If you select this plan, you must complete a minimum of 10 courses (six in the 200 series; two 596 courses may be included) and submit an acceptable thesis, prepared under the direction of a member of the program faculty. Submission of the thesis is followed by an oral examination covering the fields of folklore and mythology studies. You must complete all degree requirements in a maximum of six regular academic terms.

The thesis committee is appointed no later than the term before you expect to complete the requirements.

### Comprehensive Examination Plan

If you plan to pursue a Ph.D. degree in Folklore and Mythology, you must elect this plan and must complete a minimum of 10 courses (six in the 200 series; two 596 courses may be included). After completion of the coursework, you are expected to demonstrate competence in written and oral examinations (the latter only if requested by M.A. committee members or by you) requiring a grasp of (1) theoretical bases, major documents, and research methods and techniques of folklore and mythology studies, (2) two forms of folklore and mythology, and (3) the folklore and mythology of a specific country, continent, or geographical area. You must complete all degree requirements in a maximum of six regular academic terms.

## Ph.D. Degree

### Admission

Requirements for admission to the doctoral program include completing the requirements for the M.A. degree in Folklore and Mythology (or equivalent) and the written comprehensive examination. You are admitted to the doctoral program on the recommendation of the interdepartmental committee (you may secure provisional admission in order to complete the admission requirements).

### Major Fields or Subdisciplines

You must develop competency in (1) a major field of folklore and mythology and (2) an area of concentration within a related discipline. These areas are selected with the approval of the guidance committee.

## Foreign Language Requirement

Reading knowledge of German and another language approved by the guidance committee is required. You may demonstrate proficiency by any of the three methods described above under "Foreign Language Requirement" for the master's degree.

The foreign language examinations must be completed before you attempt the qualifying examinations.

## Course Requirements

Before attempting the qualifying examinations, you must complete a minimum of nine courses or seminars in the 200 series (or substitutes recommended by the guidance committee) in (1) folklore and mythology and (2) an area of concentration within a related discipline. At least five of the nine courses must be selected from Folklore and Mythology 200A through M286B, and at least two of the nine are to be folklore seminars (e.g., courses 228, M235, M258, 259, M270A, M270B). No more than two 596 courses may be applied toward the minimum graduate course requirement.

## Qualifying Examinations

After the required preparation, you complete a written examination covering (1) your specialization in folklore and mythology and (2) your related area of concentration. The examination is administered by a committee appointed with approval of the interdepartmental committee.

The written examination is followed by the University Oral Qualifying Examination covering the same two areas listed above, which you must pass in order to be advanced to candidacy. The oral examination is administered by the doctoral committee, which also considers and approves your dissertation topic.

## Final Oral Examination

An oral defense of the dissertation may be required, to be determined by your doctoral committee after you complete the oral qualifying examination.

## Lower Division Course

**15. Introduction to American Folklore Studies.** Lecture/discussion. Cultural/historical survey of role of folklore in development of American civilization and of influence of the American experience in shaping folklore in American society; attention also to representative areas of inquiry and analytical procedures.

## Upper Division Courses

**101. Introduction to Folklore.** Survey of various forms of folklore and examination of their historical and social significance.

**C105. Perspectives in American Folklore Research.** Lecture, three hours. Prerequisite: course 101 or consent of instructor. Examination of American folklore studies compared and contrasted with investigations in other countries, with emphasis on principal conceptual schemes and research orientations employed in study of folklore in American society. Concurrently scheduled with course CM205.

Mr. Georges, Mr. Jones

**CM106. Anglo-American Folk Song.** (Same as English M111B and Ethnomusicology M124.) Survey of Anglo-American balladry and folk song, with attention to historical development, ethnic background, and poetic and musical values. May be concurrently scheduled with course C206. Mr. Porter

**C107. Folklore in Urban Environments.** Lecture, three hours. Prerequisites: course 15 or 101 and/or consent of instructor. Exploration of expressive and symbolic dimensions of complex urban life, focusing on how immigrants, migrants, residents, and workers shape their experiences through dynamic interplay of community, ethnicity, culture, and religion. Concurrently scheduled with course C207. Mr. Jones

**108. Afro-American Folklore and Culture.** Prerequisite: course 101 or consent of instructor. Study of traditional genres or forms of Afro-American folklore and their cultural functions.

**M111. Literature of Myth and Oral Tradition.** (Same as English M111A.) Prerequisite: satisfaction of Subject A requirement. Study of myth, dramatic origins, oral epic, folktale, and ballad, emphasizing Indo-European and Semitic examples.

Mr. Cosentino, Mr. Nagy

**M112. Survey of Medieval Celtic Literature.** (Same as English M111E.) Prerequisite: satisfaction of Subject A requirement. Knowledge of Irish or Welsh not required. General course dealing with Celtic literature from earliest times to the 14th century.

Mr. Nagy

**113. The Arthurian Tradition.** Prerequisite: consent of instructor. Survey of traditions related to British King Arthur from medieval times to the present day. Coverage includes both oral traditions and written texts; attention also to modern versions of Arthurian material in other mediums (e.g., opera, film).

Mr. Porter

**118. Folk Art, Folklife, and Material Culture.** Prerequisite: junior standing. General course concerned with folk art, aesthetics, and material culture and with theoretical concepts and methodologies utilized in their analysis.

Mr. Jones

**M121. British Folklore and Mythology.** (Same as English M111C.) Prerequisites: satisfaction of Subject A requirement, junior standing. Survey of folklore of the peoples of Britain, with attention to their history, function, and regional differences.

Mr. Nagy, Mr. Porter

**M122. Celtic Mythology.** (Same as English M111D.) Lecture, three hours; discussion, one hour. Survey of early materials, chiefly literary, for study of mythic traditions of the Celtic peoples, ranging from ancient Gaul to medieval Ireland and Wales.

Mr. Nagy

**M123A. Finnish Folklore and Mythology.** (Same as Scandinavian M123A.) Methods and results of Finnish folklore studies and mythic traditions of the Finns. Special attention to oral epic, beliefs, and legends.

**M123B. Finnish Folk Song and Ballad.** (Same as Scandinavian M123B.) Course M123A is not prerequisite to M123B. Survey of Finnish balladry and folk song, with attention to historical development, ethnic background, and poetic and musical values.

**124. Finnish Folk Art and Technology.** Material manifestations of Finnish folk culture: village layout and architecture, folk technology, arts and crafts, textiles, costumes, and design.

**M125. Folklore and Mythology of the Lapps.** (Same as Scandinavian M125.) Survey of Lappish beliefs, customs, and various genres of oral tradition, including tales, legends, songs, and music. Attention also to material manifestations of Lappish culture: arts and crafts, textiles, costume, folk technology.

**M126. Baltic and Slavic Folklore and Mythology.** (Same as Slavic M179.) Lecture, three hours. General course for students interested in folklore and mythology and for those interested in Indo-European mythic antiquities.

**M127. Celtic Folklore.** (Same as English M111F.) Prerequisite: course 101 or consent of instructor. Folkloric traditions of modern Ireland, Scotland, and other Celtic countries, with attention to current techniques of folkloristic research.

Mr. Nagy

**M128. Hungarian Folklore and Mythology.** (Same as Hungarian M135.) General course for students in folklore and mythology, with emphasis on types of folklore and varieties of folklore research.

Ms. Birnbaum

**M129. Folklore and Mythology of the Ugric Peoples.** (Same as Hungarian M136.) Survey of traditions of the smaller Ugric nationalities (Voguls, Ostyaks, etc.).

Ms. Birnbaum

**130. North American Indian Folklore and Mythology Studies.** Prerequisite: course 101 or consent of instructor. Examination of folkloristic and mythological data recorded from various North American Indian peoples within contexts of principal ideological frameworks which have been evolved historically for analysis of such data.

Mr. Georges

**131. Folklore of India.** Prerequisite: course 101 or consent of instructor. Survey of folklore of India, with special reference to content and dissemination of oral epics, ballads, legends, and beliefs.

Mr. Jairazbhoy

**CM132. Celtic Folk Music.** (Same as Ethnomusicology CM132.) Prerequisite: consent of instructor. Survey and analysis of indigenous traditional music in lands where a Celtic language is or was spoken into modern times. Instrumental and vocal genres, context and performance, social value and ideology. Concurrently scheduled with course CM232. P/NP or letter grading.

Mr. Porter

**M140. From Boccaccio to Basile (in English).** (Same as Italian M140.) Lecture, three hours. Study of origins and development of the Italian novella in its themes, structure, historical context, and European ramifications. Designed for students in other departments who wish to become acquainted with either the premises or growth of similar literary genres. Also intended for students majoring in folklore and mythology, who are given insight into Italian popular tales when these (as in the case of Boccaccio) were translated into highly sophisticated literary forms, as well as when (as in the case of Basile) they become embedded into the folk tradition of the Western world.

Mrs. Cottino-Jones

**M142. Introduction to Jewish Folklore.** (Same as Jewish Studies M143.) Nature of Jewish folklore; narrative, folk song, folk art, folk religion, and methods and perspectives used in their analysis.

**C145. Applied Folkloristics.** Prerequisite: junior standing. Introduction to methods and issues in application of folklore studies to such areas as education, health, museums, organization development, tourism, environmental planning, economic and community development, aging, art therapy, and public sector folklife. Concurrently scheduled with course C245.

Mr. Jones

**M149. Folk Literature of the Hispanic World.** (Same as Spanish M149.) Lecture, three hours. Study of history and present dissemination of principal forms of folk literature throughout the Hispanic countries.

Ms. Arora

**M150. Russian Folk Literature.** (Same as Russian M150.) Lecture, three hours. Lectures and readings in Russian.

**M154A-M154B. The Afro-American Musical Heritage.** (Same as Ethnomusicology M110A-M110B.) Lecture, three hours. Prerequisite: consent of instructor. Study of African music and its impact on the Americas; survey of development of various Afro-American musical genres from slave era to the present, including traditions in the West Indies and Central and South America.

Ms. Djedje

**M155. Oral Traditions in Africa.** (Same as English M111G.) Prerequisite: upper division standing. Survey of African folk traditions: folktale, epic, heroic poetry, and folk song.

Mr. Cosentino

**163. Folklore and Oral History.** Prerequisite: junior standing. Examination of relationships between folk tradition and oral history; how history may be derived from tradition; how traditions are embedded in historical sources; how the folk traditionalize history to reflect their point of view.

**C165. Film and Folklore.** Prerequisite: junior standing. Introduction to film criticism and folklore methodology. Topics include early examples of folklore on film, changing conceptions of folklore and uses of films about folklore, and examples of films by, with, and for folklorists. Concurrently scheduled with course C265.

Mr. Jones

**M170. Russian Folklore.** (Same as Russian M170.) Lecture, three hours. Lectures and readings in English. General introduction to Russian folklore, including survey of genres and related folkloric phenomena.

**172. Folklore in Ethnic Context.** Prerequisite: course 15 or 101 or consent of instructor. Role of folklore in ethnic relations; processes by which ethnic folklore is generated, transmitted, and maintained by immigrant groups and subsequent generations.

Mr. Georges

**C175. Food Customs and Symbolism.** Prerequisite: junior standing. Introduction to foodways, with particular attention to customs and symbolism in America. Topics include sensory realm, child rearing practices, foodsharing, food and identity, food and its emotional significance, aversions and taboos, advertising, changing food habits, and the American diet. Concurrently scheduled with course C275.

Mr. Jones

**M180. Analysis of Traditional Music.** (Same as Ethnomusicology M180.) Prerequisite: consent of instructor. Intensive study of methods and techniques necessary to understand traditional music.

Mr. Porter

**M181. Folk Music of Western Europe.** (Same as Ethnomusicology M126.) Prerequisite: consent of instructor. Introduction to forms and styles of traditional music in Western Europe. Historical and ethnological perspectives on this music combined with numerous recorded examples from major cultural subdivisions of the region.

Mr. Porter

**M182. Japanese Folklore.** (Same as Japanese M182.) Lecture, three hours. Knowledge of Japanese not required. Lectures/discussions on native religious rituals (festivals) and observances of the Japanese, with special emphasis on artistic behavior. Discussion of Shinto, Shinto/Buddhist syncretism, and other non-Buddhist belief systems found in Japan.

Mr. Plutschow

**183. Korean Folklore.** (Formerly numbered M183.) Lecture, three hours. Survey of Korean folklore and its perspectives and methods — oral literature, performing folk arts, social folk custom, and material culture.

**CM184. Dance in European and Euro-American Cultures.** (Formerly numbered CM184D.) (Same as Dance CM184.) Survey of social, ceremonial, and ritual European-based dance; consideration of role of dance in society, its cultural significance, and historical background. Emphasis on various European and European-American regional and national dance traditions. Concurrently scheduled with course CM284.

Mr. Quigley

**M185. The Hero in the Bible and the Ancient Near East.** (Same as Ancient Near East M194.) Lecture, three hours. Investigation of concepts of the hero/heroine in literatures of ancient Mesopotamia, Canaan, and Israel. Texts include epics of Gilgamesh and Aghat, Hebrew Bible, and New Testament. All texts read in translation.

**190. Selected Topics in Folklore and Mythology Studies.** Prerequisite: course 15 or 101 or consent of instructor. Proseminar focusing on selected problems, data, or themes in folklore and mythology studies. May be repeated twice for credit.

**199. Special Studies in Folklore (2 to 4 units).** Prerequisites: senior standing, consent of instructor.

## Graduate Courses

**200A. Folklore Bibliography, Theory, and Research Methods.** (Formerly numbered 200.) Lecture, three hours; discussion, one hour. Basic course in theory and bibliography for folklore students, including techniques of research necessary for serious folklore study.

**200B. Current Trends and Issues in Folklore Studies.** (Formerly numbered 203.) Lecture, three hours; discussion, one hour. Prerequisite: course 200A or consent of instructor. Survey and analysis of current trends and issues in folklore studies, with emphasis on conceptual models, research techniques, and analytical procedures.

**200C. Folklore Collecting and Field Research.** (Formerly numbered 201A.) Lecture, three hours; discussion, one hour. Prerequisites: courses 200A and 200B, or consent of instructor. Discussion/demonstration concerning theoretical concepts, methods, and techniques of data gathering and field research in folklore.

**M202. Folklore Archiving.** (Same as Library and Information Science M202.) Lecture, two hours; laboratory, two hours. Exploration and analysis of alternative data indexing, storage, and retrieval systems and procedures for folklore archival collections, supplemented by firsthand experience in creating and managing data bases, utilizing both manual and computerized techniques. Mr. Georges

**CM205. Perspectives in American Folklore Research.** (Same as English M205.) Lecture, three hours. Prerequisite: course 101 or consent of instructor. Examination of American folklore studies compared and contrasted with investigations in other countries, with emphasis on principal conceptual schemes and research orientations employed in study of folklore in American society. Concurrently scheduled with course C105. Mr. Georges, Mr. Jones

**C206. Anglo-American Folk Song.** Survey of Anglo-American balladry and folk song, with attention to historical development, ethnic background, and poetic and musical values. May be concurrently scheduled with course CM106. Mr. Porter

**C207. Folklore in Urban Environments.** Lecture, three hours. Prerequisites: course 200A and/or consent of instructor. Exploration of expressive and symbolic dimensions of complex urban life, focusing on how immigrants, migrants, residents, and workers shape their experiences through dynamic interplay of community, ethnicity, culture, and religion. Concurrently scheduled with course C107. Mr. Jones

**208. Afro-American Folklore and Culture.** Prerequisite: graduate standing. Theoretical and methodological constructs which have contributed to the body of black cultural expression in the U.S. Ms. Robinson

**M211. Traditional Festivals and Festive Events.** (Same as Italian M211.) Lecture, three hours. Prerequisite: consent of instructor. Analysis of traditional expressive forms and behaviors inherent in selected festivals and festive events (e.g., carnival, community folk festivals, small festive gatherings), with emphasis on their structure and human dynamics.

**213. Folk Belief and Custom.** Prerequisites: course 101 and one course from 118, M121, M122, M123A, M123B, 124, M125, M126, M128, M149, M150, Anthropology 156, German 134, 240A, 240B, 240C. Study of beliefs and customs in the folk community: life cycle, calendrical and agricultural customs, and legal antiquities. Mr. Jones

**M214. Ethnography of Humor.** (Same as Anthropology M232S.) Lecture, three hours. Prerequisite: graduate standing in folklore and mythology or anthropology. Examination and analysis of selected humorous expressions and events in cross-cultural perspective, with emphasis on major psychological and sociocultural approaches to their study and interpretation.

**215. Popular Legend.** Prerequisite: course 200A or consent of instructor. Study of categories of legendary and their relation to myth, custom, ritual, popular beliefs, and ballads.

**216. Folktale.** Prerequisite: course 200A or consent of instructor. Mr. Georges

**217. Folk Speech.** Lecture, three hours. Study of ethnography of communication and its relevance to study of social and regional dialects, proverbs, riddles, onomastics, folk poetry and verse, and traditional humor. Mr. Georges

**218. Folk Art, Craft, and Aesthetics.** Lecture, three hours. Prerequisite: course 200A. Examination of research orientations and findings in regard to what has been called folk art, craft, and aesthetics. Major perspectives and areas of inquiry from latter part of the 19th century to the present. Mr. Jones

**228. Seminar: Topics in Celtic Folklore and Mythology.** Lecture, three hours. Prerequisites: course 200A, coursework in Celtic studies. Preparation for advanced study of and research in important areas of Irish oral tradition and folklore/mythology scholarship. Possible topics include pagan Celtic Britain/Ireland; comparative Celtic mythology; Celtic origin legends; literary and oral saints' legends; the Irish Fenian (Ossianic) tradition of ballads (*taoidhe/duain*) and prose tales; "fairy" beliefs; collecting and archiving methods of the Irish Folklore Commission; folklore studies and nationalism. Mr. Nagy

**M230A-M230B. Folk Tradition in Italian Literature.** (Same as Italian M230A-M230B.) Lecture, two hours.

**CM232. Celtic Folk Music.** (Same as Ethnomusicology CM232.) Prerequisite: consent of instructor. Survey and analysis of indigenous traditional music in lands where a Celtic language is or was spoken into modern times. Instrumental and vocal genres, context and performance, social value and ideology. Concurrently scheduled with course CM132. S/U or letter grading. Mr. Porter

**M235. African Myth and Ritual.** (Same as English M235.) Prerequisite: consent of instructor. Seminar on methods of analyzing African and African Diaspora myth and ritual. Mr. Cosentino

**240. Introduction to Jewish Folk Literature.** Prerequisites: upper division standing and consent of instructor, or graduate standing. Examination of both historic and generic methods used in study of Jewish folk literature.

**M241. Folklore and Mythology of the Near East.** (Same as Near Eastern Languages M241.) Prerequisite: course 101 or equivalent.

**M243A. The Ballad.** (Same as English M243A.) Prerequisite: consent of instructor. Study of English and Scottish popular ballads and their American derivatives, with some attention to European analogues.

**M243B. Problems in Ballad Scholarship.** (Same as English M243B.) Prerequisite: course M243A or consent of instructor. Intensive investigation of a problem or problems in study of the popular ballad.

**C245. Applied Folkloristics.** Prerequisite: graduate standing. Introduction to methods and issues in application of folklore studies to such areas as education, health, museums, organization development, tourism, environmental planning, economic and community development, aging, art therapy, and public sector folklife. Concurrently scheduled with course C145. Mr. Jones

**248. Theory and Method in Latin American Folklore Studies.** Historical survey of folklore scholarship in Latin America, with emphasis on theoretical bases, methods, and techniques employed in study and analysis of traditional tales, songs, music, linguistic expression.

**M249. Folk Literature of the Spanish and Portuguese Worlds.** (Same as Portuguese M249 and Spanish M249.) Lecture, three hours. Intensive study of folk literature of the Spanish and Portuguese cultures as represented in (1) ballad and poetry, (2) narrative and drama, (3) speech. Ms. Arora

**251. Seminar: Finno-Ugric Folklore and Mythology.** Advanced studies in folk traditions and mythologies of the Finno-Ugric speaking nations.

**M257. South American Folklore and Mythology Studies.** (Same as Anthropology M232R.) Prerequisite: Anthropology 174P or consent of instructor. Examination of oral traditions and related ethnological data from various South American Indian societies against the background of the religious systems of these people.

**M258. Seminar: Folk Music.** (Same as Ethnomusicology M287.) Seminar, three hours. Prerequisite: consent of instructor. Not open to students with credit for former Music M258. Mr. Porter

**259. Seminar: Folklore.** Prerequisite: course 200A or consent of instructor. Seminar focusing on selected topics in folklore and mythology. May be repeated for credit.

**260. Organizational Folklore, Culture, and Symbolism.** Prerequisite: graduate standing. Folklore in organizational settings (stories, rituals, rites, metaphors, etc.) and role of folklore in organization development as information source, diagnostic, and intervention to improve personnel practices, climate, and leadership. Mr. Jones

**C265. Film and Folklore.** Prerequisite: graduate standing. Introduction to film criticism and folklore methodology. Topics include early examples of folklore on film, changing conceptions of folklore and uses of films about folklore, and examples of films by, with, and for folklorists. Concurrently scheduled with course C165. Mr. Jones

**M270A-M270B. Seminars: Japanese Ritual Arts.** (Same as Japanese M270A-M270B.) Seminar, three hours. Reading knowledge of Japanese not required. Discussions and readings on ritual (performing) arts of Japan comprising music, dance, storytelling, viewing, purification, divination, disguise, mimicry, and competitive as well as acrobatic arts, with special emphasis on religio-magical purposes and symbolic structure of these arts. In Progress grading. Mr. Plutschow

**C275. Food Customs and Symbolism.** Prerequisite: junior standing. Introduction to foodways, with particular attention to customs and symbolism in America. Topics include sensory realm, child rearing practices, foodsharing, food and identity, food and its emotional significance, aversions and taboos, advertising, changing food habits, and the American diet. Concurrently scheduled with course C175. Mr. Jones

**CM284. Dance in European and Euro-American Cultures.** (Formerly numbered CM284D.) (Same as Dance CM284.) Survey of social, ceremonial, and ritual European-based dance; consideration of role of dance in society, its cultural significance, and historical background. Emphasis on various European and European-American regional and national dance traditions. Concurrently scheduled with course CM184. Mr. Quigley

**M286A-M286B. Studies in Hispanic Folk Literature.** (Same as Spanish M286A-M286B.) Lecture, two hours. Ms. Arora

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading. Mr. Georges, Mr. Jones

**400A-400B-400C. Directed Professional Activities.** Prerequisite: consent of department chair. Directed individual projects in professional editing, bibliography, discography, filmography, festival direction, and other professional activities. May not be applied toward M.A. course requirements. May be repeated for credit. S/U grading.

**495. Teaching Folklore and Mythology.** Lecture, three hours. Prerequisite: course 200A. Analysis and design of alternative organizational schemes, teaching aids and techniques, and evaluation methods for folklore and mythology courses at the college level, with opportunities for observation and apprentice teaching. May not be applied toward M.A. or Ph.D. course requirements. S/U grading. Mr. Georges, Mr. Jones

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Studies in Folklore (2 to 6 units).**

**597A. Preparation for M.A. Comprehensive Examination (2 to 4 units).** Prerequisites: graduate standing in folklore and mythology, consent of instructor. S/U grading.

**597B. Preparation for Ph.D. Qualifying Examinations (4 to 8 units).** Prerequisites: successful completion of M.A. comprehensive examination, consent of instructor. S/U grading.

**598. M.A. Thesis Preparation (2 to 4 units).**

**599. Ph.D. Dissertation Research (4 to 8 units).** Prerequisite: advancement to Ph.D. candidacy. S/U grading.

## Related Courses in Other Departments

**Anthropology** 118A, 118B. Museum Studies

133R. Aesthetic Systems

156. Comparative Religion

230P. Ethnology

232Q. Myth and Ritual

233Q. Aesthetic Anthropology

M272. Indians of South America

273. Cultures of the Middle East

274. Cultures of the Pacific Islands

M288. Ethnographic Film

**Art History** M102A. Minoan Art and Archaeology

M102B. Mycenaean Art and Architecture

C117A. Pre-Columbian Art of Mexico

C117B. Pre-Columbian Art of the Maya

C117C. Pre-Columbian Art of the Andes

118A. Arts of Oceania

118C. Arts of Sub-Saharan Africa

118D. Arts of Native North America

C119A. Advanced Studies in African Art: Western Africa

C119B. Advanced Studies in African Art: Central Africa

203. Museum Studies

220. Oceanic, Pre-Columbian, African, and Native North American Art

**Classics** 161. Introduction to Classical Mythology

162. Classical Myth in Literature

166A. Greek Religion

166B. Roman Religion

168. Introduction to Comparative Mythology

268. Seminar: Comparative Mythology

**Dance** C180A-C180B. Studies in Dance Ethnography

181A. Dance Cultures of Asia

181B. Dance in Southeast Asia

181C. Dance in East Asia

181D. Dance in South Asia

182. Dance in Africa and the African Diaspora

183. Dance in Latino American Cultures

C187. Dance in Native American Cultures

280A-280B. Advanced Studies in Dance Ethnology

**English** 112. Children's Literature

**Ethnomusicology and Systematic Musicology** 20A-20B-20C. Musical Cultures of the World

106A-106B-106C. Music of the American Indians

120A-120B. Development of Jazz

128. Folk Music of Eastern Europe

130. Folk Music of the Mediterranean

136A-136B. Music of Africa

146. Folk Music of South Asia

147. Survey of Classical Music in India

156A-156B. Music of China

160A. Survey of Music in Japan

181. Anthropology of Music

C190A-C190B. Proseminars: Ethnomusicology

207. Seminar: North American Indian Music

237. Seminar: African Music

241. Music of Iran and Other Non-Arabic-Speaking Communities

250A-250B. Music of Indonesia

281A-281B. Seminars: Field and Laboratory Methods in Ethnomusicology

282. Seminar: Notation and Transcription in Ethnomusicology

283. Seminar: Study of Musical Instruments (Organology)

290. Seminar: Ethnomusicology

**French** 115A-115B-115C. Medieval French Literature

215A-215D. Medieval Literature

**German (Germanic Languages)** 134. German Folklore

240A. Theories, Methods, and History of Germanic Folklore

240B. Folk Song and Ballad

240C. Oral Prose Genres

245B. Germanic Antiquities

262. Seminar: Germanic Folklore

**History** 193A. History of Religions: Myth

**Italian** 214E. *Decameron*

217B. Commedia dell'Arte and the Theater

218C. Theater, Especially Metastasio, Goldoni, C. Gozzi

**Music** 158. New Orleans Jazz

**Old Norse Studies (Germanic Languages)** C139. The Saga

C140. Viking Civilization and Literature

151. Elementary Old Norse

152. Intermediate Old Norse

221. Advanced Old Norse Prose

222. Advanced Old Norse Poetry

**Russian (Slavic Languages)** 211A. Russian Literature before 1800: Old Russian Literature

251. Topics in Old Russian Literature

291A. Seminar: Old Russian Literature

**Sociology** 156. Ethnic and Status Groups

186. Latin American Societies

187. Population and Society in the Middle East

**Spanish (Spanish and Portuguese)** 262B. Studies in Medieval Spanish Literature

## Foreign Literature in Translation

The following courses offered in the departments of language and literature do not require reading knowledge of any foreign language.

**Afrikaans (Germanic Languages)** 114. Afrikaans Literature in Translation

**Ancient Near East (Near Eastern Languages)** 150A-150B-150C. Survey of Ancient Near Eastern Literatures in English

**Arabic (Near Eastern Languages)** 150A-150B. Survey of Arabic Literature in English

151. Survey of Modern Arabic Literature in English

**Armenian (Near Eastern Languages)** 150A-150B. Survey of Armenian Literature in English

**Bulgarian (Slavic Languages)** 154. Survey of Bulgarian Literature

**Chinese (East Asian Languages)** 150. Chinese Literature in Translation: Classical Literature

151. Chinese Literature in Translation: Modern Literature

**Classics** 40. Survey of Greek Literature in Translation

41. Survey of Latin Literature in Translation

140. Topics in History of Greek Literature

141. Topics in History of Latin Literature

142. Ancient Epic

143. Ancient Drama

144. Generic and Topical Studies in Ancient Literature

**Czech (Slavic Languages)** 155A-155B. Czech Literature

**Dutch (Germanic Languages)** 113. Modern Dutch and Flemish Literature in Translation

**East Asian Languages and Cultures** 161. Buddhist Literature in Translation

**English** 108A-108B. The English Bible as Literature

108C. The English Bible as Literature: Special Topics

**French** 162. Modern French Thought in Translation

163. Contemporary French Theater in Translation

164A-164B-164C. The French Novel in Translation

165. Topics in French Literature in Translation

**German (Germanic Languages)** 50A. Masterworks of German Literature in Translation: Medieval Period through Classicism

50B. Masterworks of German Literature in Translation: Romanticism to the Present

51. Masterworks of Germanic or East Central European Literatures in English Translation

119A. German Literature in the Age of Chivalry, in English Translation

119B. Weimar Classicism and Its Influence, in English Translation

119C. The Faust Tradition from the Renaissance to the Modern Age, in English Translation

119D. Romantic Heritage in German Literature, in English Translation

119E. Pattern and Chaos: Modern German Literature and Thought, in English Translation

119F. From Dream to Nightmare: The German-Jewish Experience, in English Translation

M119G. Interwar Central European Prose

M119H. Postwar Central European Prose

**Humanities** All courses

**Hungarian (Germanic Languages)** 121A-121B. Survey of Hungarian Literature in Translation

**Iranian (Near Eastern Languages)** 150A-150B. Survey of Persian Literature in English

**Italian** 42A-42B. Italian Civilization or Italy through the Ages

46. Italian Cinema and Culture

50A-50B. Masterpieces of Italian Literature

110A-110B. *Divine Comedy* in English

M140. From Boccaccio to Basile (in English)

150. Modern Italian Fiction in Translation

**Japanese (East Asian Languages)** 150. Japanese Literature in Translation: Classical

151. Japanese Literature in Translation: Modern

**Jewish Studies (Near Eastern Languages)** M150A-150B. Hebrew Literature in English

151A-151B. Modern Jewish Literature in English

**Korean (East Asian Languages)** 150. Korean Literature in Translation: Classical

151. Korean Literature in Translation: Modern  
**Old Norse Studies (Germanic Languages)** 40. The Heroic Journey in Northern Myth, Legend, and Epic C139. The Saga  
 C140. Viking Civilization and Literature  
**Polish (Slavic Languages)** 152A-152B. Survey of Polish Literature  
 160. Polish Romanticism  
**Romanian (Slavic Languages)** 152. Survey of Romanian Literature  
**Portuguese (Spanish and Portuguese)** 40A-40B. Portuguese, Brazilian, and African Literature in Translation  
**Russian (Slavic Languages)** 25. The Russian Novel in Translation  
 118. Survey of Russian Literature to Pushkin  
 119. Survey of 19th-Century Russian Literature  
 120. Survey of 20th-Century Russian Literature  
 124A-124F. Studies in Russian Literature  
 125. The Russian Novel in its European Setting  
 126. Survey of Russian Drama  
**Scandinavian** 50. Introduction to Scandinavian Literature  
 60. Ingmar Bergman and Other Swedish Filmmakers  
 138. Survey of Finnish Literature  
 141. Backgrounds of Scandinavian Literature  
 142. Scandinavian Literature of the 19th Century  
 143. Scandinavian Literature of the 20th Century  
 C144. Henrik Ibsen  
 C145. August Strindberg  
 C146. Søren Kierkegaard  
 C147. Knut Hamsun  
 C180. Literature and Scandinavian Society  
 C182. Theory of the Scandinavian Novel  
 184. Hans Christian Andersen  
**Serbo-Croatian (Slavic Languages)** 154A-154B. Yugoslav Literature  
**Slavic (Slavic Languages)** M125. Interwar Central European Prose  
 M126. Postwar Central European Prose  
**Spanish (Spanish and Portuguese)** 60A-60B-60C. Hispanic Literatures in Translation  
**Ukrainian (Slavic Languages)** 152. Ukrainian Literature  
**Yiddish (Germanic Languages)** 121A. 20th-Century Yiddish Poetry in English Translation  
 121B. 20th-Century Yiddish Prose and Drama in English Translation  
 121C. Special Topics in Yiddish Literature in English Translation

## French

222 Royce Hall, (310) 825-1145

### Professors

Emily Apter, Ph.D.  
 Patrick Coleman, Ph.D., *Undergraduate Studies Director*  
 Eric Gans, Ph.D., *Graduate Studies Director*  
 Peter Haidu, Ph.D.  
 Stephen D. Werner, Ph.D.  
 Marc Bensimon, Ph.D., *Emeritus*  
 Francis J. Crowley, Ph.D., *Emeritus*  
 Hassan el Nouty, Docteur ès Lettres, *Emeritus*  
 Milan S. La Du, Ph.D., *Emeritus*  
 L. Gardner Miller, Docteur ès Lettres, *Emeritus*  
 Oreste F. Pucciani, Ph.D., *Emeritus*

### Associate Professors

Jean-Claude Carron, Docteur ès Lettres, *Chair*  
 Shuhsi Kao, Ph.D.  
 Sara Melzer, Ph.D.

### Assistant Professors

Andrea Loselle, Ph.D., *Undergraduate Adviser*  
 Malina Stefanovska, Ph.D.

### Lecturers

Nicholas Collaros, C.Phil., *Undergraduate Adviser*  
 Nicole Dufresne, Ph.D.  
 Kimberly Jansma, Ph.D.  
 Colette Brichant, Docteur d'Université, *Emerita*  
 Padoue A. de Martini, B.A., *Emeritus*  
 Jacqueline Hamel-Baccash, Licenciée ès Lettres, *Emerita*  
 Madeleine Korol-Ward, Ph.D., *Emerita*

## Scope and Objectives

The UCLA French Department is a major West Coast center for the study of French. In recent decades French critical thought has maintained a dominant position in the Western world. The department seeks to give its students not only a background in the various fields of French studies, but also opportunity to relate literary, linguistic, and cultural study to examination of the critical intellectual questions of our time.

The lower division program is designed to provide practical competence in French after one year and thorough basic knowledge of the language after two years.

The upper division program is chiefly devoted to perfecting linguistic skills and to the study of French culture and literature. Courses in linguistics and business French are also offered. Students graduating with a Bachelor of Arts in French should be fully fluent in French and possess a thorough background in French literature and culture. All four plans lead to the Bachelor of Arts degree and subsequently to graduate studies in French.

The graduate program comprises training in the various fields of French literature and thought, as well as in literary criticism, analysis, and theory. A number of courses in linguistics and stylistics are also offered. The department offers both the M.A. and Ph.D. degrees.

## Bachelor of Arts Degrees

### Preparation for the Majors

*Required:* French 1, 2, 3, 4, 5, 6, 12, and 15, or equivalent. You normally take course 6 before undertaking course 12 or 15. If you receive a grade of A in course 5, you may enroll in course 12 concurrently with course 6, with consent of instructor. Students in Plan D must also take Linguistics 20.

### The Majors

Four plans are offered by the department:

**Plan A (General)** leads to the Bachelor of Arts in French and subsequently to the standard elementary or secondary instructional creden-

tial. *Required:* Fifteen full courses of upper division work, including French 100, 101, 102, 103, 114A-114B-114C; two terms from courses 130A through 132 (one course in French history may be substituted with consent of the undergraduate adviser); three courses and/or seminars in French literature from 115A through 125 and/or 150 through 157; three elective courses and/or seminars normally selected from upper division offerings in the department in language, civilization, literature, or the arts, including 105 through 109, 130A through 132, 140 through 142, and 158. Two upper division courses outside the department may be substituted in the major program with consent of the undergraduate adviser.

Candidates for an instructional credential within Plan A must take 15 upper division French Department courses, including French 105, in order to qualify for a waiver of the National Teachers Examination for the single subject instructional credential in French.

**Plan B (Literature)** leads to the Bachelor of Arts in French. *Required:* Fifteen full courses of upper division work, including French 100, 101, 102, 103, 114A-114B-114C; six courses and/or seminars in French literature from 115A through 125 and/or 140 through 157; two elective upper division courses from the department, the humanities or social sciences division of the College of Letters and Science, or the School of the Arts, to be selected in consultation with the undergraduate adviser.

**Plan C (French Studies)**, with emphasis on French culture, leads to the Bachelor of Arts in French and is a core program in French allowing for individual selection of relevant courses in related fields such as humanities, social sciences, women's studies, and linguistics. *Required:* Fifteen full courses of upper division work, including French 100, 101, 102, 103, 114A-114B-114C; three courses and/or seminars in French literature from 115A through 125 and/or 140 through 157; five upper division elective courses in the fields relevant to French studies to be selected in or outside the department in consultation with the undergraduate adviser.

**Plan D (French and Linguistics)** leads to the Bachelor of Arts in French and Linguistics. In addition to the normal preparation for the major, you are required to complete the sixth term of work in one other foreign language or the third term in each of two other foreign languages. Linguistics 20 is required as preparation for the major. *Required:* Fourteen full courses of upper division work, including French 100, 101, 102, 103, 114A-114B-114C; two courses from French 105, 107, 108A, 109; Linguistics 103, 110, 120A, 120B, and 165A or 165B.

It is strongly advised that students who intend to pursue advanced degrees begin preparation for the language requirements at the undergraduate level.

If your knowledge of French exceeds the preparation usually received in courses preparing

for the major and if you demonstrate the requisite attainment in French 100, 101, or 102, you may substitute for those courses in grammar and composition an equivalent number of upper division courses in the French Department in consultation with an adviser. All prospective French majors who are native or quasi-native speakers of French must see the undergraduate adviser before beginning upper division work in the major.

All majors must complete a minimum of nine courses of appropriate upper division work in the UCLA French Department. A maximum of eight units of course 199 may be applied toward the elective requirements for the major if approved in advance by the undergraduate adviser. You must maintain a C average in upper division major courses in order to remain in any of the French majors.

Coursework taken on a Passed/Not Passed basis is not acceptable in any area of the major program.

It is recommended that students intending to major in French consult the undergraduate adviser before enrolling in upper division courses.

### Honors Program

The department encourages those students in the French majors with initiative and independence of mind who desire an enriched individualized course of study to apply for the honors program.

The honors program is designed for French majors who have fulfilled their lower division requirements and have a 3.5 departmental grade-point average. Students whose GPA falls between 3.3 and 3.5 should submit a composition from an advanced language or literature course to the honors committee. If the work submitted meets with approval, you are admitted to the program.

To graduate with departmental honors, you must complete a minimum of two honors projects in the context of nonhonors upper division courses (French 115A and above) taken for honors credit. You must do an honors project (a research paper of 12 to 15 pages) in addition to the regular course requirements. An honors contract must be signed before the end of the third week of the term. After completing the project, you fill out a completion form.

On the basis of your coursework and field of interest, you are expected to formulate a research topic you wish to pursue in greater depth. You take course 170 where you receive regular personal supervision from a faculty member in the research, methodology, and writing of your approximately 20- to 25-page honors thesis (honors projects and the honors thesis are not to be confused). Course 170 counts toward the requirements for the French majors as outlined above.

You may begin the honors program toward the end of your junior year or during your senior

year. The honors projects and course 170 may be taken over two terms minimum. You are allowed to enroll in graduate courses with the consent of the instructor but cannot use those courses to replace an honors project. Departmental honors will be recorded on your final transcript if you fulfill all requirements for the program. You may submit your final honors thesis for the departmental prize.

### Instructional Credential in French

If you wish a single subject instructional credential in French, you must have the consent of the French Department in order to gain admission to student teaching. For the single subject credential, consent is contingent on a major (or equivalent) in French and the successful completion of French 370. For additional information, consult the Graduate School of Education, 1605 Maxxam Building (122 Moore Hall in early 1994, 310-825-8328) and/or the French Department.

### Master of Arts Degree

#### Admission

The Graduate Record Examination (GRE) General Test, a sample of written work in French, and three letters of recommendation are required and should be sent to the Department of French, 222 Royce Hall, UCLA, Los Angeles, CA 90024-1550. You must hold a Bachelor of Arts in French or the equivalent.

#### Major Fields or Subdisciplines

For practical purposes and ease of identification, the corpus of French literature is referred to in terms of three periods: (1) medieval and Renaissance, (2) classical (17th and 18th centuries), and (3) modern (19th and 20th centuries, with francophone literature as an option).

#### Foreign Language Requirement

The foreign language requirement may be fulfilled by (1) passing a course of at least level three in either German, Latin, Spanish, or Italian, (2) by passing the University reading examination in one of these languages, or (3) by passing the Graduate School Foreign Language Test (GSFLT) with a score of 500 or better. In special cases, substitution of another foreign language is accepted if approved by the graduate adviser. You must complete the foreign language requirement before you submit your M.A. thesis (Plan I) or take the M.A. examination (Plan II). All candidates for the M.A. must be proficient in spoken French.

#### Plans of Study

The department offers two master's programs: Plan I (thesis plan) and Plan II (comprehensive examination plan).

**Plans I and II Course Requirements** — A total of 11 courses in French is required, including French 201, 202, and 203 (should be taken as early as possible), at least one course

in each of the six "centuries," and one additional course in the period not covered on the M.A. examination. For Plan I thesis candidates, this is the period of specialization which is not covered on the oral qualifying examination. At least eight of the courses must be at the graduate level. Four units of course 596 (or 598 for students in Plan I) may be substituted for one required "century" course with approval of the graduate adviser or thesis director.

**Plan I (Thesis Plan)** — You may apply to the chair of the department for admission into Plan I after completing at least six graduate courses (200 series), four of which must be literature courses in the French Department. The minimum admission requirements are a 3.5 graduate GPA in French and letters from two graduate professors in the department specifically recommending admission into this plan. A brief statement of your proposed thesis topic is also required.

Final admission into Plan I (i.e., permission to write the thesis) is contingent on passing a one-hour oral examination, administered by the departmental M.A. committee, in the two periods other than the proposed period of specialization (in which you will write the thesis). You normally take the examination during the fourth term (but no later than the sixth term) after admission. Your thesis committee is appointed only after you have passed the examination. If you fail this examination, the examining committee determines whether you may be permitted another attempt or be advised to take the comprehensive examination (Plan II).

For the purpose of course requirements, the period of specialization for the thesis is considered the period not covered on the M.A. examination; course 598 may be applied as one of the three courses required in this period.

The thesis should demonstrate proficiency in the methods and concepts of literary research; a suitable length is normally about 50 pages. A tentative outline of the proposed thesis must be approved in writing by the thesis committee before work on the thesis is begun. Final approval of the thesis by the committee is also required.

#### Plan II (Comprehensive Examination Plan)

— You must pass written examinations of four hours in length in each of the two periods prepared and a 30-minute oral examination in French covering the two periods of the written examination. The examinations are given in Fall and Spring Quarters and may be retaken once.

Three results are possible in either Plan I or II — fail, pass without admission to the doctoral program, or pass with admission to the doctoral program. The decision concerning admission to the doctoral program is made by the department on the basis of your M.A. examination or thesis results and overall appraisal of your record.

Students who either fail or pass without admission to the doctoral program are permitted to

retake the examination or resubmit the thesis once, at a date no later than a year after the first attempt.

## Ph.D. Degree

### Admission

For UCLA applicants, completion of the master's degree in French with recommendation for admission to the doctoral program is required; outside applicants must hold an M.A. degree in French or equivalent and must submit three letters of recommendation, as well as the Graduate Record Examination (GRE) General Test and a sample of written work in French.

Admitted students holding the M.A. or an equivalent degree from another institution must take an oral *examen de passage* in two periods of literary history (to be selected in consultation with the graduate adviser) in order to be formally admitted to the doctoral program. This examination, administered by the M.A. committee, should be taken during your first year in residence. In case of failure it may be repeated once.

### Major Fields or Subdisciplines

For practical purposes and ease of identification, the corpus of French literature is referred to in terms of three periods: (1) medieval and Renaissance, (2) classical (17th and 18th centuries), and (3) modern (19th and 20th centuries, with francophone literature as an option).

### Foreign Language Requirement

Languages are divided into three groups: Latin; German and Russian; and other Romance languages. You must demonstrate proficiency in two languages at level five, with no more than one from any one group. The languages selected must be approved by your guidance committee. Language requirements may also be satisfied by passing the Graduate School Foreign Language Test (GSFLT) with level five corresponding to a score of 550. Substitution of another language, when warranted by the nature of your specialization, must be recommended by the guidance committee and approved by the graduate adviser. Language requirements are to be completed before taking the doctoral qualifying examinations.

### Course Requirements

The following courses are required: (1) French 201, 202, and 203, if not already covered at the M.A. level, (2) a minimum of five seminars, at least two of which must be taken after obtaining the M.A. (balance should be sought between theoretical and literary-historical relevance to your proposed period of specialization), (3) at least two graduate courses in other departments related to the area of specialization. In addition, you are expected to follow the guidance committee's suggestions in taking courses in preparation for the doctoral qualifying examinations.

## Qualifying Examinations

Two written examinations of three hours each, based on individual reading lists of approximately 15 works each, are required as follows: (1) focused specifically on the historical area related to the proposed dissertation topic and (2) in areas of critical theory relevant to the proposed dissertation topic. The examinations must be taken within a period of one week; in no case may they be separated by a longer interval. The topics are determined by prior consultation with the doctoral guidance committee. At the discretion of the guidance committee, you may be permitted to retake a failed written examination once.

After passing the written examinations, you are admitted to the University Oral Qualifying Examination which should be taken during the same term as the written qualifying examinations. You must submit a 20- to 30-page prospectus of your proposed dissertation, including an outline and a bibliography. This examination, normally of two hours duration, bears on the written examinations and on the proposed dissertation subject.

## Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

## Final Oral Examination

This examination is not required by the department but may be imposed at the discretion of an individual doctoral committee.

## Lower Division Courses

If you have taken French elsewhere, you must take a placement test administered by the department. Depending on the results of the placement test or with recommendation of an instructor, you may be permitted to enroll in a course of study at a more advanced level.

No credit is allowed for completing a less advanced course after successful completion of a more advanced course in grammar and/or composition.

**1. Elementary French.** Lecture, five hours.

**1G. Elementary French for Graduate Students (3 units).** Preparation for GSFLT or other language examinations. A passing grade does not imply satisfaction of language requirements. S/U grading.

**2. Elementary French.** Lecture, five hours. Prerequisite: course 1 with a grade of C- or better or one year of high school French.

**2G. Elementary French for Graduate Students (3 units).** Prerequisite: course 1G or equivalent. Preparation for GSFLT or other language examinations. A passing grade does not imply satisfaction of language requirements. May be repeated. S/U grading.

**3. Elementary French.** Lecture, five hours. Prerequisite: course 2 with a grade of C- or better or two years of high school French or advanced placement standing.

**4. Intermediate French.** Lecture, five hours. Prerequisite: course 3 with a grade of C- or better or three years of high school French or advanced placement standing.

**5. Intermediate French.** Lecture, five hours. Prerequisite: course 4 with a grade of C- or better or four years of high school French or advanced placement standing.

**6. Intermediate French.** Lecture, five hours. Prerequisite: course 5 with a grade of C- or better or advanced placement standing.

**10A-10D. French Conversation (2 units each).** Discussion, three hours. Prerequisite: course 3 with a grade of A or B or consent of department.

**12. Introduction to Study of French Literature.** Lecture, two hours; discussion, one hour. Prerequisite: course 6 or equivalent or consent of instructor. Principles of literary analysis as applied to selected texts in poetry, theater, and prose.

Mr. Carron in charge (F,W,Sp)

**14. Introduction to French Civilization.** Lecture, three hours. Prerequisite: course 6 or consent of instructor. Study of contemporary French institutions and issues in political, cultural, and socioeconomic realms. Structure of and recent developments in French society.

**15. Theory and Correction of Diction.** Prerequisite: course 6 or consent of instructor. French pronunciation, diction, intonation in theory and practice; phonetic transcription, phonetic evolution of the modern language; remedial exercises; recordings.

Ms. Jansma in charge

## Upper Division Courses

Prerequisites to all upper division courses taken in partial fulfillment of the French major are French 6, 12, 15, or equivalent. Credit is ordinarily not allowed for completing a less advanced course after successful completion of a more advanced course in grammar and/or composition. Courses 105 through 109 are not sequential and may be taken in any order, provided the prerequisites for each course are fulfilled.

**100. Introduction to Written Expression.** Lecture, three hours. Prerequisite: course 6 or equivalent. Development of writing techniques in French, with emphasis on revision of grammatical structures.

Mr. Collaros in charge (F,W,Sp)

**101. Intermediate Exposition.** Lecture, three hours. Prerequisite: course 100 or equivalent. Development of narrative techniques in writing, with emphasis on editing for grammar and style.

Mr. Collaros in charge (F,W,Sp)

**102. Advanced Exposition.** Lecture, three hours. Prerequisite: course 101 or equivalent. Development of analytic writing skills in French, with emphasis on rhetorical techniques and skillful argument.

Mr. Collaros in charge (F,W,Sp)

**103. Composition and Style.** Lecture, three hours. Prerequisite: course 102 or equivalent. Designed to develop proficiency in composition and style, with concentration on three linguistic skills of reading, writing, and translating.

Ms. Dufresne (F,W,Sp)

**105. Structure of French.** Lecture, three hours. Prerequisites: course 15, consent of instructor. Prior background in linguistics not required. Introduction to linguistic analysis of French in areas of phonology, morphology, syntax, and language variation.

Ms. Jansma (W)

**107. Advanced Oral Expression.** Lecture, three hours. Prerequisites: courses 15 and 100, or consent of instructor. Communicative and rhetorical strategies; techniques of oral exposition, argumentation, and analysis.

Ms. Dufresne (F,W,Sp)

**108A-108B-108C. Advanced Practical Translation.** Lecture, three hours:

**108A.** Prerequisite: course 103 with a grade of B or consent of instructor. Introduction to translation of advanced texts of general interest, with work in theory of translation.

Mr. Collaros in charge



**108B.** Prerequisite: course 108A or consent of instructor. Practice in translation of technical documents and texts; comparative stylistics of translation.

Mr. Collaros in charge

**108C.** Prerequisite: course 108B or consent of instructor. Advanced work in areas of general and specialized interest.

Mr. Collaros in charge

**109. French Business: Its Language and Culture.** Lecture, three hours. Prerequisite: course 6 or equivalent. Study of language of economics and business in France as well as its specific practices and customs.

Mr. Collaros (Sp)

**114A-114B-114C. Survey of French Literature.** Lecture, three hours. Prerequisite: course 12 or consent of instructor. Survey of French literature from the medieval period through the 20th century:

**114A.** Medieval and Renaissance Literature. Masterpieces of medieval and Renaissance literature, including examples of epic (*La Chanson de Roland*), romance (Chrétien de Troyes' *Yvain*), and Renaissance prose and poetry (including Marot, Du Bellay, Ronsard, Rabelais, Marguerite de Navarre, and Montaigne).

Mr. Coleman in charge

**114B.** 17th and 18th Centuries. Study of selections from major works of classicism and the Enlightenment, including those by Racine, Pascal, La Fayette, La Fontaine, Laclos, Diderot, Voltaire, and Rousseau.

Mr. Coleman in charge

**114C.** 19th and 20th Centuries. Study of major literary movements and writers of the period, including works by Hugo, Baudelaire, Balzac, Stendhal, Flaubert, Zola, Gide, Proust, Sartre, Robbe-Grillet, and Duras.

Mr. Coleman in charge

**115A-115B-115C. Medieval French Literature:** (Formerly numbered 115A-115D.) Lecture, three hours:

**115A.** Invention of Love in the 12th Century. Selections from the broad range of lyric poetry and narrative romance in which is first elaborated "romantic" (sometimes called "courtly") love. Readings include works of the troubadours and *trouvères*, different versions of the Tristan-myth, a romance of Chrétien de Troyes, and first part of *Romance of the Rose*.

Mr. Haidu

**115B.** Medieval Knight: Heroism and Its Social Problems. Readings in literature and history of medieval warfare and its ideals in relation to social structure of the time. Texts include *La Chanson de Roland*, *Raoul de Cambrai*, *La Mort le roi Artu*, crusade history, and Georges Duby's *Guerriers et paysans*.

Mr. Haidu

**115C.** Comic Structure and Social Class. Medieval comedy, to be studied in relation to class structures and their evolution in the Middle Ages, takes a number of forms. Often obscure in the *fabliaux*, it can turn parodic in the *Roman de Renart*, simultaneously satiric, fantastic, and religious in the bourgeois drama of Arras, and utterly charming in the unclassifiable *Aucassin et Nicolette*.

Mr. Haidu

**116A-116B-116C. Renaissance.** (Formerly numbered 116A-116D.) Lecture, three hours:

**116A.** La Pléiade and 16th-Century Poetry. Study of the linguistic and poetic "revolution" brought about by *Deffence et illustration* (1549), including texts by Marot, Scève, Labé, Du Bellay, and Ronsard.

Mr. Carron

**116B.** The Novel and Other Early 16th-Century Prose. Emphasis on Rabelais, with other texts by Marguerite de Navarre and Jean Calvin.

Mr. Carron

**116C.** Late French Humanism. Emphasis on Montaigne's *Essais*, with other texts from the Religious Wars period.

Mr. Carron

**117A-117B-117C. 17th Century.** (Formerly numbered 117A-117D.) Lecture, three hours:

**117A.** Theater. Study of French comedy and/or tragedy through representative works, including those by Corneille, Molière, and Racine.

Ms. Melzer, Ms. Stefanovska

**117B.** Prose. Study of 17th-century philosophers, moralists, and/or novelists such as Pascal, La Rochefoucault, La Bruyère, La Fayette, and La Fontaine.

Ms. Melzer, Ms. Stefanovska

**117C.** Culture and Society. (Formerly numbered 117D.) Study of 17th-century political, social, religious, and courtly aspects, including libertine and *salons milieux*, la Fronde, and Versailles.

Ms. Melzer, Ms. Stefanovska

**118A-118B-118C. 18th Century.** (Formerly numbered 118A-118D.) Lecture, three hours:

**118A.** Satire. Readings include Montesquieu's *Lettres persannes*, Diderot's *Neveu de Rameau* and *Rêve de d'Alembert*, and Voltaire's *Contes*.

Mr. Coleman, Mr. Werner

**118B.** The Novel. Readings include Prévost's *Manon Lescaut*, Diderot's *La Religieuse* and *Jacques le fataliste*, excerpts from Rousseau's *Julie*, and Laclos' *Les Liaisons dangereuses*.

Mr. Coleman, Mr. Werner

**118C.** Theater. Readings include selected plays of Marivaux and Beaumarchais, as well as selections from theoretical writings of Diderot and Rousseau.

Mr. Coleman, Mr. Werner

**119A-119D. 19th Century.** Lecture, three hours:

**119A.** Romanticism. Readings of representative poets, novelists, and playwrights of the Romantic era such as Chateaubriand, Lamartine, Hugo, Vigny, Balzac, and Stendhal.

Ms. Apter, Mr. Gans

**119B.** Generation of 1848. Readings of representative writers of the 1840s and the Second Empire such as Baudelaire, Nerval, Balzac, Flaubert, and Mérimée. May also include the *théâtre à thèse* and Parnassian poetry.

Ms. Apter, Mr. Gans

**119C.** Naturalism and Symbolism. Study of naturalism in the novel and drama as represented by Zola, Maupassant, and Becque, and of symbolism in the poetry of Baudelaire, Verlaine, Rimbaud, and Mallarmé.

Ms. Apter, Mr. Gans

**119D.** Turn of the Century. Study of genres and trends from 1885 through World War I, with emphasis on prose writers such as Huysmans, Laforgue, Barrès, Alain-Fournier, Jarry, Roussel, France, and Romain-Roland.

Ms. Apter, Mr. Gans

**120A-120D. 20th Century.** Lecture, three hours:

**120A.** Early 20th-Century Writers. Readings of works by Claudel, Apollinaire, Valéry, Gide, and Proust.

Ms. Kao, Ms. Loselle

**120B.** Literature from 1918 to 1945. Study of works by surrealists and other major writers such as Céline, Malraux, Giraudoux, and Anouilh.

Ms. Kao, Ms. Loselle

**120C.** Post-World War II Literature. Study of works by existentialists and other major writers such as Robbe-Grillet, Beckett, Genet, Ponge, and Duras.

Ms. Kao, Ms. Loselle

**120D.** Post-May 1968 Literature. Study of representative works from the "revolution" of 1968 to the present.

Ms. Kao, Ms. Loselle

**121A-121B. Contemporary Francophone Literature.** Lecture, three hours:

**121A.** French-African Literature. Survey of literary works of French expression north and south of the Sahara from World War II to the present.

**121B.** Quebec Literature. Survey of modern *Québécois* literary works.

Mr. Coleman

**124. The Short Story.** (Not the same as course 124 prior to Fall Quarter 1990.) Lecture, three hours. Survey of short fiction forms in France and the French-speaking world.

Mr. Coleman

**125. Evolution of French Comedy.** Lecture, three hours. Study of history and evolution of comedy from the Middle Ages to the theater of the absurd.

Ms. Melzer

**130A-130B-130C. History of French Civilization and Institutions.** Prerequisites: courses 6, 12, 15:

**130A.** France from Prehistoric Times to the End of the Middle Ages. Lecture, three hours. Fourth hour may be required for viewing films and other laboratory activities.

**130B.** From the Renaissance to the End of the "Ancien Régime." Lecture, three hours. Fourth hour may be required for viewing films and other laboratory activities.

**130C.** From the End of the "Ancien Régime" to 1918. Lecture, three hours. Fourth hour may be required for viewing films and other laboratory activities.

**132. Contemporary France.** Lecture, three hours. Social, cultural, and political institutions and/or movements in 20th-century France.

**140. Women's Studies in French Literature.** (Formerly numbered 158.) Lecture, three hours. Exploration of a selected aspect of the situation of women in French literature as author, character, symbol, etc.

**141. Cinema and Literature in France.** (Formerly numbered 138.) Lecture, three hours (additional hours may be required for viewing films and other laboratory activities). Study of interaction between cinema and literature in its generic, thematic, and sociocultural aspects.

**142. Poetry and Music.** Lecture, three hours. Interdisciplinary study of relation between music and literature, with emphasis on the setting of poetical texts to music, from the troubadours to modern times.

Courses 150 through 156 may be repeated once for credit with consent of major adviser.

**150. Studies in Medieval Literature.**

**151. Studies in 16th-Century Literature.**

**152. Studies in 17th-Century Literature.**

**153. Studies in 18th-Century Literature.**

**154. Studies in 19th-Century Literature.**

**155. Studies in 20th-Century Literature.**

**156. Studies in Contemporary Literature of French Expression.**

**157. Studies in French Critical Theory and Philosophy.** Lecture, three hours. Prerequisite: consent of instructor. Advanced study of major concepts in contemporary French thought, with attention to its influence on French literature and culture, and its application to literary and nonliterary texts.

**158. Studies in History of Ideas.** (Formerly numbered 160.) Lecture, three hours. Specific themes which address a particular problem of French literature, civilization, or ideas. May be repeated for credit with consent of major adviser.

The following courses may not be taken for graduate credit but may be taken as the equivalent of out-of-department electives by undergraduate majors.

**162. Modern French Thought in Translation.** (Formerly numbered 143.) Lecture, three hours. Reading and discussion of contemporary works in translation.

**163. Contemporary French Theater in Translation.** (Formerly numbered 142.) Lecture, three hours; discussion, one hour.

**164A-164B-164C. The French Novel in Translation.** (Formerly numbered 144A-144B-144C.) Lecture, three hours; discussion, one hour. Authors to be studied announced each term.

**165. Topics in French Literature in Translation.** (Formerly numbered 145.) Lecture, three hours. To be announced each term. May not be taken for major or graduate credit but may be considered as an out-of-department elective for purpose of satisfying major requirements.

**170. Honors Program in French.** (Formerly numbered 140.) Prerequisites: junior or senior standing in French with 3.5 GPA in major, completion of two honors projects, consent of department. Individual study on a topic leading to an honors thesis of approximately 20 to 25 pages to be written under guidance of a faculty member.

Ms. Loselle in charge

**199. Special Studies in French (2 to 8 units).** Prerequisites: junior or senior standing, consent of instructor, consultation with undergraduate adviser. May be repeated once.

## Graduate Courses

**201. Literary Research and Composition.** Lecture, three hours. Introduction to graduate-level literary research, including writing scholarly papers, compilation and presentation of bibliography, and practical work in computer use of data bank.

**202. Historical and Philosophical Background to French Literary Criticism.** (Formerly numbered 203A.) Lecture, three hours.

**203. Contemporary Theories.** (Formerly numbered 203B.) Lecture, three hours. Introductory study of representative texts from the works of major modern theoreticians, which may include works by Althusser, Barthes, Derrida, Foucault, Genette, Greimas, Kristeva, and Lacan.

**205. Techniques of Literary Analysis.** (Formerly numbered 202.) Lecture, three hours. Practice in close analysis of literary texts, including *explication de texte*.

**210A. Phonology and Morphology from Vulgar Latin to French Classicism.** (Formerly numbered 204A.) Lecture, three hours. Evolution of the French language. Required of candidates for Ph.D. in Romance Linguistics and Literature who specialize in philology.

**210B. Syntax and Semantics from Vulgar Latin to French Classicism.** (Formerly numbered 204B.) Lecture, three hours. Evolution of the French language. Required of candidates for Ph.D. in Romance Linguistics and Literature who specialize in philology.

**214. Problematics of Medieval Language and Literature.** (Formerly numbered 215A.) Lecture, three hours. Prerequisite to courses 215A through 215D and 250A through 250C. Introduction to Old French and the problematics of medieval literature.

Mr. Haidu

**215A-215D. Medieval Literature.** (Formerly numbered 215A-215F.) Lecture, three hours. Prerequisite: course 214.

**215A. Lyric Types.** (Not the same as course 215A prior to Fall Quarter 1990.)

Mr. Haidu

**215B. Narrative Types.**

Mr. Haidu

**215C. Theater — Comic and Religious.**

Mr. Haidu

**215D. Discursive Texts.**

Mr. Haidu

**216A-216B-216C. Renaissance.** (Formerly numbered 216A-216E.) Lecture, three hours:

**216A. Early Renaissance French Literature.** Selected readings of works from first half of the 16th century, including those by Marot, Rabelais, Marguerite de Navarre, and Scève.

Mr. Carron

**216B. Poetic "Revolution" of 1549.** Readings of works by Ronsard and Du Bellay, with selections from other writers of the 1550s.

Mr. Carron

**216C. Late Renaissance Literature.** Selected readings of works by major writers of the period from 1560 to 1600, including d'Aubigné, Sponde, Chassignet, and Montaigne.

Mr. Carron

**217A-217D. 17th Century.** (Formerly numbered 217A-217I.) Lecture, three hours:

**217A. Theater.** Analysis of representative comedies and/or tragedies, including those by Corneille, Molière, and Racine.

Ms. Melzer, Ms. Stefanovska

**217B. Prose.** Readings of selected works by philosophers, moralists, and/or novelists, including Pascal, La Rochefoucauld, La Bruyère, La Fayette, and La Fontaine.

Ms. Melzer, Ms. Stefanovska

**217C. Poetry.** Selected readings of works by major poets, including Racan, Voiture, Saint-Amant, Racine, La Fontaine, and Boileau.

Ms. Melzer, Ms. Stefanovska

**217D. Culture and Society.** Study of political, social, religious, and courtly aspects, including libertine and salons milieux, la Fronde, and Versailles.

Ms. Melzer, Ms. Stefanovska

**218A-218B-218C. 18th Century.** (Formerly numbered 218A-218D.) Lecture, three hours:

**218A. Topics in the Early Enlightenment.** Selected readings from major works of the period from 1680 to 1747.

Mr. Coleman, Mr. Werner

**218B. Topics in the Enlightenment.** Selected readings from major works of the period from 1748 to 1765.

Mr. Coleman, Mr. Werner

**218C. Topics in the Late Enlightenment.** Selected readings from major works of the period from 1766 to 1791.

Mr. Coleman, Mr. Werner

**219A-219D. 19th Century.** (Formerly numbered 219A-219K.) Lecture, three hours:

**219A. Topics in Romanticism.** Readings in literature of the Romantic period.

Ms. Apter, Mr. Gans

**219B. Topics in Realism and Naturalism.** Readings in realist and naturalist novel and theater.

Ms. Apter, Mr. Gans

**219C. Topics in Symbolism.** Readings in symbolist poetry and prose.

Ms. Apter, Mr. Gans

**219D. Poetry.** Study of development of French poetry throughout the 19th century.

Ms. Apter, Mr. Gans

**220A-220D. 20th Century.** (Formerly numbered 220A-220P.) Lecture, three hours:

**220A. Turn of the Century.** Readings of works by post-symbolist writers, as well as Valéry, Gide, and Proust.

Ms. Kao, Ms. Loselle

**220B. Literature from 1918 to 1945.** Readings of works by surrealist writers, as well as Céline, Malraux, and Anouilh.

Ms. Kao, Ms. Loselle

**220C. Post-World War II Literature.** Readings of works by existentialist writers, as well as Robbe-Grillet, Beckett, and Ponge.

Ms. Kao, Ms. Loselle

**220D. Cinema and Literature.** Comparative study of interrelations between cinematic and literary forms.

**221A-221C. French-African Literature.** (Formerly numbered 221A-221D.) Lecture, three hours:

**221A. Introduction to Study of French-African Literatures.** In-depth survey of French-African literatures prior to independence.

**221B. French-African Literature of Madagascar and Bantu Africa.** Readings and analysis of major works since independence.

**221C. French-African Literature of Berbero-Sudanese and Arabo-Islamic Africa.** Readings and analysis of major works since independence.

**222. Quebec Literature.** Lecture, three hours. Study of selected poems, novels, and plays in their cultural context.

Mr. Coleman

**241. Introduction to Generative Anthropology.** (Formerly numbered 261.) Lecture, three hours. Prerequisite: consent of instructor. Discussion of principles of generative anthropology and their application to study of literary texts and related cultural phenomena.

Mr. Gans

**242. Introduction to Study of Narrative.** Lecture, three hours. First survey of modern French methodology for critical analysis and interpretation of narrative, with examples from all periods of French literature.

Mr. Haidu

Seminars 250A through 260B may be repeated for credit.

**250A. Major Medieval Texts.** Seminar, three hours. Prerequisite: course 214. Intensive study of individual texts from multiple perspectives, such as *La Chanson de Roland*, a romance of Chrétien de Troyes, *Le Roman de la rose*, or François Villon's *Grand Testament*.

Mr. Haidu

**250B. Structures of Medieval Literature.** Seminar, three hours. Prerequisite: course 214. Advanced study of a variety of texts in terms of textual and historical structures.

Mr. Haidu

**250C. Problems in Medieval Literature.** Seminar, three hours. Prerequisite: course 214. Exploratory study of a theoretical problem, such as subjectivity and representation in medieval literature, minor or nonclassified texts, individuality and convention, or opposition of religion and secularism.

Mr. Haidu

**251A-251B. Studies in the Renaissance.**

Mr. Carron

**252A-252B. Studies in the Baroque.**

Mr. Carron, Ms. Melzer

**253A-253B. Studies in the 17th Century.**

Ms. Melzer, Ms. Stefanovska

**254A-254B. Studies in the 18th Century.**

Mr. Coleman, Mr. Werner

**255A-255B. Studies in the 19th Century.**

Ms. Apter, Mr. Gans

**256A-256B. Studies in Contemporary Literature.**

Ms. Kao, Ms. Loselle

**257A-257B. Studies in French-African Literature.**

**258A-258B. Studies in Literary Criticism.**

**259A-259B. Studies in Philosophy and Literature.**

**260A-260B. Studies in History of Ideas.** Particular problems in French literature and ideas.

**370. Teaching French in Secondary School.** Lecture, three hours; discussion, one hour. Required of all candidates for general secondary instructional credential in French.

Ms. Dufresne, Ms. Jansma

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495. Teaching French at College Level.** Lecture, three hours; discussion, one hour. Prerequisite: graduate standing. Theory and practice of language teaching. S/U grading.

Ms. Dufresne, Ms. Jansma

**596. Directed Individual Studies or Research (2 to 4 units).**

**597. Preparation for M.A. Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 8 units).** May be repeated for a maximum of 16 units. S/U grading.

**598. Research for and Preparation of M.A. Thesis (2 to 4 units).** Prerequisite: consent of instructor. A maximum of four units may be applied toward M.A. degree requirements. S/U grading.

**599. Research for and Preparation of Ph.D. Dissertation (2 to 8 units).** S/U grading.

## Geography

1255 Bunche Hall, (310) 825-1071

### Professors

C. Rainer Berger, Ph.D.  
William A.V. Clark, Ph.D.  
J. Nicholas Entrikin, Ph.D., *Chair*  
James H. Johnson, Ph.D.  
Antony R. Orme, Ph.D.  
Allen J. Scott, Ph.D.  
Stanley W. Trimble, Ph.D.  
Hartmut Walter, Ph.D.

### Professors Emeriti

Charles F. Bennett, Ph.D.  
Henry J. Bruman, Ph.D.  
Gary S. Dunbar, Ph.D.  
Huey L. Kostonick, Ph.D.  
Richard F. Logan, Ph.D.

Clifford H. MacFadden, Ph.D.  
Tom L. McKnight, Ph.D.  
Howard J. Nelson, Ph.D.  
Jonathan D. Sauer, Ph.D.  
Werner H. Terjung, Ph.D.  
Benjamin E. Thomas, Ph.D.  
Norman J.W. Thrower, Ph.D.

#### Associate Professor

Gerry A. Hale, Ph.D.

#### Assistant Professors

Judith A. Carney, Ph.D.  
Michael R. Curry, Ph.D.  
J. Mark Ellis, Ph.D.  
Chi-Fun Cindy Fan, Ph.D.  
Johannes J. Feddema, Ph.D.  
Stephen A. Matthews, Ph.D.  
Joshua S.S. Muldavin, Ph.D.  
Marilyn N. Raphael, Ph.D.  
David L. Rigby, Ph.D.  
Melissa Savage, Ph.D.

## Scope and Objectives

Geography is concerned primarily with interpreting and explaining the occurrence, distribution, and interrelationships of the physical and social elements which can be seen in the landscape. The geographer concentrates on two essential questions: where are things located? and why are they located where they are? The answer to the former is largely descriptive, but the answer to the latter involves theory and analysis. The geographer's challenge is to provide continuing interpretation of the constantly changing physical and human landscapes on the Earth's surface.

The research and teaching interests of the faculty, ranked sixth nationally by the Conference Board of the Associated Research Councils, cover major areas of geographical knowledge and underlie both the undergraduate and graduate instructional programs. These areas of interest may be broadly grouped into urban and regional development studies, spatial demography and social processes in the city, culture and environment in the modern world, physical geography, and biogeography.

Geography is an especially attractive major for liberal arts students. Its body of theory and its methodologies provide ideas and techniques applicable to a wide range of questions about our environment; it also provides both the regional and world perspectives required of responsible citizens.

The department offers two undergraduate majors that lead to the Bachelor of Arts degree: (1) the major in geography and (2) the major in geography/environmental studies. The majors prepare students for employment opportunities in both the public and private sectors (in environmental analysis, assessment, and management, map making and remote sensing, regional analysis, economic and urban spatial analysis, and teaching) and for graduate study in law, management, urban and regional planning, education, other biophysical and social sciences, and applied programs, as well as in geography.

Producing geographers of high quality is the principal goal of the graduate program, designed primarily for students pursuing the Ph.D. degree. The Master of Arts degree, which involves coursework and a thesis, serves as an essential building-block of the doctoral program. The doctorate is awarded to those students who have achieved the level of geographical knowledge and training required of a professional geographer. The degree recognizes the ability of students to make scholarly contributions in their fields of specialization and to undertake advanced research in those areas.

## Bachelor of Arts in Geography

Geography majors are encouraged to consult with the undergraduate adviser for the planning of a program suitable to their particular and individual objectives.

### Preparation for the Major

*Required:* Geography 1, 2, 3, 4, 40. All courses must be taken for a letter grade.

### The Major

*Required:* Ten upper division geography courses taken for a letter grade, which must include (1) five courses from one of the "Concentrations for the Major" listed below, (2) three additional courses in at least two different concentrations, (3) one regional course, and (4) one procedures course.

### Concentrations for the Major

By the end of your junior year and no later than the beginning of your senior year, you are required to declare your specific concentration by filing a statement with the undergraduate adviser. The purpose of the concentration requirement is to expose you to systematic in-depth work within a specific area of geography. Completion of a concentration requires five upper division geography courses. You must take a concentration's required course(s), if any, before declaring that concentration. You must select one of the following concentrations and meet its course requirements:

(1) *Urban and Regional Development Studies*

Five of the following: 135, 148, 150, 155, 157, 159A

(2) *Spatial Demography and Social Processes in the City*

*Required:* 142  
Four of the following: 143, 144, M145, M146A, M146B, M147, 150, 156, 159B

(3) *Culture and Environment in the Modern World*

Five of the following: 130, 133, 134, 135, 136, 140, 151, 159C

(4) *Physical Geography*

*Required:* 100, 100A, 104, 105, 105A  
Two of the following: 101, 103, 106, 107, 113, 159D

(5) *Biogeography*

Five of the following: 108, 111, 112, 117, 118, 122, 123, 159E, 163

## Foreign Language/Mathematics Requirement

Every geography major is required to pass five quarter courses in foreign language (in no more than two languages) or mathematics, in any combination. In foreign language, the department accepts UCLA foreign language departmental proficiency examination scores as evidence of foreign language competency. All students who entered UCLA as a geography major and/or declared the geography major during Fall Quarter 1988 and thereafter may not apply high school foreign language courses toward this requirement. In mathematics, only Mathematics 2, 3A, 3B, 3C, 5, 31A, 31B, 32A, or equivalent are acceptable. A grade of Passed or C (or better) is required in all courses intended to satisfy this requirement.

## Allied Fields

You must develop some competence in an allied field. This requirement consists of at least two upper division courses selected from at least one of the following disciplines: Afro-American studies, anthropology, art history, Asian American studies, atmospheric sciences, biology, chemistry, Chicana and Chicano studies, communication studies, Earth and space sciences, economics, folklore, history, management, philosophy, physics, political science, psychology, public health, sociology, women's studies. Architecture and Urban Planning 187 and 190 are also acceptable. Other disciplines require departmental consent.

## Honors Program

Honors in the geography major may be obtained through procedures described under Geography 199HA-199HB.

## Bachelor of Arts in Geography/Environmental Studies

The major in geography/environmental studies develops and deepens students' understanding of environmental issues; it explores problem-solving approaches from an interdisciplinary viewpoint and from the analysis of social, physical, and biotic environmental systems. The major's uniqueness lies in its emphasis on social science perspectives of human impacts on natural systems, as well as of implications of global change on local and regional human systems.

## Preparation for the Major

*Required:* Biology 2 or 5, Geography 5, 40, three courses from 1, 2, 3, 4. All courses must be taken for a letter grade. Biology 6, 21, Chemistry and Biochemistry 2 or 11A, Mathematics 3A, 3B, Philosophy 6, and Political Science 20 are recommended. Students considering graduate work are strongly advised to include Chemistry and Biochemistry 11A, 11B, Mathematics 31A, 31B, and 32A in their program.

## The Major

*Required:* Ten upper division geography courses taken for a letter grade which must include (1) five courses from the environmental studies cluster (Geography 107, 109, 110, 114, 116, 120, 121, 124, 125, 126, M128, 129), (2) three courses in at least two geography concentrations, (3) one regional course, and (4) one procedures course. A minimum of two upper division courses must be taken as electives in other social sciences departments (Anthropology, Economics, History, Political Science, Sociology), the Urban Planning Program (Graduate School of Architecture and Urban Planning), or the School of Public Health.

## Foreign Language/Mathematics Requirement

Every geography/environmental studies major is required to pass five quarter courses in foreign language (in no more than two languages) or mathematics, in any combination. In foreign language, the department accepts UCLA foreign language departmental proficiency examination scores as evidence of foreign language competency. All students who entered UCLA as a geography/environmental studies major and/or declared the geography/environmental studies major during Fall Quarter 1988 and thereafter may not apply high school foreign language courses toward this requirement. In mathematics, only Mathematics 2, 3A, 3B, 3C, 5, 31A, 31B, 32A, or equivalent are acceptable. A grade of Passed or C (or better) is required in all courses intended to satisfy this requirement.

## Honors Program

Honors in the geography/environmental studies major may be obtained through procedures described under Geography 199HA-199HB.

## Specialization in Computing

Majors in geography and geography/environmental studies may select a specialization in computing by (1) satisfying all the requirements for a bachelor's degree in the specified major, (2) completing Program in Computing 10A, 10B, 30, 60, and Mathematics 61 with a minimum grade of C in each course (Mathematics 32A and 32B are also highly recommended), and (3) completing at least two courses from Geography 104, 167, 168, 171. You graduate with a bachelor's degree in your major and a specialization in computing.

## Graduate Study

### Admission

Information, graduate brochures, and admission forms may be obtained by writing to the Graduate Adviser, Department of Geography, 1255 Bunche Hall, UCLA, Los Angeles, CA 90024-1524.

Application may be made for admission to any term. You must submit an official application, a complete set of transcripts of prior university coursework, the results of the Graduate Record Examination (GRE) General Test, and three letters of evaluation. Normally you should have (1) completed the undergraduate major in geography or a related field, (2) received a bachelor's degree, (3) attained at least a 3.3 grade-point average in courses taken in your junior and senior years and in the major for admission to the M.A. program, or a 3.5 GPA in graduate courses if you enter with an M.A., (4) attained a high GRE score (normally well above 1,200) in the combined verbal and quantitative sections, and (5) strong letters evaluating past academic and/or professional performance and indicating potential for high achievement in graduate studies. Exceptions to the guidelines may be made for students whose records indicate unusual promise.

Admission to the Ph.D. program usually requires an M.A. or M.S. degree. You must provide clear evidence of ability to conduct substantive research and to articulate ideas clearly in writing. In addition, a faculty member must be willing to serve as your interim adviser. Under rare circumstances, you may proceed directly toward the Ph.D. degree without taking a master's degree. You must have completed one year in the M.A. program, have three department faculty members review your dossier and unanimously recommend such a course of action, and pass a four-hour qualifying examination.

The Test of English as a Foreign Language (TOEFL) is normally required of all international applicants whose native language is not English.

### Major Fields or Subdisciplines

Students commonly specialize in one or more of the following areas of geographical knowledge: environmental studies, geomorphology, climatology, biogeography, cartography, and economic, social, cultural/historical, or urban geography. At the M.A. level students emphasize at least one of these specialized areas. The written qualifying examinations for the Ph.D. include one paper in each of three of the above fields, as selected by you in consultation with your adviser. However, because geographical knowledge and its associated research questions frequently transcend disciplinary and subdisciplinary boundaries, you are expected to refine and deepen your research interests further, in consultation with knowledgeable faculty members, within, across, and beyond these organized research and teaching areas.

## Foreign Language Requirement

There is no foreign language requirement for either the M.A. or Ph.D. degree.

## Spring Quarter Review

Every Spring Quarter faculty members hold a review of all graduate students in the department to assess each student's progress toward the degree and to provide each student with that appraisal. Contact the graduate adviser for further details on the review.

## Individual Studies/Teaching Courses

Contact the graduate adviser for details on the special rules governing enrollment in and application toward the degree of Geography 199, 596, 597, 598, and 599.

Courses 375 and 495 may not be applied toward the minimum course requirement for either the M.A. or Ph.D. degree.

## Master of Arts Degree

### Course Requirements

You must complete at least six courses in addition to the three required core courses (Geography 298A, 298B, 298C), for a minimum of 36 units. The core courses must be completed within two years and with a grade of B- or better in each (if you enter with a geography major, you should complete them in your first year). Four (16 units) of the six noncore courses must be 200-series (graduate) courses; the remaining two may be 500-series or 100-series courses. Your program must have the approval of the faculty mentor.

Two 500-series courses may be applied toward the minimum course requirement for the M.A. degree but not toward the minimum graduate course requirement.

### Thesis Plan

You must present a thesis, based in whole or in part on original investigation. Selection of a thesis topic, creation of a scientific design, and conduct of the investigation proceed initially under the supervision of your M.A. committee. The thesis proposal should include the exact nature of the problem to be researched, an outline of the subject matter, the proposed methods of research, the degree of originality involved, and the anticipated time of completion of the study. You must carry out the entire project in close consultation with all members of your thesis committee. Your M.A. degree requirements must be completed within five calendar years of admission to graduate standing at UCLA.

## Ph.D. Degree

### Course Requirements

You must successfully complete, within two years and with a grade of B- or better in each, the required core courses (Geography 298A,

298B, 298C) if these have not already been taken at the M.A. level. If you enter with a geography degree, you should complete them in your first year. You are also required to take at least three graduate geography courses in addition to your M.A. coursework (excluding 298A, 298B, 298C, 375, 495, and the 500 series) and three upper division or graduate courses in one or two fields (outside of geography) allied to your major research area or interdisciplinary specialization, subject to approval of your guidance committee. The allied field requirement must be met before you can take the oral qualifying examination. Your program of coursework must be approved by your guidance committee and the graduate adviser each term.

### Qualifying Examinations

You must take the written qualifying examination, which consists of five written papers and is administered by your guidance committee, no later than your sixth term in the Ph.D. program (exceptions may be made in case you are entering from disciplines outside geography). Three papers pertain to the three major fields in which you are specializing; one general paper addresses the major issues, developments, debates, etc., in the field at large; and one paper involves a field problem. The examination may be taken over a period of no more than two weeks. In case of failure, you may make one further attempt, but no sooner than three months nor longer than one year after the first examination. Preparation of your dissertation proposal follows successful completion of the written qualifying examination.

The University Oral Qualifying Examination, conducted by your official doctoral committee, focuses on your dissertation proposal. Once you have successfully completed the oral qualifying examination, you are eligible for advancement to candidacy. In instances of failure, the oral examination may be repeated once.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Dissertation/Final Oral Examination

The dissertation is the ultimate focus of your Ph.D. program and should demonstrate your ability to conduct an independent investigation of high quality in a selected field of study. The dissertation should be designed and executed in such a way as to make a significant original contribution to geographic research, a contribution that is worthy of publication, in part or as a whole, in a reputable scientific medium.

A final oral defense of the dissertation may be required by the dissertation committee. Your Ph.D. degree requirements must be completed within seven calendar years of admission to graduate standing at UCLA.

## Lower Division Courses

Contact the department office to learn of additional offerings, seminar topics, and specific instructors for the term you wish to enroll in courses in geography.

**1. Physical Environment.** Lecture, three hours; laboratory, two hours. Study of Earth's physical environment, with particular reference to the nature and distribution of landforms and climate.

**2. Biogeography.** Lecture, three hours; laboratory, two hours. Prerequisite: course 1 or equivalent. Study of Earth's biosphere, with particular reference to evolution and distribution of plants, animals, and soils.

**3. Cultural Geography.** Lecture, three hours; discussion, 90 minutes. Broad examination of basic cultural variables in human occupation of Earth's surface. Ecological, spatial, and historical approaches.

**4. Introduction to Economic Geography.** Lecture, three hours; laboratory, one hour. Introduction to basic concepts used in modern urban and economic geography. Emphasis on giving better understanding of effects of location on human behavior. Discussion and practical exercises on analysis of problems in the Los Angeles urban environment.

**5. People and the Earth's Ecosystems.** Lecture, three hours; laboratory, two hours. Examination of historical and contemporary roles of man as a major agent of biological change in Earth's ecosystems.

**40. Geographical Statistics.** Lecture, three hours; laboratory, 90 minutes. Prerequisites or corequisites: courses 1, 4. Satisfies statistics requirement for geography major. Presentation and interpretation of data, descriptive statistics and measures of spatial patterns, introduction to statistical inference and measures of association.

Ms. Fan, Mr. Rigby

## Upper Division Courses

**100. Principles of Geomorphology.** Lecture, three hours; reading period, one hour. Prerequisite: course 1 or consent of instructor. Corequisite: course 100A. Study of processes that shape the world's landforms, with emphasis on weathering, mass movement and fluvial erosion, transport, deposition; energy and material transfers; space and time considerations. P/NP or letter grading.

Mr. Orme

**100A. Principles of Geomorphology: Field and Laboratory (2 units).** Laboratory/fieldwork, six hours. Corequisite: course 100. Field and laboratory investigations of weathering, mass movement, fluvial erosion, transport, deposition; related geomorphic phenomena.

Mr. Orme

**101. Coastal Geomorphology.** Lecture, three hours; reading period, one hour. Prerequisite: course 1. Study of origin and development of coastal landforms, emphasizing past and present changes, hydrodynamic processes, sediment transfers, and such features as beaches, estuaries, lagoons, deltas, wetlands, dunes, seacliffs, and coral reefs, together with coastal zone management. P/NP or letter grading.

Mr. Orme

**101A. Coastal Geomorphology: Field and Laboratory (2 units).** Laboratory/fieldwork, six hours. Corequisite: course 101. Field and laboratory investigations of coastal landforms, emphasizing past and present changes, hydrodynamic processes, sediment transfers, and such features as beaches, estuaries, lagoons, deltas, wetlands, dunes, and seacliffs, together with coastal zone management.

Mr. Orme

**103. Paleoclimatology and Ice-Age Environments.** (Not the same as course 103 prior to Fall Quarter 1991.) Lecture, three hours; discussion, one hour. Prerequisite: course 1 or consent of instructor. Study of past climates and their environmental impact, with emphasis on the last three million years, including evidence for glacial and interglacial oscillations, historic changes, paleogeographic reconstruction, external and internal forcing mechanisms, and human implications. P/NP or letter grading.

Mr. Orme

**104. Climatology.** Lecture, three hours; reading period, one hour. Examination of the many relations between climate and the world of man. Application of basic energy budget concepts to the microclimates of relevance to ecosystems of agriculture, animals, man, and urban places.

Mr. Feddema, Ms. Raphael

**105. Hydrology.** Lecture, three hours; reading period, one hour. Prerequisite: course 1 or equivalent. Corequisite: course 105A. Role of water in geographic systems: hydrologic phenomena in relation to climate, landforms, soils, vegetation, and cultural processes and impacts on the landscape. Field projects required.

Mr. Trimble

**105A. Hydrology: Field and Laboratory (2 units).** Laboratory/fieldwork, six hours. Corequisite: course 105. Field and laboratory investigations into role of water in geographic systems: hydrologic phenomena in relation to climate, landforms, soils, vegetation, and cultural processes and impacts on the landscape. Students solve applied hydrology problems in lab and make hydrologic measurements in the field.

Mr. Trimble

**106. Soils.** Lecture, three hours; reading period, one hour. Prerequisites: course 1 or equivalent and Chemistry 11A, or consent of instructor. Corequisite: course 106A. Study of origins, evolution, properties, and utilization of soils, with special emphasis on world's major soil groups.

**106A. Soils: Laboratory (2 units).** Laboratory/fieldwork, six hours. Corequisite: course 106. Study of natural development of soils, physical and chemical properties of soil, and uses of soil. Analysis of pH, moisture, texture, nutrients, and organics. Includes one-day field trip.

**107. Soil and Water Conservation.** Lecture, three hours; discussion, one hour. Prerequisite: course 105 or Civil Engineering 150 or equivalent. Recommended: courses 100, 106, 160. Systematic study of processes of and hazards posed by erosion, sedimentation, and pollution and techniques needed to conserve soil and maintain environmental quality. Scope includes agriculture, forest engineering, mining, and other rural uses of land.

Mr. Trimble

**108. World Vegetation.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 2, or equivalent, or consent of instructor. Characteristics, distribution, environmental and cultural relationships of world's principal vegetation patterns.

**109. Environmental Systems.** (Not the same as course 109 prior to Fall Quarter 1991.) Lecture, three hours; reading period, one hour. Prerequisites: course 5, three courses from 1, 2, 3, 4. Introduction to analysis of interactive environmental systems, including examples of physicoecological and socioeconomic systems affected by natural and anthropogenic disturbance. Intended to demonstrate utility of systems approach for environmental problem solving. P/NP or letter grading.

Mr. Orme, Mr. Rigby, Mr. Walter (F)

**110. Population and Natural Resources.** (Not the same as course 110 prior to Fall Quarter 1991.) Lecture, three hours; reading period, one hour. Recommended (but not prerequisite): course 142. Examination of debate about environmental change and ability of the planet to maintain a growing population. Introduction and evaluation of basic demographic processes in context of food production, energy use, and environmental degradation. Discussion of major debates about use of resources in context of increasing population in developing countries and decreasing population in Western countries. P/NP or letter grading.

Mr. Clark, Ms. Fan (W)

**111. Forest Ecosystems.** Lecture, three hours; reading period, one hour; field trips. Prerequisites: courses 2, 40, Biology 5, 6, or equivalent. Evaluation of ecological principles as they apply to forests. Emphasis on constraints of physical environment, biotic interactions, succession, disturbances, and long-term environmental change. P/NP or letter grading.

Ms. Savage

**112. Analytical Animal Geography.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1, 2, 40 (or Statistics 50). Analysis of processes of expanding and contracting distribution areas. Focus on island biogeography and its implications for biodiversity trends in natural and anthropogenic environments. P/NP or letter grading. Mr. Walter

**113. Clastic Sedimentation Processes in Geomorphology.** Lecture, three hours. Prerequisites: courses 1, 100, and 105, or equivalent, or consent of instructor. Recommended: courses 101, 103, 107, or equivalent. Study of clastic sedimentation transport and deposition processes in geomorphology. Topics include basic fluid mechanics and sediment transport; tectonic framework of sedimentation; general overview of depositional environments; and more detailed discussion of selected environments.

**114. Ideas of Nature and Environmental Values.** Lecture, three hours; reading period, one hour. History of ideas of nature and the environment. Relationship of those ideas to contemporary ethical and political concerns about the environment and the place of humans within it. P/NP or letter grading. Mr. Curry

**M115. Environmentalism: Past, Present, and Future (4 to 6 units).** (Same as Architecture and Urban Planning CM189.) Discussion, three hours; optional field study, five to 10 hours. Exploration of history, politics, and theories of environmental movements, dynamics of race, class, and gender in relation to environmental agendas, and potential role of environmentalism in reshaping our society. Readings, discussion, and research papers. Offered annually as a graduate research seminar and biannually as an undergraduate upper division lecture and field studies program. P/NP or letter grading. Mr. Gottlieb (Sp)

**116. Origins and Histories of Crop Plants.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1, 2, and Biology 2, or equivalent, or consent of instructor. Geographic patterns of domestication and diffusion of useful plants from antiquity to the present, based on detailed case histories of selected species.

**117. Animal Geography: Anthropogenic Factors.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1, 2, 5, and Biology 2 or equivalent. Study of human cultural factors influencing animal distributions; roles of animals in human societies; origins and diffusion of domesticated animals. P/NP or letter grading. Mr. Bennett, Mr. Walter

**118. Medical Geography.** Lecture, three hours; reading period, one hour. Prerequisite: course 5 or consent of instructor. Examination of patterns of population/place/disease interactions and some effects of change and development on disease etiology and problems of health care. Mr. Matthews

**119. Agricultural and Pastoral Ecosystems.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1, 2, 5, 116, and 112 or 117, or equivalent. Recommended: courses 120, 121. Students who do not meet prerequisites should not attempt this course. Geographical, ecological, and historical analysis of world's agricultural and pastoral systems. Emphasis on energy flows, nutrient cycles, and ecological and social problems associated with the various systems.

**120. Conservation of Resources: North America.** Prerequisites: courses 1 and 2, or equivalent, or upper division standing. Analysis of basic principles and problems associated with conservation of natural resources in the U.S. and Canada. Mr. Bennett, Mr. McKnight, Mr. Trimble

**121. Conservation of Resources: Underdeveloped World.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1, 2, 120, or equivalent, or upper division standing. Analysis of principles and problems of conservation of natural resources of the underdeveloped world. Mr. Bennett

**122. Wildlife Conservation in Eastern Africa.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1, 2, 5. Analysis of tropical ecosystems of eastern Africa, including wildlife communities, vegetation, climate, and human impact. Discussion of national park systems and their natural and anthropogenic ecological dynamics. P/NP or letter grading. Mr. Walter

**123. Bioresource Management.** Lecture, three hours; discussion, one hour. Prerequisites: courses 2, 5. Recommended: course 40. Theory and practice of management and conservation of bioresources. Introduction to wildlife management, endangered species conservation, and design and maintenance of National Parks and ecological reserves. Mr. Walter

**124. Environmental Impact Analysis.** Lecture, three hours; discussion, one hour. Prerequisites: courses 40, 123, two environmental studies cluster courses. Introduction to interdisciplinary analysis of local and regional impacts on environmental systems. Evaluation of state and federal concepts for analysis of environmental impact. P/NP or letter grading.

**125. Health and the Global Environment.** (Not the same as course 125 prior to Fall Quarter 1991.) Lecture, three hours; reading period, one hour. Impact of the environment and life-style on individual health examined from a geographical perspective, with examples from both developed and developing countries. P/NP or letter grading. Mr. Matthews (Sp)

**126. Geography of Extinction.** Lecture, three hours; reading period, one hour. Prerequisites: course 5, upper division standing. Geographic and taxonomic survey and analysis of biotic extinctions over the past 15,000 years. Identification of extinction factors and pathways through case studies of extinct and endangered species and communities. P/NP or letter grading. Mr. Walter

**M127. Soils, Plants, and Society.** (Same as Biology M127.) Lecture, three hours; field trip. Prerequisites: Chemistry 11A, 11B, and 11C, or equivalent, or consent of instructor. General treatment of soil development and morphology and physical and chemical properties of soils as they relate to plant growth and distribution; soil resources, management, conservation, and cultural aspects. Use of soil profiles examined on field trip to explain developmental phenomena.

**M128. Global Environment: Problems and Issues.** (Formerly numbered 128.) (Same as Architecture and Urban Planning CM128.) Lecture, three hours. Prerequisite: course 5. Analysis of selected environmental problems and issues associated with human-induced ecological disturbances. In-depth evaluation of key problem factors and processes using a multidisciplinary approach. P/NP or letter grading. Ms. Carney, Ms. Savage

**129. Seminar: Environmental Studies.** Lecture, three hours; reading period, two hours. Prerequisites: three environmental studies cluster courses, senior standing. Qualitative/quantitative analysis of problems associated with rational protection and use of selected environmental systems (urban, rural, forest, desert, coastal, water, soil, or others).

**130. Geographical Discovery and Exploration.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Survey of history of exploration, from earliest times to modern, with emphasis on period from Marco Polo to the present. Mr. Thrower

**131. Geography of Deforestation.** Lecture, three hours; reading period, one hour. Primarily examination of landscape change but also introduction of forces tending to exploit and conserve forests. P/NP or letter grading. Ms. Savage (Sp)

**133. Cultural Geography of the Modern World.** Lecture, three hours; reading period, one hour. Prerequisite: course 3 or equivalent. Evolutionary and structural approach to sociocultural geography of the modern world system, with particular emphasis on structure and functioning of its core, semi-periphery, and periphery. Mr. Hale

**134. Space, Place, and Nature in Western Thought.** Lecture, three hours. History of development of basic ideas of geography — space, place, and nature — in Western thought. Relationship between those ideas and conceptions of science, knowledge, and inquiry. P/NP or letter grading. Mr. Curry, Mr. Entrikin

**135. African Ecology and Development.** (Not the same as course 135 prior to Fall Quarter 1991.) Lecture, three hours. Prerequisite: upper division standing. Overview of contemporary ecological and development issues in sub-Saharan Africa. P/NP or letter grading. Ms. Carney

**136. Technology, Nature, and the American Landscape.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Study of evolution of cultural landscapes of the area that is now the U.S. Examination of past geographies and of geographical change through time. P/NP or letter grading. Mr. Curry

**140. Political Geography.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Spatiality of political activity, spatial constitution of political power, control over space as central component to political struggles. Studies at local, national, state, and global scales. P/NP or letter grading. Mr. Hale

**142. Population Geography.** Lecture, three hours; reading period, one hour. Study of social and behavioral perspectives influencing people in their patterns of demographic change, migration, and mobility, with special emphasis on spatial relationships and selected case studies. Mr. Clark, Ms. Fan

**143. Geography of Health Care.** Lecture, three hours. Examination of geography of health care delivery and planning, focusing on factors which influence accessibility and utilization of health services by consumers. Spatial aspects of organization of health care influence who gets care where. P/NP or letter grading. Mr. Matthews

**144. Ethnicity in the American City.** Lecture, three hours; reading period, two hours. Prerequisite: course 4. Designed to encourage and facilitate critical thinking about geographical aspects of ethnicity in contemporary America, with focus specifically on nonwhite ethnic minorities (blacks, Hispanics, Asian Americans, and Native Americans). Use of a comparative perspective to explain changing distribution, social, economic, and political behavior, and adjustment problems these groups face in the contemporary American city. P/NP or letter grading. Ms. Fan, Mr. Johnson

**M145. Urban Poverty and Public Policy in the U.S.** (Not the same as course 145 prior to Fall Quarter 1991.) (Same as Sociology M144.) Historical overview of urban poverty and social welfare programs; ongoing debates about causes and consequences of poverty. Mr. Johnson, Ms. Ortiz (F)

**M146A-M146B. Contemporary Issues in Urban Poverty Research.** (Not the same as course 146 prior to Fall Quarter 1991.) (Same as Sociology M196A-M196B.) Prerequisite: course 150. Two-term research seminar designed to engage students in ongoing faculty research projects focusing on models of urban poverty and underclass behaviors. Mr. Johnson, Mr. Oliver, Ms. Ortiz

**M147. Urban Poverty and Public Policy in the U.S. (Field Component).** (Same as Sociology M107.) Prerequisite: course M145. Corequisite: one course from 150 or 159A through 159E. Supplements and enriches students' academic understanding of urban poverty and the underclass by personal exposure and direct observation in a field setting. Students required to develop a plan of service in a local social service agency and observe policy formulation and implementation. P/NP or letter grading. Mr. Johnson, Mr. Oliver, Ms. Ortiz

**148. Economic Geography.** Lecture, three hours; reading period, one hour. Prerequisite: course 4 or consent of instructor. Geographical aspects of economic production and growth. General theory of the space-economy. Land-use processes. Location of industry. Regional development. Mr. Scott

**M149. Transportation Geography.** (Formerly numbered 149.) (Same as Architecture and Urban Planning M149.) Prerequisite: course 3 or 4 or upper division standing. Study of geographical aspects of transportation, focusing on characteristics and functions of the various modes and on complexities of intra-urban transport.

**150. Urban Geography.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Analysis of development, functions, spatial patterns, and geographic problems of American cities.

Mr. Clark, Mr. Johnson, Mr. Scott

**151. Historical Geography of Cities.** Prerequisites: courses 3 and 4, or equivalent, or upper division standing. Survey of diffusion and growth of cities in Western civilization. Development of city systems and evolution of urban internal spatial structure.

**155. Industrial Location and Regional Development.** Lecture, three hours. Prerequisite: course 4. Reexamination of industrial local theory in light of contemporary theories of industrial organization and local labor markets. Consideration of empirical patterns of industrialization and regional growth, with special reference to Frostbelt/Sunbelt shifts and offshore relocation. P/NP or letter grading.

Mr. Scott

**156. Metropolitan Los Angeles.** Lecture, three hours; reading period, one hour. Prerequisite: upper division standing. Study of origins, growth processes, internal structure and pattern, interactions, environmental and spatial problems of the Los Angeles metropolitan area.

Mr. Clark

**157. Models of Regional Growth and Change.** Lecture, three hours; reading period, one hour. Prerequisite: course 4. Recommended: course 40. Examination of empirical and theoretical issues of regional growth and change. Introduction to supply and demand-based models of regional development. P/NP or letter grading.

Mr. Rigby

**159A-159E. Problems in Geography.** (Formerly numbered 159.) Discussion, three hours; reading period, one hour. Prerequisites: completion of three courses in a concentration, senior standing. Seminar course in which students carry out intensive research projects developed from courses within a concentration. P/NP or letter grading.

## Procedures

**160. Field and Laboratory Analysis in Geomorphology.** Laboratory/fieldwork, eight hours. Prerequisites: course 100 and two courses from 101, 103, 105, 106, 107. Limited to geography and environmental studies majors, with enrollment priority to seniors, then to juniors. Students must pre-enroll in department during prior term. Examination of field and laboratory procedures and intellectual concepts used in observation, measurement, analysis, and interpretation of landforms, constituent materials, and relevant processes.

Mr. Orme, Mr. Trimble

**163. Field Analysis in Biogeography.** Fieldwork, eight hours. Prerequisites: courses 2, 5, 110, 112. Examination of field procedures and intellectual concepts used in observation, measurement, analysis, and interpretation of phenomena pertinent to biogeography and interrelated human influences. P/NP or letter grading.

Ms. Savage, Mr. Walter

**167. Cartography (6 units).** Lecture, two hours; laboratory, six hours; independent study, three hours. Prerequisites: courses 1 and 3, or equivalent, or consent of instructor. Survey of the field of cartography. Theory and construction of map projections, compilation procedures, principles of generalization, symbolization, terrain representation, lettering, drafting and scribing, and map reproduction methods.

Mr. Matthews

**168. Computer Cartography.** Lecture, two hours; laboratory, two hours; independent study, two hours. Prerequisites: Program in Computing 3 or 10A, consent of instructor. Recommended: course 167. Theory and methods of mapping quantitative information with a computer. Problems of acquiring and processing machine-readable map data and representing them as point symbols and surfaces.

Mr. Matthews

**169. The Earth from Above.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1, 3, and 4, or consent of instructor. Interface between cartography and remote sensing. By means of a wide variety of imagery from maps and satellite photos, different landscapes analyzed and explained.

Mr. Thrower

**170. Geographical Information Systems and Analysis.** Lecture, two hours; laboratory, two hours. Prerequisite: course 40 or consent of instructor. Geographic information systems (GIS) have grown out of a number of technologies and application fields concerned with geographic location of their objects of study. Review of development and present applications of GIS technology, detailing collection, input, manipulation, and analysis of data in GIS. P/NP or letter grading.

Mr. Matthews (Sp)

**171. Quantitative Analysis.** Lecture, three hours; laboratory, one hour. Prerequisite: course 40 or consent of instructor. Introduction to methods of measurement and interpretation of geographic distributions and associations.

Mr. Matthews, Mr. Rigby

**M178. Dating Techniques in Environmental Sciences and Archaeology.** (Same as Anthropology M116Q.) Lecture, three hours; reading period, one hour. Prerequisite: consent of instructor. Introduction to scientific dating methods such as radiocarbon dating, radiation damage methods, biological dating techniques, and magnetic dating, and applications in environmental sciences, archaeology, and physical anthropology.

Mr. Berger

## Regions

**180. North America.** Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Delimitation and analysis of principal geographic regions of the U.S. and Canada.

Mr. McKnight

**181. Mexico, Central America, Caribbean.** Lecture, three hours; reading period, one hour. Prerequisite: upper division standing. Study of geographic factors, physical and cultural, that are basic to understanding the historical development of Middle America and the contemporary economic and cultural geography of Mexico and countries of Central America and the West Indies. P/NP or letter grading.

Mr. Bennett

**182A. Spanish South America.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Study of geographic factors, physical and cultural, that are basic to understanding the historical development of Spanish South America and the contemporary economic and cultural geography of the individual Spanish-speaking countries.

Mr. Bennett

**182B. Brazil.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Study of geographic factors, physical and cultural, that are basic to understanding the historical development of Portuguese South America and the contemporary economic and cultural geography of Brazil.

Mr. Bennett

**183. Europe.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Study of geographic conditions and their relation to economic, social, and political problems in Europe.

Mr. Thrower

**184. Soviet Union.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Study of geographic conditions and their relation to economic, social, and political problems in the Soviet Union.

**185. South and Southeast Asia.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Regional synthesis with varying emphasis on the people of South or Southeast Asia in their physical, biotic, and cultural environment and its dynamic transformation.

**186. Contemporary China.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Systematic geographic analysis of elements of landscape, resources, population, and socioeconomic characteristics of the People's Republic of China. Dynamics that have led to China's major role in the East Asian and international scene, with special attention to China-Japan and Sino-American relations and their geographic bases.

Ms. Fan

**187. Middle East.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Analysis of economic, social, and political geography of the area extending from Iran to Morocco and from Turkey to Sudan. Emphasis on geographical themes and problems during historical and modern times.

Mr. Hale

**188. Northern Africa.** Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Analysis of economic, social, and political geography of the area including Mediterranean Africa, Sahara, Sudanic belt, and eastern Horn. Emphasis on geographical themes and problems during historical and modern times.

Mr. Hale

**189. Middle and Southern Africa.** Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Regions of Africa south of the Sahara (middle and southern Africa) in terms of physical features, human settlement, economic production, and political patterns.

Mr. Hale

**190. Australasia.** Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Regional synthesis of physical and cultural features which characterize Australia, New Zealand, and the islands of the South Pacific.

Mr. McKnight

**191. California.** Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Systematic and regional treatment of geography of California, including physical, cultural, and economic aspects and detailed studies of the various regions.

Mr. McKnight

## Special Studies

**199. Special Studies (2 to 8 units).** Hours to be arranged. Prerequisites: junior standing with a B average in the major or senior standing, consent of instructor.

**199HA-199HB. Honors in Geography I, II.** Hours to be arranged. Prerequisites: 3.25 GPA overall, at least five upper division geography courses with a 3.5 GPA. **199HA.** Independent study course taught by team of two faculty members who assist student with bibliographic research and/or field research on a topic of mutual interest to student and the faculty members. Successful completion of course 199HA entails preparation of a detailed bibliography and outline (to be evaluated by the two faculty members) for writing of a substantial paper during course 199HB. If that work is determined to be of A quality, student is allowed to continue in honors program. If that work is graded B or below, credit is awarded, but student is not permitted to continue in honors program. **199HB.** Devoted to writing of substantial paper researched and outlined in course 199HA. It also is evaluated by the two faculty members. If paper is determined to be of A quality, student graduates with honors in geography. If paper is graded B or below, credit is awarded, but student does not receive honors.

**199I. Independent Studies for Internships (2 to 4 units).** Prerequisite: consent of instructor. Independent studies course to be supervised jointly by Field Studies Office and faculty adviser. Further supervision to be provided by placement for which student is doing internship. May not be applied toward major requirements. P/NP grading.

## Graduate Courses

### Environment

**200. History and Paradigms of Geomorphology.** Lecture, two hours; discussion, one hour; reading period, eight hours. Prerequisites: course 100, two courses from 101, 103, 105, 106, 107. Analysis of geomorphic theories since the scientific revolution, with emphasis on catastrophism, uniformitarianism, glacial theories, isostasy and eustasy, evolution and cyclicity, thermodynamics and mechanics, quantification, and current paradigms. View of each theme in its contemporary milieu. Mr. Orme

**201. Coastal Geomorphology Seminar.** Discussion, three hours; reading period, five hours; fieldwork. Prerequisites: courses 100, 101. Discussion of selected topics pertaining to geomorphic processes and responses observable in the coastal zone. May be repeated for credit. Mr. Orme

**202. Fluvial Geomorphology Seminar.** Discussion, three hours; reading period, five hours; fieldwork. Prerequisites: courses 100 and 105, or Civil Engineering 150. Discussion of selected topics pertaining to action of running water in shaping the physical landscape. May be repeated for credit.

Mr. Trimble

**203. Glacial Geomorphology Seminar.** Discussion, three hours; reading period, five hours; fieldwork. Prerequisites: courses 100, 103. Discussion of selected topics pertaining to action of snow and ice in arctic and alpine environments. May be repeated for credit.

**204A-204B-204C. Advanced Climatology.** Lecture, three hours; laboratory, one hour. Prerequisites: course 104, first year of calculus, and acquaintance with FORTRAN IV, or consent of instructor. Courses must be taken in sequence. Introduction to tools and concepts of environmental physics of relevance to natural and man-made landscapes. Such basic intellectual, mathematical, and computer programming tools are of special concern to physical geographers, ecologists, and architects.

Mr. Feddema, Ms. Raphael

**205. Seminar: Climatology.** Discussion, three hours; reading period, one hour. Prerequisites: courses 204A-204B-204C or equivalent, consent of instructor. Selected topics. May be repeated for credit.

Mr. Feddema, Ms. Raphael

**208. Advanced Biogeography: Plants.** Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisites: courses 108 and 110 or 116, or equivalent, or consent of instructor. Intensive review and analysis of physical and cultural factors influencing plant distributions. Ms. Savage

**212. Advanced Biogeography: Animals.** Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisite: course 112 or 117 or equivalent or consent of instructor. Intensive review and analysis of biophysical and cultural factors influencing animal distributions. Mr. Bennett, Mr. Walter

**213. Seminar: Biogeography.** Discussion, three hours; reading period, two hours. Prerequisites: course 208 or 212 or equivalent, consent of instructor. Related research projects growing out of course 208 or 212. May be repeated for credit.

**215. Quaternary Studies: Physical Aspects.** Discussion, three hours; reading period, two hours; fieldwork, three hours. Prerequisite: at least one course from 200 through 205 or an appropriate graduate course in atmospheric sciences or Earth and space sciences. Analysis of the changing physical environment of the Quaternary period. May be repeated for credit. Mr. Orme

**217. Quaternary Studies: Ecological Aspects.** Discussion, three hours; reading period, two hours. Prerequisites: courses 202 or 204A-204B-204C or 208 or 212 or an appropriate graduate course in anthropology, botany, Earth and space sciences, or zoology, or consent of instructor. Analysis of ecological aspects of environmental change during the Quaternary period. May be repeated for credit. Mr. Orme

**218. Advanced Medical Geography.** Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisite: course 118 or consent of instructor. In-depth study of selected topics in medical geography and intense review of recent research. Mr. Matthews

**223. Seminar: Humid Tropics.** Lecture, three hours; reading period, two hours. Prerequisite: graduate standing. Selected topics. Biophysical and cultural complexes of the humid tropics, with emphasis on problems related to human settlement and livelihood. May be repeated for credit. S/U or letter grading. Mr. Bennett

**227. Water Quality Management.** Discussion, three hours; reading period, one hour. Prerequisites: graduate standing, consent of instructor. Discussion of basic technical, regional planning, and public policy issues in water quality management.

**229. Seminar: People and Environment.** Discussion, three hours; reading period, two hours. Prerequisite: course M128 or equivalent. Analysis of man's perception of the environment throughout history and in different parts of the world and its impact on past, present, and future ecosystems.

### Human Geography

**232. Advanced Cultural Geography.** Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisite: course 133 or equivalent or consent of instructor. Lectures and discussions around specific aspects of development of cultural landscape in different geographic environments. Mr. Hale

**233. Seminar: Cultural Geography.** Discussion, three hours; reading period, two hours. Prerequisites: course 232 or 236 or equivalent, consent of instructor. Discussions on particular topics in cultural geography. Content may vary from year to year. May be repeated for credit. Mr. Entrikin, Mr. Hale

**234. Environment and Subsistence in Indigenous Cultures.** Seminar, three hours. Discussion on resource management strategies and environmental issues in indigenous cultures. Topics vary from year to year. Ms. Carney, Ms. Savage

**236. Advanced Historical Geography of the U.S.** Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisites: course 136, consent of instructor. Some major themes in American historical geography.

**237. Seminar: Historical Geography.** Discussion, three hours; reading period, two hours. Prerequisites: course 236, consent of instructor. Theory and practice of historical geography in North America and Europe. May be repeated for credit.

**240. Advanced Political Geography.** Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisite: course 140 or equivalent or consent of instructor. Intensive study of theories and principles of political geography and German geopolitics. Selected regions used as specific examples of differing techniques of study in geopolitics. Mr. Hale

**241. Seminar: Political Geography.** Discussion, three hours; reading period, two hours. Prerequisites: course 240 or equivalent, consent of instructor. Related research projects growing out of course 240. May be repeated for credit. Mr. Hale

**242. Advanced Population Geography.** Lecture, three hours; reading period, one hour. Prerequisite: course 142 or equivalent or consent of instructor. Study of population dynamics and migration, spatial variation in population composition, and population resource problems, diffusion, and epidemiology. Ms. Fan

**248. Location and Space Economy.** Lecture, two hours; discussion, one hour; reading period, one hour. Methods of locational analysis as applied to problems of regional growth and development. S/U or letter grading. Mr. Scott

**249. Seminar: Economic Geography.** Discussion, three hours; reading period, two hours. Prerequisites: course 248 or equivalent, consent of instructor. Related research projects growing out of course 248. May be repeated for credit. Mr. Scott

**250. Urban Systems.** Lecture, two hours; discussion, one hour; reading period, one hour. General study of hierarchy of urban places, including diffusion within urban hierarchy and theories to account for location and size distribution of cities. S/U or letter grading.

**251. Seminar: Urban Geography.** Discussion, three hours; reading period, two hours. Prerequisites: course 250 or equivalent, consent of instructor. Related research projects growing out of course 250. May be repeated for credit.

**252. Location and Social Structure within the City.** Lecture, two hours; discussion, one hour; reading period, one hour. Study of links between urban social and urban spatial structure, emphasizing urban residential land use, social areas of the city, and accessibility and urban form. S/U or letter grading. Mr. Scott

**254. Migration and Residential Mobility.** Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisite: consent of instructor. Description and modeling of national, regional, and intra-urban migration. Mr. Clark

### Procedures

**260. Advanced Field and Laboratory Analysis in Geomorphology.** Laboratory/fieldwork, 10 hours. Prerequisites: graduate standing, two courses from 200, 201, 202, 203, 215. Examination of advanced field and laboratory procedures used in contemporary geomorphic research, with emphasis on scientific design, instrumentation, and data evaluation. Mr. Orme, Mr. Trimble

**261. Advanced Field Analysis: Cultural Geography (8 units).** Fieldwork, once a week from 8 to 5. Prerequisites: one or more courses from 232, 233, 250, 251. Field methods and analysis applied to the cultural landscape, especially in Southern California, with particular reference to settlement, agriculture, and environmental modification.

**262. Advanced Field Analysis: Biogeography (8 units).** Fieldwork, 10 hours. Prerequisite: consent of instructor. Observation, measurement, and analysis of biogeographic phenomena, including identification and evaluation of biotic populations and communities and their modifications resulting from the impact of human activity.

**265. Geographical Bibliography.** Lecture, one hour; discussion, two hours; reading period, one hour. Prerequisite: consent of instructor. Survey of the literature of geography, with special reference to periodicals. Intended for beginning graduate students.

**267. Advanced Cartography.** Laboratory, three hours; independent study, two hours. Prerequisite: course 167 or equivalent or consent of instructor. Advanced work in theory and practical application of modern cartographic principles. Special emphasis on terrain representation, quantitative and computer mapping, scribing, color separation, and reproduction of maps.

**268. Geographic Information Systems.** Lecture, two hours; laboratory, two hours. Prerequisites: courses 167, 168, and 171, or consent of instructor. Recommended: Earth and Space Sciences 150. Encoding, storage, analysis, and display of spatial data in digital format using geographic information systems. Emphasis on geographic data (including remote sensing imagery and digital terrain models), raster and vector data structures, and spatial analysis/spatial modeling using GIS. Mr. Matthews



**269. Remote Sensing of Environment.** Laboratory, three hours; independent study, two hours. Prerequisite: course 167 or equivalent or consent of instructor. Study of aerial photographs and other remote sensing images as tools for geographical research. Particular attention to analysis of landscapes and interpretation of interrelationships of individual features in their physical and cultural complex.

**M270A-M270B-M270C. Seminars: Climate Dynamics (2 to 4 units each).** (Same as Atmospheric Sciences M272A-M272B-M272C and Earth and Space Sciences M270A-M270B-M270C.) Lecture, two hours. Prerequisite: consent of instructor. Archaeological, geochemical, micropaleontological, and stratigraphic evidence for climate change throughout the geological past. Rheology and dynamics of climatic subsystems: atmosphere and oceans, ice sheets and marine ice, lithosphere and mantle. Climate of other planets. Modeling, simulation, and prediction of modern climate on monthly, seasonal, and interannual time scale. May be repeated for credit. S/U or letter grading.

Mr. Berger, Mr. Ghil, Mr. Schubert

**M272. Spatial Statistics.** (Same as Architecture and Urban Planning M215.) Lecture, two hours; discussion, one hour; laboratory, one hour. Prerequisite: consent of instructor. Specific techniques useful in analysis of spatial data and modeling of spatial distributions. Ms. Fan

**273. Seminar: Model Building for Spatial Analysis.** Discussion, three hours. Prerequisite: consent of instructor. Discussions of philosophy and methodology of model building, with emphasis on problems unique to models of spatial structure. Individual research topics. May be repeated for credit.

Mr. Clark

**M278. Dating Techniques in Environmental Sciences and Archaeology.** (Same as Anthropology M216.) Lecture, three hours. Prerequisite: consent of instructor. Colloquium devoted to topics in dating techniques in environmental sciences, archaeology, and biological anthropology, as well as laboratory instruction and experimental work. May be repeated for credit.

Mr. Berger

## Regions

Courses 280 through 291 may be repeated for credit (lecture, two hours; discussion, two hours).

**280. North America.** Prerequisite: course 180 or consent of instructor. Mr. McKnight

**281. Middle America.** Prerequisites: course 181, consent of instructor. Mr. Bennett

**282. South America.** Prerequisites: course 182A or 182B, consent of instructor. Mr. Bennett

**283. Europe.** Prerequisites: course 183, consent of instructor.

**284. Soviet Union.** Prerequisites: course 184, consent of instructor.

**285. South and Southeast Asia.** Prerequisites: course 185, consent of instructor.

**286. Eastern Asia.** Prerequisites: course 186, consent of instructor.

**287. Middle East.** Prerequisites: course 187, consent of instructor. Mr. Hale

**288. Northern Africa.** Prerequisites: course 188, consent of instructor. Mr. Hale

**289. Middle and Southern Africa.** Prerequisites: course 189, consent of instructor.

**290. Australasia.** Prerequisites: course 190, consent of instructor. Mr. McKnight

**291. Arid Lands.** Prerequisites: courses 104, 106, 108, 116, 120, 148, or equivalent, consent of instructor. Investigation of physical and cultural complexes of the world's arid regions. Salient factors include climate, landforms, water, soils, natural vegetation, and various aspects of human occupation, including future possibilities for human utilization.

**292. Advanced Regional Geography: Selected Regions.** Lecture, three hours; discussion, one hour. Prerequisite: appropriate upper division regional course. Lecture series devoted to a specific region at discretion of instructor. May be repeated for credit.

## Seminar

**295. Seminar: Geographic Thought.** Discussion, three hours; reading period, two hours. Prerequisites: graduate standing, consent of instructor. Discussion and study of topics significant to growth of modern philosophy of geography. Mr. Entrikin

## Core Courses

**298A. Philosophical Issues in Geographical Inquiry.** Lecture, three hours. Prerequisite: consent of instructor. Discussion of geographical research within context of philosophical debates concerning the nature of scientific inquiry. Mr. Entrikin

**298B. History of Modern Geography.** Lecture, three hours; reading period, one hour. Prerequisite: consent of instructor. Evolution of the field of geography in the 19th and 20th centuries, with emphasis on professionalization of geography and its emergence as a modern academic discipline. Mr. Curry

**298C. Statistical Methods for Geographic Research.** Lecture, three hours; laboratory, two hours. Prerequisite: course 171 or equivalent. Use of linear models, discriminant functions, and factor analysis to analyze problems in geography. Mr. Clark, Mr. Rigby

## Special Studies

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495. Teaching College Geography (2 units).** Discussion, one hour; laboratory, three hours. Prerequisite: consent of instructor. Classroom practice in teaching, with individual and group instruction on related educational methods, materials, and evaluation. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research (2 to 8 units).** Prerequisite: consent of instructor. May be repeated for credit. S/U grading.

**597. Preparation for Ph.D. Qualifying Examinations (2 to 8 units).** Prerequisite: consent of instructor. Independent study. May be repeated for credit. S/U grading.

**598. Research for and Preparation of M.A. Thesis (2 to 8 units).** Prerequisite: consent of instructor. Independent study. May be repeated for credit. S/U grading.

**599. Research for and Preparation of Ph.D. Dissertation (2 to 8 units).** Prerequisite: consent of instructor. Independent study.

# Germanic Languages

302 Royce Hall, (310) 825-3955

## Professors

Ehrhard Bahr, Ph.D. (*German; Distinguished Teaching Award*), Chair

Marianna D. Birnbaum, Ph.D., in Residence (*Hungarian*)

Jesse L. Byock, Ph.D. (*Old Norse*)

Janet R. Hadda, Ph.D. (*Yiddish*)

Robert S. Kirsner, Ph.D. (*Dutch, Afrikaans*)  
Kathleen L. Komar, Ph.D. (*German; Distinguished Teaching Award*)

Wolfgang Nehring, Ph.D. (*German*)

Hans Wagener, Ph.D. (*German*)

Franz H. Bäuml, Ph.D., *Emeritus*

Carl W. Hagge, Ph.D., *Emeritus (Distinguished Teaching Award)*

Victor A. Oswald, Jr., Ph.D., *Emeritus*

Donald J. Ward, Ph.D., *Emeritus*

Terence H. Wilbur, Ph.D., *Emeritus*

## Assistant Professors

Jill Anne Kowalik, Ph.D. (*German*)

Christopher M. Stevens, Ph.D. (*Germanic Linguistics and Philology*)

## Lecturers

Jutta Landa, Ph.D. (*German; Luckman*)

*Distinguished Teaching Award*)

Wilfried M. Voge, Ph.D. (*German*), TA Coordinator

## Scope and Objectives

The Department of Germanic Languages offers an extraordinary scope of Germanic languages and literatures, including philology, linguistics, and folklore. This broad range of studies offers training in specialized fields, in addition to providing strong background in the literary and cultural traditions. The courses of instruction are designed to enable students to become effective teachers and productive scholars in either German or Germanic languages and literatures, including Germanic folklore, Hungarian, and Finnish.

Undergraduate majors in both German and Scandinavian languages lead to Bachelor of Arts degrees. The graduate program offers Master of Arts degrees in German and Scandinavian and a Ph.D. in Germanic Languages, with a variety of specialized fields available. The department also offers courses in Afrikaans, Dutch, Hungarian, Old Norse studies, and Yiddish, and a program in Finno-Ugric languages and literatures, which are open to all students.

## Bachelor of Arts in German

The undergraduate program in German is comprised of lower division courses in the German language and upper division courses in German language, linguistics, literature, civilization, and folklore. While the nucleus of the undergraduate program consists of training in language and literature, students majoring in German will be prepared for a wide range of graduate studies and activities in related fields.

## Preparation for the Major

*Required:* German 1, 2, 3, 4, 5, 6, or equivalent. Students who have completed two semesters of college German should enroll in course 4. Placement examinations may be given in instances where the proper level is difficult to determine. Native speakers of German must consult the undergraduate adviser. For additional information, all students are encouraged to contact the undergraduate adviser.

## The Major

*Required:* Fifteen upper division German courses as follows: Group I — German 100A or 100B or 100C, 108A, 108B, 129; Group II — four courses from 100A or 100B or 100C (whichever has not been taken to satisfy the Group I requirement), 101A, 101B, 101C, 121A, 121E, 128, 134; Group III — three courses from 104, 105, 106, 107, 137; Group IV — four courses from 121B or 121C, 122, 123, 124, 126, 127, 130, 132. Native speakers of German should consult the undergraduate adviser before enrolling in course 108A, 108B, or 128. German majors, especially those who wish to pursue graduate studies in German, are encouraged to enroll in courses in German history and philosophy in those respective departments and are strongly urged to acquire reading knowledge of French.

## Honors Program

To qualify for graduation with departmental honors, you must earn a cumulative grade-point average of 3.6 or better in upper division German courses and a 3.3 overall GPA, and complete German 195 with a grade of A. Contact the departmental honors adviser for procedures, special arrangements, possible exceptions, and other information.

## Instructional Credential in German

Students desiring the general secondary instructional credential in German should consult the Graduate School of Education, 1605 Maxxam Building (122 Moore Hall in early 1994, 310-825-8328) and the Department of Germanic Languages.

## Graduate Study

The Department of Germanic Languages offers the advanced degree candidate a scope and variety of studies unique among departments of German in the U.S. The department provides programs of study leading to the M.A. in German, the M.A. in Scandinavian, and the Ph.D. in Germanic Languages, with specialized fields in all areas of German literature, Germanic philology and linguistics, Germanic folklore, Scandinavian literature and philology, Netherlandic languages and literatures, Old Norse studies, and Yiddish studies. In addition, the department offers a program in Finno-Ugric languages and literatures. This wide range of studies within the Germanic languages and cultures enables the Ph.D. candidate to acquire competence in several specialized fields.

For brochures and other information, contact the Department of Germanic Languages, 302 Royce Hall, UCLA, Los Angeles, CA 90024-1539.

## Master of Arts in German

### Admission

A bachelor's degree in German, Germanic linguistics, or linguistics with a minor in German with a minimum grade-point average of 3.0 from an accredited U.S. institution or the equivalent is required. Candidates deficient in their undergraduate preparation may be admitted but are required to take remedial courses, as recommended by the graduate adviser. A placement examination in German language or literature may be required. Three letters of recommendation are also required.

### Major Fields or Subdisciplines

There are four M.A. plans that differ with respect to the course requirements and the comprehensive examinations. Plan A is for students who plan to terminate their studies with the M.A. and an instructional credential. Plan B is for students whose main interests are literary and linguistic rather than pedagogical who plan to proceed toward the Ph.D. Plan C is for students with main interests in German studies who plan to terminate their studies with the M.A. And Plan D is for students whose main interests are in Germanic linguistics who plan to proceed toward the Ph.D.

### Foreign Language Requirement

Before advancement to candidacy for the M.A., you must pass the Graduate School Foreign Language Test (GSFLT) reading examination in French with a score of 500 or better. The test is administered through UCLA Extension at the beginning of each term, including the summer.

For Plan D, requirements also include either five terms of a second Germanic language or, in exceptional cases and with approval of the relevant instructors, three terms of a second Germanic language and two terms of a third. Relevant languages include any Germanic language and, by petition, Hungarian.

### Course Requirements

**Plan A** requires a minimum of nine upper division and graduate courses, of which at least five courses must be graduate level (200 or 500 series). German 128, 129 (or equivalent), and 370 are required. Undergraduate credit for these courses (or equivalent) is applicable in satisfaction of these requirements.

**Plan B** requires a minimum of nine upper division and graduate courses, of which at least six courses must be graduate level (200 or 500 series). One seminar must be included.

**Plan C** requires a minimum of nine upper division and graduate courses (at least six must be graduate courses), with six in your major field (German) and three in your allied field (history, musicology, philosophy, political science, etc.). All allied field courses must be in the 200 series. One major field and one allied field seminar must be included.

**Plan D** requires a minimum of nine upper division and graduate courses beyond the language requirements, of which at least six courses must be graduate level (200 or 500 series) and of which up to four courses may be from other departments in a relevant area (e.g., linguistics, applied linguistics, Indo-European linguistics, Romance linguistics, etc.). German 217, C238, and one seminar must be included. Half of your coursework should be in synchronic linguistics and half in diachronic linguistics. All coursework must be approved in advance by the graduate adviser.

Course 596 may be taken twice; course 597 may be taken once before the M.A. degree; course 598 may be taken three times. However, only one 500-series course may be applied toward the M.A. course requirements.

Graduate students are expected to attend and participate in departmental lectures and colloquia.

### Thesis Plan

If you choose this plan, a thesis committee is established no later than the end of your fourth term of graduate study to evaluate the proposal for the thesis. After acceptance of the thesis you must pass a two-hour oral examination (for Plan D only, a two-hour written examination) in the field of the thesis, as well as in the fields listed below under the comprehensive examination plan.

### Comprehensive Examination Plan

Examinations are offered each term, beginning with the written part during the fifth week of each term. Under exceptional circumstances the chair of the department will receive petitions for M.A. examinations during the summer recess.

For **Plans A and B**, one examination committee is appointed for each term. The members of the committee administer the written and oral examinations. The M.A. examination consists of two written examinations of three hours each, followed by a one-hour oral examination.

Part 1 of the written examinations covers various fields. In the case of Plan A, the origin and development of the standard German language and contemporary standards of the German language are included. In the case of Plan B, bibliography, Middle High German, the history of the German language, and German literature before 1600 are included. Part 2 of the written examinations covers major works and authors of German literature from 1600 to the present and concepts of literary criticism.

For **Plan D**, the M.A. examination consists of three written examinations of two hours each, followed by a one-hour oral examination. To continue toward the Ph.D., you must receive a pass with the recommendation to continue.

After you have taken the written examinations, the M.A. committee decides whether you may proceed to the oral examination. If you fail the oral examination, the M.A. committee decides

whether you must repeat the entire examination or only the oral portion.

For **Plan C**, you must submit two research papers (approximately 10,000 words in your major field and 7,500 in your allied field) at the beginning of your sixth term of full-time study. To continue toward the Ph.D. in Germanic Languages, you must receive a pass on either the Plan B or Plan D examinations with the recommendation to continue.

If you apply for an M.A. under Plan B or D (to proceed toward the Ph.D.) and are awarded a terminal M.A., you may repeat the examinations if you choose not to have the M.A. degree officially awarded before the reexamination.

## Ph.D. in Germanic Languages

### Admission

An M.A. degree in German from an accredited U.S. institution or equivalent (e.g., *Staatsexamen* in German) is required. In case of significant deficiencies in prior training, the graduate advisers make appropriate study or course recommendations. All deficiencies must be removed prior to application for admission to candidacy for the qualifying examinations. Applicants without an M.A. in German (e.g., with an M.A. in Comparative Literature or in Linguistics) are required to pass the written part of the M.A. comprehensive examination before beginning doctoral work in the department. Applicants with an M.A. in Scandinavian who wish to major in Scandinavian literature and philology must take a formal minor in German. Three letters of recommendation are also required.

### Major and Minor Fields of Study

The department offers two Ph.D. programs. The first program requires a major and a minor field in order to give students the broadest possible education and preparation for professional flexibility in research and teaching. The second program does not require a minor and is designed to enable students to complete their studies toward the Ph.D. more expeditiously.

If you select the first program, you must, as soon as possible after admission, declare your major and minor fields. The field in which you plan to present a dissertation is your major field and is selected from the four fields in which the degree is offered: (1) German literature, (2) Germanic philology and linguistics, (3) Scandinavian literature and philology, or (4) Germanic folklore.

If you select German literature as your major field, you must choose one of the following: (1) German literature before 1700 or (2) German literature from 1700 to the present.

The minor field may be selected from the following options: (1) German literature before 1600; (2) German literature from 1600 through Romanticism; (3) German literature from Romanticism to the present; (4) German philology and linguistics; (5) modern Scandinavian

literature; (6) Germanic folklore; (7) Yiddish; (8) Dutch and Afrikaans; (9) Old Norse studies. If your major field is German literature, you may not choose options 1 through 3. As a special option, you may select an extra-departmental minor which must be individually endorsed by a majority of the departmental faculty members on the basis of your dissertation plans.

The second Ph.D. program allows specialization in either of the following two areas: (1) modern German literature (1600 to the present) or (2) Germanics — older German literature (to 1600), Germanic philology and linguistics (including Old Norse and Dutch linguistics), Germanic folklore. If you select the latter area, you are expected to choose two of these three fields, with special emphasis on one.

### Foreign Language Requirement

In addition to French, a second language examination is required either in a modern Scandinavian language or in Dutch and Afrikaans or in Latin or in Yiddish (substitution of another language may be approved by petition).

### Course Requirements

There are no course requirements *per se* for the Ph.D. However, the following rules apply: (1) you must successfully complete at least three seminars in residence before taking the qualifying examinations for the Ph.D.; (2) specific course requirements may be assigned to new students by the graduate adviser.

### Qualifying Examinations

The written examinations consist of three parts for the first Ph.D. program and two parts for the second program: (1) first half of major field (three hours); (2) second half of major field (three hours); (3) minor field (three hours).

You may take the written examinations in the major or minor field any time after admission to the doctoral program and fulfillment of all prerequisite requirements. The major field examinations are given within a period of seven school days and completed no later than four weeks before instruction ends in a given term.

Written examinations may be repeated in case of failure. Repetition of the major examination includes both parts of the major field. When you have completed the written examinations successfully, the chair of the guidance committee schedules the University Oral Qualifying Examination to be administered by the doctoral committee as soon as possible after completion of the written examinations.

Advancement to candidacy takes places when you have (1) passed the graduate reading examination in French, (2) passed a departmental reading examination either in a modern Scandinavian language or in Dutch and Afrikaans or in Latin or in Yiddish (or an approved substitute language), (3) successfully completed three seminars, and (4) passed the qualifying examinations. When you pass the

oral examination, you advance to candidacy and proceed to the writing of the dissertation.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Final Oral Examination

After your completed dissertation is accepted by the certifying members of the doctoral committee, you may be required to defend the dissertation in a final oral examination.

## German

### Lower Division Courses

No credit is allowed for completing a less advanced course after successful completion of a more advanced course in grammar and/or composition. Students with demonstrated preparation may be permitted to transfer to a more advanced course with consent of the instructor.

**1. Elementary German.** Lecture, five hours; laboratory, one hour. Mr. Voge

**1G. Elementary German for Graduate Students.** Preparation for Graduate Division foreign language reading requirement. May not be applied toward degree requirements. S/U grading.

**2. Elementary German.** Lecture, five hours; laboratory, one hour. Prerequisite: course 1. Mr. Voge

**2G. Elementary German for Graduate Students.** Preparation for Graduate Division foreign language reading requirement. May not be applied toward degree requirements. S/U grading.

**3. Elementary German.** Lecture, five hours; laboratory, one hour. Prerequisite: course 2 or two years of high school German. Mr. Voge

**4. Intermediate German.** Lecture, five hours. Prerequisite: course 3 or three years of high school German. Mr. Voge

**5. Intermediate German.** Prerequisite: course 4 or four years of high school German. Mr. Voge

**6. Intermediate German.** Prerequisite: course 5 or equivalent. Mr. Voge

**12. German Conversation (2 units).** Prerequisite: course 1 or one year of high school German. Use of German language teaching films; students have opportunity to practice spoken German in small groups. Mr. Voge

**14. Intermediate Conversation (2 units).** Prerequisite: course 3 or three years of high school German. Students have opportunity to practice spoken German in small groups. Mr. Voge

**50A-50B. Masterworks of German Literature in Translation.** Lecture, three hours. May not be applied toward completion of the major in German:

**50A. Medieval Period through Classicism.** Study and analysis of selected masterworks in English translation, including works from the earliest period, such as the heroic and courtly epic, to authors such as Grimmelshausen, Lessing, Schiller, and Goethe.

**50B. Romanticism to the Present.** Study and analysis of selected masterworks in English translation, including authors such as E.T.A. Hoffmann, Heine, Fontane, Rilke, Kafka, Brecht, Thomas Mann, Hesse, Grass, Böll, and Christa Wolf. Ms. Komar

**51. Masterworks of Germanic or East Central European Literatures in English Translation.** Lecture, three hours. Study and analysis of masterworks of Germanic or East Central European literatures (Dutch and Afrikaans, Hungarian, Old Norse, or Yiddish). Examination of one particular literature *per term*.

**88. Lower Division Seminar.** Discussion, three hours. Course of variable content limited to topics of current interest and offered whenever a staff member is available.

## Upper Division Courses

Prerequisite for all upper division courses (except 100A, 100B, 100C, 119A through M119H, 121A, 121B, 121C) is course 6 or equivalent or consent of instructor.

Courses in the German 119 literature series may not be applied toward completion of the major in German.

### Courses Open to Majors and Nonmajors; No Credit to Graduate Students in German

**100A. German Civilization and Culture before 1700.** Lectures, discussions, and readings in English; knowledge of German not required. Study of development of German civilization and institutions from earliest times to 1700. Study of German culture as represented in its literature, art, music, and architecture.

**100B. Modern German Civilization and Culture from 1700 to 1919.** Lectures, discussions, and readings in English; knowledge of German not required. Study of development of German civilization and institutions from 1700 to 1919. Study of German culture as represented in its literature, art, music, and architecture.

**100C. German Civilization and Culture in the 20th Century.** Lectures, discussions, and readings in English; knowledge of German not required. Study of development of German culture and institutions from 1919 to the present, emphasizing developments in literature, arts, and architecture.

Mr. Bahr, Mr. Wagener

**101A. Introduction to German Poetry.** Close analysis of representative examples of German lyric poetry from early as well as modern literary periods, including systematic consideration of poetic conventions and forms, diction, tone, imagery, symbolism, and metrics. Course should be taken at beginning of literary studies.

Mr. Bahr, Ms. Komar, Mr. Wagener

**101B. Introduction to German Drama.** Analysis of selected examples of drama (e.g., tragedy, comedy, one-act play, lyric drama, lyric theater, etc.), including systematic introduction to dramatic forms, techniques, and theories. Texts selected from modern literature as well as from other periods. Course should be taken at beginning of literary studies.

Mr. Bahr, Ms. Kowalik, Mr. Nehring

**101C. Introduction to German Narrative Prose.** Analysis of significant examples of narrative prose (e.g., short story, novella, novel, fairy tale, etc.), including systematic introduction to narrative forms, techniques, styles. Texts selected from modern literature as well as from older periods. Course should be taken at beginning of literary studies.

Ms. Komar, Mr. Nehring

**102. Business German.** Lecture, three hours. Prerequisite: course 6 or equivalent. Introduction to business terminology and correspondence. Topics include economic and political developments and principles of business in German-speaking countries.

Ms. Landa

**103. German Translation.** Prerequisite: course 108B with a grade of B or better or consent of instructors. German/English and English/German translation of literary texts, newspaper and magazine articles, business documents, and letters.

**104. Introduction to German Enlightenment, Sturm und Drang, and Classicism.** (Formerly numbered 103.) Lecture, three hours. Reading and discussion of representative works by Lessing, Goethe, and Schiller; their historical and social background, their relationship to music (Bach, Mozart) and philosophy (Leibniz, Kant), as well as their place in the history of ideas.

Mr. Bahr, Ms. Kowalik

**105. Introduction to German Literature from Romanticism to Realism.** Lecture, three hours. Reading and analysis of selected works from Romanticism to realism.

Ms. Komar, Mr. Nehring

**106. Introduction to Modern Literature.** Analysis of selected works of the period from 1890 to 1945.

Mr. Nehring, Mr. Wagener

**107. Introduction to Contemporary Literature.** Analysis of selected works of the period from 1945 to the present time.

**108A-108B. Conversation and Composition on Contemporary German Culture and Society I, II.** Lecture, three hours. Prerequisite: course 6 or equivalent. Course 108A or equivalent is prerequisite to 108B. Advanced language courses, with focus on speaking and writing proficiency through themes connected with contemporary German culture and society.

Ms. Landa, Mr. Stevens

### Courses Not Open for Credit to Majors or Graduate Students in German

**119A. German Literature in the Age of Chivalry, in English Translation.** Lecture, three hours. Study and analysis of literary monuments in English translation in their social and cultural settings, including courtly love lyrics, Arthurian epics, and heroic epics. May not be applied toward completion of the major in German.

**119B. Weimar Classicism and Its Influence, in English Translation.** Lecture, three hours. Study and analysis of works in English translation from the classic age of German literature and concentrating on major works of Lessing, Goethe, and Schiller and their reflection in the modern period. May not be applied toward completion of the major in German.

Mr. Bahr, Ms. Kowalik

**119C. The Faust Tradition from the Renaissance to the Modern Age, in English Translation.** Lecture, three hours. Readings and discussions in English of the Faust theme and tradition in European literature and intellectual history, including chapbook of *Doktor Faustus*, Christopher Marlowe's and Goethe's Faust dramas, and Bulgakow, as well as Thomas Mann's novel, *Doktor Faustus: The Life of the German Composer Adrian Leverkühn*. May not be applied toward completion of the major in German.

Mr. Bahr

**119D. Romantic Heritage in German Literature, in English Translation.** Lecture, three hours. Study and analysis of literary works in English translation that reflect German Romantic imagination from end of the 18th century into the 20th century. May not be applied toward completion of the major in German.

Ms. Komar, Mr. Nehring

**119E. Pattern and Chaos: Modern German Literature and Thought, in English Translation.** Lecture, three hours. Selected works in English translation of German authors, poets, and thinkers from the late 19th through the 20th century, such as Nietzsche, Thomas Mann, Kafka, Brecht, Grass, and Christa Wolf. Topics vary from term to term. May not be applied toward completion of the major in German. May be repeated for credit.

Ms. Komar

**119F. From Dream to Nightmare: The German-Jewish Experience, in English Translation.** Lecture, three hours. Study and analysis of works in English translation reflecting the process of German-Jewish assimilation and disenfranchisement, including authors such as Mendelssohn, Heine, Schnitzler, Kafka, Feuchtwanger, Anne Frank, Sachs, Celan, and Becker.

Ms. Hadda

**M119G. Interwar Central European Prose.** (Same as Humanities M162 and Slavic M125.) Lecture, three hours. Analysis of selected novels, stories, plays, and essays of representative authors of the 1920s and 1930s in translation. Special attention to relation between literature and historical and ethnic concerns. P/NP or letter grading.

Ms. Birnbaum

**M119H. Postwar Central European Prose.** (Same as Humanities M166 and Slavic M126.) Lecture, three hours. Analysis of selected novels, stories, plays, and essays of representative contemporary authors in translation. Special attention to relation between art and ideology. P/NP or letter grading.

Ms. Birnbaum

### Courses Open for Credit to Majors, Nonmajors, and Graduate Students in German

**121A. Special Problems in Literature.** Lecture or seminar, three hours. Prerequisite: upper division standing. Varying topics of current importance and immediate relevance to literary study. Designed to introduce students to contemporary trends in literary study and predominantly concerned with topics related to German literature and criticism.

**121B. German Film in Cultural Context: Early German Film.** Lecture, one hour; discussion, one hour; screenings, two to two and one-half hours. Survey of German film from the Weimar to Adenauer eras. Viewing and discussion of films by Lang, Murnau, Sternberg, Wiene, Staudte, etc., with respect to their cultural, sociopolitical, and cinematographic codes.

Ms. Landa

**121C. German Film in Cultural Context: New German Film.** Lecture, one hour; discussion, one hour; screenings, two to two and one-half hours. Survey of new German film as it evolved in the late 1960s. Viewing and discussion of films by Fassbinder, Herzog, Schlöndorff, Sanders-Brahms, Wenders, and other German-speaking filmmakers, with respect to their cultural, sociopolitical, and cinematographic codes.

Ms. Landa

**121D. Selected Topics in German Culture and Civilization.** Lecture, three hours. Required of all German majors who are candidates for standard instructional credential in secondary teaching.

**121E. Women in German Literature.** Lecture, three hours. Prerequisite: upper division standing or consent of instructor. Role of women writers and image of women in German literature of various periods (e.g., Romanticism, 19th century, early 20th century, contemporary). Readings to be selected to represent the period of literature being taught in any given term.

Ms. Komar, Ms. Kowalik

**122. Studies in German Literature before 1750.** Prerequisites: three upper division courses (including course 100A) or consent of instructor. Readings and analysis of major works from the Middle Ages to the baroque.

Mr. Wagener

**123. Goethe.** Lecture, three hours. Prerequisites: courses 100A or 100B and 104, or consent of instructor. Reading and discussion of representative works (except *Faust*) from Goethe's early period to his maturity and old age.

Mr. Bahr, Ms. Kowalik

**124. Romanticism.** Prerequisites: courses 100A or 100B and 105, or consent of instructor. Reading and analysis of major works of the Romantic period. Authors include Tieck, Novalis, E.T.A. Hoffman, and Eichendorff.

Ms. Komar, Mr. Nehring

**126. Advanced Study in Modern Literature.** Prerequisites: courses 100A or 100B or 100C and 106, or consent of instructor. Reading and analysis of a wide range of literature from 1890 to 1945.

Mr. Nehring, Mr. Wagener

**127. Advanced Study in Contemporary Literature** Prerequisites: courses 100A or 100B or 100C and 107, or consent of instructor. Analysis of a wide range of German literature from 1945 to the present.

**128. Advanced Conversation and Composition on Current and Historical Topics.** Lecture, three hours. Prerequisites: courses 108A-108B or equivalent. Advanced language course that establishes continuity between current affairs and cultural heritage of German-speaking countries and builds on courses 108A-108B to teach complex speaking and writing skills of analysis and criticism.

Ms. Landa

**129. Language and Linguistics.** (Formerly numbered 137.) Lecture, three hours. Prerequisite or corequisite: course 108A. Theories and methods of linguistics, with emphasis on structure of modern standard German, its phonology, morphology, syntax, semantics, and pragmatics. Other topics include diachronic, spatial, and social variation of German (i.e., its historical development, dialectology, and sociolinguistics). Mr. Stevens

**130. Methodology of Literary Criticism.** Prerequisite: senior standing or consent of instructor. Introduction to methodology of literary criticism, including systematic study of motif, topos, plot, space and time, semantics, stylistics, rhetoric, metrics, imagery (emblem, metaphor, allegory, symbol), structural elements (act, stanza, book, flashback, anticipation, interior monologue), narrator and reader response, humor and irony, hermeneutics. Mr. Bahr

**132. Goethe's Faust.** Prerequisites: courses 100A or 100B and 123, or consent of instructor. Detailed interpretation of Goethe's *Faust*, Parts I and II, together with general consideration of other treatments of the Faust theme in European literature. Mr. Bahr

**134. German Folklore.** Survey of various genres of German folklore.

**137. Current Topics in Germanic Linguistics.** (Formerly numbered 129.) Lecture, three hours. Prerequisite or corequisite: course 108A. Recommended: course 129. In-depth look at one topic within the field of Germanic linguistics. Topics include phonetics and phonology, morphology and syntax, semantics and pragmatics, social and spatial variation (i.e., sociolinguistics and dialectology of German), and history of German. Mr. Stevens

**C138. Linguistic Theory and Grammatical Description.** Lecture, three hours. Prerequisites: course 129 and Linguistics 20, or consent of instructor. Crucial problems in structure of Dutch and German, considered from such theoretical frameworks as sign-oriented linguistics, functional linguistics, discourse grammar, and cognitive linguistics. Discussion of formal linguistic approaches. Concurrently scheduled with course C238. Mr. Kirsner

**195. Senior Thesis Course.** Extensive reading, research, and writing of senior thesis. May be used for writing honors thesis.

**199A-199ZZ. Special Studies (2 to 4 units each).** Prerequisite: consent of instructor. To be arranged with faculty member who will direct the study (course section to be identified by two-letter code using initials of sponsoring instructor — see department for I.D. number). Independent studies for students who desire more intensive or specialized investigation of material covered in a regular course and who present such a course as a prerequisite.

## Graduate Courses

**201A. Bibliography, Research Methods, and Scholarly Writing.** Lecture, three hours. Introduction to current state of advanced research and analysis of literary and philological materials, with emphasis on bibliographies and such tools of research as reference works, series publications, journals, archives, literary histories, and computer data banks. Practical exercises in analysis of sources, compilation and presentation of bibliographies, and writing of research papers. Mr. Bahr

**201C. Theories of Literary Criticism.** Lecture, three hours. Analysis and discussion of foundations of literary criticism and current theories such as hermeneutics, postivism, psychoanalytical criticism, social historical approaches, intellectual history (Geistesgeschichte), New Criticism, Marxist Criticism, Russian and Czech Formalism, structuralism, and semiotics. Mr. Bahr, Ms. Kowalik

**202A. Middle High German.** Introduction to grammar, syntax, and vocabulary of the Middle High German language. Exercises in reading Middle High German literary works, combined with study of socio-cultural contexts in which works of the medieval period were produced and performed.

**202B. Readings in Middle High German Literature.** Extensive reading of literary monuments of the medieval period in Germany. Introduction to cultural and literary history of the Middle Ages.

**203A. The Courtly Epic.** Analysis of major epics of the medieval period in Germany, such as Hartmann's *Erec* and *Iwein*, Wolfram's *Parzival*, and Gottfried's *Tristan*. Study of courtly society, as well as introduction to methods of interpretation and analysis.

**203B. The Courtly Lyric.** Analysis of medieval songs of courtly performers, beginning with *Der von Kurenberg* and ending with *Johannes von Hadlaub*. Study of sociocultural context in which the songs were produced and performed, and introduction to methods of interpretation and analysis.

**203C. The Heroic Epic.** Survey of German heroic literature, beginning with *Hildebrandslied* and including such works as *Nibelungenlied*, *Kudrun*, and the Dietrich epics. Methods of analysis and interpretation, as well as analysis of thematic and formal characteristics of the different epics.

**204. Renaissance and Reformation Literature.** Literature of the 15th and 16th centuries, including introduction to and study of the early New High German language. Selected readings from works of authors such as Sebastian Brant, Martin Luther, Hans Sachs, and Johann Fischart.

**205. Baroque Literature.** Definition of the term baroque; development of modern baroque scholarship; influence of foreign models; analysis of sample theoretical writings (prosodies) and of representative poems, dramas, novels, and prose satires of the 17th century. Mr. Wagener

**206A. Enlightenment and Sentimentalism.** Study of representative authors of the earlier part of the 18th century from Gottsched through Lessing, including authors such as Leibniz, Thomasius, Wolff, Bodmer and Breitinger, Johann Elias Schlegel, Haller, Brockes, Anacreontic poets, Gessner, Klopstock, Mendelssohn, and Wieland. Mr. Bahr, Ms. Kowalik

**206B. Sturm und Drang.** Study of representative authors of the *Sturm und Drang* period, such as Herder, Forster, Gerstenberg, Leisewitz, Klingner, Wagner, R.M. Lenz, Moritz, Heinse, Schubart, and the young Goethe and Schiller. Mr. Bahr, Ms. Kowalik

**207A. Classicism: Goethe.** Selected topics from works of Goethe in the period from 1786 to 1832, such as *Iphigenie auf Tauris*, *Torquato Tasso*, *Wilhelm Meisters Lehrjahre*, *Die natürliche Tochter*, *Pandora*, and poetry selections. Mr. Bahr, Ms. Kowalik

**207B. Classicism: Schiller.** Selected topics from critical and dramatic works of Schiller in the period from 1793 to 1805, such as *Über Anmut und Würde*, *Über das Erhabene*, *Wallenstein*, *Maria Stuart*, *Jungfrau von Orleans*, and *Wilhelm Tell*. Mr. Bahr, Ms. Kowalik

**208. Romanticism.** Analysis of selected works of the Romantic period by authors such as Wackenroder, Tieck, the brothers Schlegel, Novalis, Hölderlin, Brentano, Arnim, the brothers Grimm, "Bonaventura," E.T.A. Hoffmann, Eichendorff, and others. Course may be genre or topic oriented. Ms. Komar, Mr. Nehring

**209A. 19th-Century Lyrics.** Development of German lyric poetry from the classic/Romantic period to symbolism. Discussion of forms, attitudes, tendencies. Analyses may include poetry by Romantic authors, as well as Heine, Platen, the political poets of *Vormärz*, Droste-Hülshoff, Keller, Storm, C.F. Meyer, Nietzsche, George, and others. Ms. Komar, Mr. Nehring

**209B. 19th-Century Drama.** Reading and analysis of selected dramas by Kleist, Büchner, Hebbel, Grillparzer, and others. Discussion and analyses may include topics such as *Schicksalstragödie*, bourgeois trivial drama, sociopolitical drama, historical drama, Viennese *Volks theater*. Ms. Komar, Mr. Nehring

**209C. 19th-Century Narrative Prose.** Analysis of German prose works from Romanticism to naturalism. Discussion of the problem of reality and literary realism with respect to narrative techniques. Authors may include Heine, Büchner, Droste-Hülshoff, Stifter, Gotthelf, Keller, C.F. Meyer, Fontane, and the early naturalists. Ms. Komar, Mr. Nehring

**210A. Naturalism and Symbolism.** Sociological background and theoretical writings concerning naturalism and symbolism. Analysis of representative poems, dramas, and shorter narratives by authors such as Holz, G. Hauptmann, George, Hofmannsthal, and Rilke. Mr. Nehring, Mr. Wagener

**210B. Expressionism and Neorealism.** Historical and sociological background in the period from 1910 to 1933. Literary magazines, theoretical writings, poetry of expressionism and Dadaism, expressionist dramas, and shorter narratives. Definition and representative works of neorealism. Mr. Wagener

**210C. 20th-Century Novel to 1945.** Analysis of selected 20th-century novels written prior to 1945. Authors of different literary and historical eras, such as Broch, Döblin, Hesse, Kafka, Heinrich Mann, Thomas Mann, and Rilke. Ms. Komar, Mr. Wagener

**211A. Contemporary Novel.** Study of selected novels in the period from 1945 to the present. Works by authors from West and East Germany, Austria, and Switzerland, such as Böll, Grass, Handke, Frisch, and Christa Wolf, analyzed and placed in context of literary, cultural, and political trends.

**211B. Contemporary Lyrics and Drama.** Study of selected dramas and poems in the period from 1945 to the present. Works by authors from West and East Germany, Austria, and Switzerland, such as Dürrenmatt, Frisch, Handke, Celan, and Brecht, analyzed and placed in context of literary, cultural, and political trends.

**217. History of the German Language.** Historical survey of development of the standard literary German language from the time of Indo-European unity through proto-Germanic, West Germanic, medieval period, Reformation, baroque period, and Enlightenment until its final codification at the end of the 19th century. Mr. Stevens

**230. Survey of Germanic Philology.** Systematic survey of major problems in the field of Germanic linguistics: origin and historical diffusion of Germanic dialects and their classification; problems in evolution of nominal and verbal morphology of the various dialects; problems in phonological evolution of the various dialects. Mr. Stevens

**231. Gothic.** Systematic study of phonology and grammar of the Gothic language, with readings in Wulfila's translation of the Bible and introduction to history of the Goths and their place in the development of modern Europe. Mr. Stevens

**232. Old High German.** Introduction to earliest phases of German literature, with extensive readings in major documents of that period (750-1050). Emphasis on grammatical interpretation of these documents and identification of dialects used in their composition. Mr. Stevens

**233. Old Saxon.** Introduction to study of earliest documents in Old Low German. Readings in the *Heliant* and study of the *Old Saxon Genesis*. Mr. Stevens

**C238. Linguistic Theory and Grammatical Description.** (Formerly numbered Dutch 234.) Lecture, three hours. Prerequisites: course 129 and Linguistics 20, or consent of instructor. Crucial problems in structure of Dutch and German, considered from such theoretical frameworks as sign-oriented linguistics, functional linguistics, discourse grammar, and cognitive linguistics. Discussion of formal linguistic approaches. Concurrently scheduled with course C138. Graduate students meet as a group one additional hour each week and write research papers of greater length and depth. Mr. Kirsner

**240A. Theories, Methods, and History of Germanic Folklore.** History of Germanic folklore studied in context of European cultural history. Evolution of theories and methods of the discipline as developed by Herder, the Grimms, Bolte, Meier, Naumann, Bau-singer, and others.

**240B. Folk Song and Ballad.** Analysis of poetic and musical aspects of German folk songs and ballads. Study of thematic and formalistic evolution of text and music, combined with introduction to theories and methods of analysis of folk music and function of folk song in its social context.

**240C. Oral Prose Genres.** Study of thematic and formal characteristics of legends, folktales, jests, proverbs, and riddles. Role of popular narrative in its sociocultural context in German history and survey of methods of analysis of narratives, texts, and contexts.

**245B. Germanic Antiquities.** Survey of prehistory and early history of Germanic civilization from the Bronze Age to the end of the migrations on basis of archaeological, historic, and philological evidence. Uses of methods of comparative ethnography, religion, and myth to interpret evidence.

**251. Seminar: Syntax and Phonology of German.** Topics selected from the field of contemporary German syntax and phonology according to needs and preparation of students enrolled (e.g., *Dialektgeographie*, generative phonology, generative syntax, *Valenztheorie*, *Texttheorie*). Mr. Stevens

**252. Seminar: Historical and Comparative Germanic Linguistics.** Topics selected from the field of historical German phonology and syntax according to needs and preparation of students enrolled (e.g., West Germanic problem and classification of the Germanic languages, development of Germanic verbal and nominal morphology, proto-Germanic syntax). Mr. Stevens

**253. Seminar: Medieval Literature.** Selected topics in medieval literature, with emphasis on problems in literary analysis and applicability of various types of analysis to medieval texts.

**254. Seminar: Renaissance and Reformation.** Seminar on selected literary or philological problems, such as a particular genre, author, or theme. Studies on textual analysis or pertinent research to apply methods of literary history to literature of the 15th and 16th centuries.

**255. Seminar: Baroque Literature.** Seminar on selected problems of German baroque literature, such as a particular genre, author, or theme. Textual analysis supplemented by critical review of research and application of methods of literary analysis pertinent to literature of this age. Mr. Wagener

**256. Seminar: Enlightenment and Sturm und Drang.** Selected topics in 18th-century literature, such as utopian literature, love and money as motifs, family structure and family life, image of women and women's literature, Jacobin literature, seduction and betrayal as motifs, nobility and middle class in 18th-century literature. Textual analysis and review of current research. Mr. Bahr, Ms. Kowalik

**257. Seminar: Age of Goethe.** Selected topics in German literature between 1775 and 1832, such as Schiller's theoretical writings, Goethe's *Faust II*, Goethe's *Wanderjahre* and *West-östlicher Divan*, Goethe's *Faust II* and Hegel's *Phänomenologie des Geistes*, the French Revolution and German classicism. Textual analysis and review of current research. Mr. Bahr, Ms. Kowalik

**258. Seminar: Romanticism.** Discussion of a specific author or topic from the Romantic period, possibly in close connection with course 208. Critical review of secondary works. Ms. Komar, Mr. Nehring

**259. Seminar: 19th-Century Literature.** Discussion of a specific author or topic of 19th-century literature, possibly in close connection with course 209A, 209B, or 209C. Critical review of secondary works. Ms. Komar, Mr. Nehring

**260. Seminar: Modern Period.** Seminar on a selected genre, author, or theme of 20th-century German literature prior to 1945. Mr. Bahr, Mr. Nehring, Mr. Wagener

**261. Seminar: Contemporary Literature.** Study of selected works, a specific author, genre, period, or topic from 1945 to the present. Texts analyzed and placed in context of literary, cultural, and political trends.

**262. Seminar: Germanic Folklore.** Detailed research on individual aspects of Germanic folklore. Topic selected generally is from course in the German 240 series that preceded the seminar. Emphasis on problems of theory and method.

**263. Seminar: Theories of Literature.** Specialization in literary theories, such as *Rezeptionsästhetik*, Neo-Marxist Criticism, New Criticism, psychoanalytic criticism or sociology of literature, structuralism, semiology, and hermeneutics. Mr. Bahr, Ms. Kowalik

**370. Teaching German in Secondary Schools.** Lecture, three hours; discussion periods. Prerequisite: graduate standing or consent of instructor. Required of all candidates for general secondary instructional credential in German. Mr. Voge

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading. Mr. Voge

**495A. Preparation for College Teaching of German (2 units).** Study of problems and methods in teaching German on college level, with emphasis on teaching and testing the listening, speaking, reading, and writing skills. May not be applied toward M.A. course requirements. S/U grading. Mr. Voge (F)

**495B. College Teaching of German: Special Problems (2 units).** Prerequisite: course 495A or consent of instructor. Study of contemporary issues in German language pedagogy, with emphasis on textbook evaluation and proficiency-oriented instruction. May not be applied toward M.A. course requirements. S/U grading. Mr. Voge (W)

**596. Directed Individual Study or Research.** To be arranged with faculty member who will direct the study or research (course section to be identified by two-letter code using initials of sponsoring instructor — see department for I.D. number). May be repeated once; however, only one course in the 500 series may be applied toward M.A. graduate course requirement. S/U grading.

**597. Preparation for M.A. Comprehensive Examination or Ph.D. Qualifying Examinations.** To be arranged with faculty member who will direct the study (course section to be identified by two-letter code using initials of sponsoring instructor — see department for I.D. number). May be taken only once before and only once after M.A. degree, except for Ph.D. candidates with a formal minor field of studies who may take course twice after M.A., once in the major and once in the minor. Only one course in the 500 series may be applied toward M.A. graduate course requirement. S/U grading.

**598. Research for and Preparation of M.A. Thesis (4 to 12 units).** To be arranged with faculty member who will direct the study (course section to be identified by two-letter code using initials of sponsoring instructor — see department for I.D. number). Only one course in the 500 series may be applied toward M.A. graduate course requirement. S/U grading.

**599. Research for and Preparation of Ph.D. Dissertation (4 to 12 units).** To be arranged with faculty member who will direct the study (course section to be identified by two-letter code using initials of sponsoring instructor — see department for I.D. number). May be repeated. S/U grading.

## Afrikaans

### Upper Division Courses

**105A. Elementary Afrikaans.** Lecture/language laboratory. Introduction to a sister language of modern Dutch and a national language of South Africa. Grammar, practice in listening, speaking, reading, and writing. Mr. Kirsner

**105B. Intermediate Afrikaans.** Lecture/language laboratory. Prerequisite: course 105A or equivalent. Grammatical exercises; reading and linguistic analysis of texts from both literary and nonliterary sources. Mr. Kirsner

**114. Afrikaans Literature in Translation.** Lecture, three hours. Readings and analysis of works by selected authors such as Brink, Joubert, Krige, Leroux, Marais, and Rabie and selected poets such as Breytenbach, Eybers, Lion Cachet, W.E.G. Louw, Van Wyk Louw, and Opperman. Mr. Kirsner

**135. Introduction to Afrikaans Literature.** Discussion, three hours. Prerequisite: course 105B or equivalent. Analysis of selected works from founding of the Genootskap van Regte Afrikaners in 1875 to the present time, including novels by recent writers such as Leroux and Brink, as well as work of poets such as Eybers, Opperman, W.E.G. Louw, Van Wyk Louw, and Breytenbach. Mr. Kirsner

**199. Special Studies in Afrikaans (2 to 4 units).** Prerequisite: consent of instructor. Independent studies for students who desire more intensive or specialized investigation of material covered in a regular course and who present such a course as a prerequisite. Mr. Kirsner

## Graduate Courses

**596. Directed Individual Study or Research in Afrikaans.** To be arranged with faculty member who will direct the study or research (course section to be identified by two-letter code using initials of sponsoring instructor — see department for I.D. number). May be repeated once. S/U grading. Mr. Kirsner

**597. Preparation for Ph.D. Qualifying Examinations.** To be arranged with instructor (see department for I.D. number). S/U grading. Mr. Kirsner

## Dutch

### Upper Division Courses

**100. Modern Dutch Culture and Society.** Lecture, three hours. Lectures, discussions, and readings in English. Survey of art, architecture, literature, film, Dutch government (including 'Pillarization' — *verzuiling*), the two World Wars, housing policy, mass media, and rise of a multiracial society. Mr. Kirsner

**103A-103B. Elementary Dutch.** Lecture/language laboratory. Course 103A or equivalent is prerequisite to 103B. Introduction to the standard language of the Netherlands and one of the three standard languages of Belgium. Practice in grammar, listening, speaking, reading, and writing. Mr. Kirsner

**103C. Intermediate Dutch.** Lecture/language laboratory. Prerequisite: course 103B or equivalent. Grammatical exercises, conversation, reading and analysis of simple texts. Mr. Kirsner

**113. Modern Dutch and Flemish Literature in Translation.** Lecture, three hours. Readings and analysis of works by selected authors of the Netherlands and northern (Flemish) Belgium such as Boon, Claus, Couperus, Hermans, Mulisch, Multatuli, and Reve and selected poets such as Campert, Gezelle, Gorter, Kloos, Lucebert, Nijhoff, Van Ostaïjen, and Vroman. Mr. Kirsner

**120. Introduction to Dutch Studies.** Prerequisite: consent of instructor. Brief review of Dutch grammar. Reading and discussion of selections from contemporary Dutch literature, contemporary Dutch literary criticism, and modern Dutch linguistics. Emphasis on developing reading skill and on acquiring familiarity with and appreciation of the scope of 20th-century Neerlandistiek. Mr. Kirsner

**131. Introduction to Modern Dutch Literature.** Discussion, three hours. Prerequisite: course 103B or 120 or equivalent. Selected works of literature of the Netherlands and northern (Flemish) Belgium from the mid-1850s to the present, including novels by such writers as Multatuli, Couperus, Hermans, Mulisch, and Reve and poetry by such groups as the symbolist *Beweging van Tachtig* and the post-War *Beweging van Vijftig*. Mr. Kirsner

**199. Special Studies in Dutch (2 to 4 units).** Prerequisite: consent of instructor. Independent studies for students who desire more intensive or specialized investigation of material covered in a regular course and who present such a course as a prerequisite. Mr. Kirsner

## Graduate Courses

**596. Directed Individual Study or Research in Dutch.** To be arranged with faculty member who will direct the study or research (course section to be identified by two-letter code using initials of sponsoring instructor — see department for I.D. number). May be repeated once. S/U grading. Mr. Kirsner

**597. Preparation for Ph.D. Qualifying Examinations.** To be arranged with faculty member who will direct the study (see department for I.D. number). S/U grading. Mr. Kirsner

## Hungarian

### Upper Division Courses

**101A. Elementary Hungarian.** Introduction to grammar and reading exercises, with emphasis on the spoken language. Ms. Birnbaum

**101B. Elementary Hungarian.** Prerequisite: course 101A or equivalent. Grammatical exercises, conversation, and reading of texts. Ms. Birnbaum

**101C. Elementary Hungarian.** Prerequisite: course 101B or equivalent. Conversation and readings in literary texts. Ms. Birnbaum

**101D. Advanced Hungarian.** Prerequisites: courses 101A, 101B, 101C, or equivalent. Grammar, conversation, vocabulary building. Ms. Birnbaum

**101E. Advanced Hungarian.** Prerequisites: courses 101A through 101D or equivalent. Conversation, reading, and discussion of literary texts. Ms. Birnbaum

**101F. Advanced Hungarian.** Prerequisites: courses 101A through 101E or equivalent. Conversation and review of Hungarian grammar from a typological point of view. Ms. Birnbaum

**120A-120B. Readings in Hungarian.** Prerequisite: course 101C or equivalent. Selections of Hungarian prose and poetry read in the original. Ms. Birnbaum

**120C. Readings in Hungarian Literature.** Prerequisites: reading knowledge of Hungarian, course 101C or equivalent. Selections of Hungarian prose and poetry read in the original. Discussion conducted in Hungarian. Ms. Birnbaum

**121A-121B. Survey of Hungarian Literature in Translation.** Intended for students in general and comparative literature, as well as students interested in Finno-Ugric studies. Survey of main trends and contacts with other literatures. Ms. Birnbaum

**130. Hungarian Civilization and Culture.** Study of Hungarian civilization and institutions from earliest times to the present. Study of Hungarian culture as represented in its arts (literature, fine arts, music). Ms. Birnbaum

**M135. Hungarian Folklore and Mythology.** (Same as Folklore M128.) General course for students in folklore and mythology, with emphasis on types of folklore and varieties of folklore research. Ms. Birnbaum

**M136. Folklore and Mythology of the Ugric Peoples.** (Same as Folklore M129.) Survey of traditions of the smaller Ugric nationalities (*Voguls, Ostyaks*, etc.). Ms. Birnbaum

**199. Special Studies in Hungarian (2 to 4 units).** Prerequisite: consent of instructor. Independent studies for students who desire more intensive or specialized investigation of material covered in a regular course and who present such a course as a prerequisite. Ms. Birnbaum

## Old Norse Studies

### Lower Division Course

**40. The Heroic Journey in Northern Myth, Legend, and Epic.** Comparison of the journeys of heroes. Readings in mythology, legend, folktale, and epic, including *Nibelungenlied*, *Volsunga saga*, *Eddas*, and *Beowulf*. Cultural and historic backgrounds to the texts. All readings in English. Mr. Byock

### Upper Division Courses

**C139. The Saga.** (Formerly numbered 139.) Lecture, three hours. The sagas are the largest extant medieval prose literature. Texts in English, with selections from the different types of Icelandic sagas. Consideration of the history and society that produced these narratives. Concurrently scheduled with course C268. Mr. Byock

**C140. Viking Civilization and Literature.** (Formerly numbered 140.) Lecture, three hours. History, society, and culture of early Scandinavians. All texts in English, including readings in Old Norse sagas and *Eddas*. Concurrently scheduled with course C241. Mr. Byock

**C145. Old Norse Literature and Society.** Lecture, three hours. Critical issues in medieval Scandinavian studies. May be repeated for credit. Concurrently scheduled with course C272. Mr. Byock

**151. Elementary Old Norse.** Introduction to grammar and pronunciation of Old Norse. Selected readings from the sagas and *Prose Edda*. Mr. Byock

**152. Intermediate Old Norse.** Prerequisite: course 151 or equivalent. Continued grammar, pronunciation, and readings from the *Eddas* and sagas of Icelanders, Norwegian kings, and legendary heroes. Mr. Byock

**153. Modern Icelandic.** Prerequisite: course 152 or equivalent. Grammar, readings, and conversation. Mr. Byock

**199. Special Studies in Old Norse (2 or 4 units).** Prerequisite: consent of instructor. Independent studies for students who desire more intensive or specialized investigation of material covered in a regular course and who present such a course as a prerequisite. Mr. Byock

## Graduate Courses

**221. Advanced Old Norse Prose.** Prerequisite: course 152 or equivalent. Readings of major saga texts. Also, secondary sources which bear on specific issues in Old Norse literature and medieval Scandinavian history. Mr. Byock

**222. Advanced Old Norse Poetry.** Prerequisite: course 152 or equivalent. Readings of mythological and heroic poems from *Poetic Edda*. Secondary sources used where appropriate. Mr. Byock

**C241. Viking Civilization and Literature.** Lecture, three hours. History, society, and culture of early Scandinavians. All texts in English, including readings in Old Norse sagas and *Eddas*. Concurrently scheduled with course C140. Graduate students meet as a group one additional hour each week and write research papers of greater length and depth. Mr. Byock

**245A. Germanic and Scandinavian Mythology.** Lecture, three hours. Study of Northern myth and religion through close reading of Eddic texts and secondary sources. Mr. Byock

**C268. The Saga.** Lecture, three hours. The sagas are the largest extant medieval prose literature. Texts in English, with selections from the different types of Icelandic sagas. Consideration of the history and society that produced these narratives. Concurrently scheduled with course C139. Graduate students meet as a group one additional hour each week and write research papers of greater length and depth. Mr. Byock

**C272. Old Norse Literature and Society.** (Formerly numbered C223.) Lecture, three hours. Critical issues in medieval Scandinavian studies. May be repeated for credit. Concurrently scheduled with course C145. Graduate students meet as a group one additional hour each week and write research papers of greater length and depth. Mr. Byock

**596. Directed Individual Study or Research.** To be arranged with faculty member who will direct the study or research (course section to be identified by two-letter code using initials of sponsoring instructor — see department for I.D. number). May be repeated once; however, only one course in the 500 series may be applied toward M.A. graduate course requirement. S/U grading. Mr. Byock

**597. Preparation for Ph.D. Qualifying Examinations.** To be arranged with faculty member who will direct the study (see department for I.D. number). S/U grading. Mr. Byock

## Yiddish

### Upper Division Courses

**101A. Elementary Yiddish.** (Formerly numbered 1.) Introduction to grammar; instruction in listening, speaking, reading, and writing skills. Ms. Hadda

**101B. Elementary Yiddish.** (Formerly numbered 2.) Prerequisite: course 101A or equivalent. Ms. Hadda

**101C. Elementary Yiddish.** (Formerly numbered 3.) Prerequisite: course 101B or equivalent. Ms. Hadda

**104. Advanced Yiddish.** Lecture, three hours. Prerequisite: course 101C or equivalent. Grammatical exercises, reading and linguistic analysis of texts, conversation. Ms. Hadda

**121A. 20th-Century Yiddish Poetry in English Translation.** Prerequisite: upper division standing or consent of instructor. Readings in 20th-century Yiddish poetry and drama. Ms. Hadda

**121B. 20th-Century Yiddish Prose and Drama in English Translation.** Prerequisite: upper division standing or consent of instructor. Readings in 20th-century Yiddish prose. Ms. Hadda

**121C. Special Topics in Yiddish Literature in English Translation.** Varying topics of importance and relevance to Yiddish literary study. Reading and analysis of a wide range of 19th- and 20th-century literature. Ms. Hadda

**131A. Modern Yiddish Poetry.** Prerequisite: course 104 or consent of instructor. Readings in modern Yiddish poetry. Ms. Hadda

**131B. Modern Yiddish Prose and Drama.** Prerequisite: course 104 or consent of instructor. Readings in modern Yiddish prose and drama. Ms. Hadda

**131C. Special Topics in Yiddish Literature.** Prerequisite: course 131A or 131B. Varying topics of importance and relevance to Yiddish literary study. Reading and analysis of a wide range of 19th- and 20th-century literature. Ms. Hadda

**199. Special Studies in Yiddish (2 to 4 units).** Prerequisite: consent of instructor. Independent studies for students who desire more intensive or specialized investigation of material covered in a regular course and who present such a course as a prerequisite. Ms. Hadda

## Graduate Courses

**596. Directed Individual Study or Research in Yiddish.** To be arranged with faculty member who will direct the study or research (course section to be identified by two-letter code using initials of sponsoring instructor — see department for I.D. number). May be repeated once. S/U grading. Ms. Hadda

**597. Preparation for Ph.D. Qualifying Examinations.** To be arranged with faculty member who will direct the study (see department for I.D. number). S/U grading. Ms. Hadda

## Scandinavian Section

332 Royce Hall, (310) 825-3955

### Professors

James R. Massengale, Ph.D.  
Mary Kay Norseng, Ph.D., *Vice Chair*  
Ross P. Shideler, Ph.D. (*Distinguished Teaching Award*)  
Kenneth G. Chapman, Ph.D., *Emeritus*

### Lecturer

Jules L. Zentner, Ph.D.

## Scope and Objectives

Scandinavia consists of five Northern European countries: Denmark, Finland, Iceland, Norway, and Sweden. These countries form a geographic bridge between the American and European continents and a political bridge between Western and Eastern Europe. For all students of literature, language, the arts, and the social and physical sciences, Scandinavia is of particular interest.

The modern Scandinavian program educates students about Scandinavia through the study of its languages and literatures. The Scandinavian Section offers both undergraduate and graduate degrees in the languages and literatures of Denmark, Norway, and Sweden, as well as a strong set of course offerings in Finnish language, literature, and folklore. Danish, Norwegian, and Swedish are mutually understandable languages, giving the student of one access to the literatures and cultures of the other two. Both undergraduate and graduate majors are expected to concentrate on one Scandinavian language, though they study the literatures of the other language areas.

## Bachelor of Arts in Scandinavian Languages

### Preparation for the Major

*Required:* Scandinavian 1, 2, 3, 4, and 5, or 11, 12, 13, 14, and 15, or 21, 22, 23, 24, 25, and 30, or equivalent.

### The Major

*Required:* Twelve upper division courses in Scandinavian, including 105 and 106 or 110 for two terms and 141, 142, 143. As an option, three upper division courses in a related field may be taken. These three courses must be approved in advance by the undergraduate adviser. It is recommended that students who

plan to do graduate work in Scandinavian take German 1 through 6.

## Master of Arts in Scandinavian

### Admission

In addition to the University minimum requirements, prospective students in the M.A. program in Scandinavian must have an undergraduate major in Scandinavian languages or equivalent. If you are deficient in the undergraduate major, you must complete it by taking the appropriate courses as recommended by the graduate adviser. A placement examination in the Scandinavian languages, as well as in German, may be required.

Three letters of recommendation are required by the Graduate Division.

For a brochure describing the program and requirements, write to the Scandinavian Section, 332 Royce Hall, UCLA, Los Angeles, CA 90024-1537.

### Major Fields or Subdisciplines

There are no specifically designated major fields or subdisciplines in the M.A. program, but students emphasize one modern language and literature area in Danish, Norwegian, or Swedish.

### Foreign Language Requirement

Reading knowledge of French or German is required (in addition, of course, to knowledge of the Scandinavian languages). You must pass the Graduate School Foreign Language Test (GSFLT) reading examination in French or German with a score of 500 or better or must pass at least one upper division course in French or German.

### Course Requirements

A total of 12 courses is required for the M.A. degree. These include a minimum of nine upper division and graduate courses in Scandinavian languages, at least five of which must be graduate courses. Three upper division or graduate-level courses may be taken in a related field of study to be determined in consultation with the graduate adviser; at least one of these must be at the graduate level. Comparative Literature 200 or English 201A or an equivalent course in methodology is required as one of the 12 courses.

Three 596 courses (12 units) may be applied toward the total course requirement, but only one (four units) may be applied toward the minimum graduate course requirement.

### Comprehensive Examination Plan

A comprehensive examination, based on the required coursework and a reading list, is required of all candidates for the M.A. degree. The examination is given whenever you have completed the course requirements and, in consultation with the graduate adviser, your

general and reading list preparation is deemed adequate.

The comprehensive examination is both written and oral; students who fail may be reexamined once without petitioning.

*For the Ph.D. degree in Germanic Languages with Scandinavian literature as a major or minor field, see the "Ph.D. in Germanic Languages."*

## Lower Division Courses

No credit is allowed for completing a less advanced course after successful completion of a more advanced course in grammar and/or composition. Students with demonstrated preparation may be permitted a more advanced program by the section or may be transferred to a more advanced course with consent of the instructor.

Native speakers of Norwegian, Swedish, or Danish may not enroll in any language course (including courses 105, 106, 110) in the Scandinavian Section, except by petition in writing to the section. Non-Scandinavian students with knowledge of one of these Scandinavian languages may not take courses in the others except by petition in writing. Petitions must include a description of the student's linguistic background and the reason for wanting to take the language course in question.

### 1. Elementary Swedish.

Mr. Massengale, Mr. Shideler

**2. Elementary Swedish.** Prerequisite: course 1 or equivalent. Mr. Massengale, Mr. Shideler

**3. Elementary Swedish.** Prerequisite: course 2 or equivalent. Mr. Massengale, Mr. Shideler

**4. Intermediate Swedish.** Prerequisite: course 3 or equivalent. Mr. Massengale, Mr. Shideler

**5. Intermediate Swedish.** Prerequisite: course 4 or equivalent. Mr. Massengale, Mr. Shideler

**11. Elementary Norwegian.** Ms. Norseng

**12. Elementary Norwegian.** Prerequisite: course 11 or equivalent. Ms. Norseng

**13. Elementary Norwegian.** Prerequisite: course 12 or equivalent. Ms. Norseng

**14. Intermediate Norwegian.** Prerequisite: course 13 or equivalent. Ms. Norseng

**15. Intermediate Norwegian.** Prerequisite: course 14 or equivalent. Ms. Norseng

**21. Elementary Danish.** Mr. Massengale

**22. Elementary Danish.** Prerequisite: course 21 or equivalent. Mr. Massengale

**23. Elementary Danish.** Prerequisite: course 22 or equivalent. Mr. Massengale

**24. Intermediate Danish.** Prerequisite: course 23 or equivalent. Mr. Massengale

**25. Intermediate Danish.** Prerequisite: course 24 or equivalent. Mr. Massengale

**30. Intermediate Danish, Norwegian, and Swedish.** Prerequisite: course 5 or 15 or 25 or equivalent. Readings in Danish, Norwegian, and Swedish. Written and oral exercises. P/NP (undergraduates), S/U (graduates), or letter grading.

**40. Scandinavian Civilization.** Discussion, three hours. Survey of Scandinavian civilization, focusing on the contemporary political and social situation in Denmark, Finland, Iceland, Norway, and Sweden by examining the historical development. Readings in both literary and nonfiction texts. P/NP or letter grading. Mr. Zentner



**50. Introduction to Scandinavian Literature.** Lecture, three hours. Intended for students in general and for those wishing to prepare for more advanced and specialized studies in Scandinavian literature and culture. Selected works from literature of Sweden, Norway, Denmark, Iceland, and Finland, ranging from myth, national epic, saga, and folktale through modern novel, poem, play, short story, and film script, read in English and critically discussed.

Ms. Norseng, Mr. Zentner

**60. Ingmar Bergman and Other Swedish Film-makers.** Discussion, three hours. Knowledge of a Scandinavian language or of film not required. Intended for students in general and for those preparing for more advanced studies in Scandinavian literature or culture. History of Swedish film, emphasizing how it reflects social and cultural aspects of Scandinavian life. Discussion and analysis of representative Bergman and other Swedish films.

Mr. Zentner

## Upper Division Courses

**105. Advanced Swedish.** Discussion, three hours. Prerequisite: course 30 or equivalent. Readings, composition, and conversation in Swedish.

Mr. Massengale, Mr. Shideler

**106. Advanced Swedish.** Discussion, three hours. Prerequisite: course 105 or equivalent. Readings, composition, and conversation in Swedish.

Mr. Massengale, Mr. Shideler

**110. Advanced Danish and/or Norwegian.** Discussion, three hours. Prerequisite: course 30 or equivalent. Readings, composition, and conversation in Danish and Norwegian. May be repeated once for credit.

Mr. Massengale, Ms. Norseng

**M123A. Finnish Folklore and Mythology.** (Same as Folklore M123A.) Methods and results of Finnish folklore studies and mythic traditions of the Finns. Special attention to oral epic, beliefs, and legends.

**M123B. Finnish Folk Song and Ballad.** (Same as Folklore M123B.) Course M123A is not prerequisite to M123B. Survey of Finnish balladry and folk song, with attention to historical development, ethnic background, and poetic and musical values.

**M125. Folklore and Mythology of the Lapps.** (Same as Folklore M125.) Survey of Lappish beliefs, customs, and various genres of oral tradition, including tales, legends, songs, and music. Attention also to material manifestations of Lappish culture: arts and crafts, textiles, costume, folk technology.

**130. Elementary Finnish.** Introduction to pronunciation and grammar.

**131. Intermediate Finnish.** Prerequisite: course 130 or equivalent. Grammatical exercises and readings.

**132. Advanced Finnish.** Prerequisite: course 131 or equivalent. Readings, composition, and conversation.

**138. Survey of Finnish Literature.** Conducted in English; knowledge of Finnish not required. Intended for students in general and comparative literature, as well as students interested in Finnish studies. Readings and discussions of selected works from the literature of Finland in the 19th and 20th centuries.

**141. Backgrounds of Scandinavian Literature.** Discussion, three hours. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language not required. Readings and discussion of representative texts selected from literature of medieval, Renaissance, baroque, and Enlightenment periods.

Mr. Massengale

**142. Scandinavian Literature of the 19th Century.** Discussion, three hours. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language not required. Readings and discussion of selected works from Romantic, realistic, and post-Romantic literature of Scandinavia in the 19th century.

Mr. Massengale, Ms. Norseng, Mr. Shideler

**143. Scandinavian Literature of the 20th Century.** Discussion, three hours. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language not required. Readings and discussion of selected works of modern Scandinavian literature from beginning of the century to the present.

Mr. Massengale, Ms. Norseng, Mr. Shideler

**C144. Henrik Ibsen.** Discussion, three hours. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language not required. Readings and discussion of selected plays by Henrik Ibsen. May be concurrently scheduled with course C251.

Ms. Norseng

**C145. August Strindberg.** Discussion, three hours. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language not required. Readings and discussion of selected plays by August Strindberg. May be concurrently scheduled with course C252.

Mr. Massengale, Mr. Shideler

**C146. Søren Kierkegaard.** Discussion, three hours. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language not required. Readings and discussion of selected works by Søren Kierkegaard. May be concurrently scheduled with course C253.

Mr. Massengale

**C147. Knut Hamsun.** Discussion, three hours. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language not required. Readings and discussion of selected works by Knut Hamsun. May be concurrently scheduled with course C254.

Ms. Norseng

**C180. Literature and Scandinavian Society.** Discussion, three hours. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language not required. Discussion of selected aspects of Scandinavian society based on readings of contemporary literature as well as historical and/or sociological material. May be repeated for credit (as determined by undergraduate adviser) with topic change. May be concurrently scheduled with course C263.

Mr. Massengale, Ms. Norseng, Mr. Shideler

**181. Contemporary Swedish Literature.** Discussion, three hours. Prerequisite: reading knowledge of a Scandinavian language. Reading and analysis of selected texts by major 20th-century Swedish authors.

Mr. Shideler

**C182. Theory of the Scandinavian Novel.** Discussion, three hours. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language not required. Analysis of predominant structures of the Scandinavian novel from its 18th-century beginnings through its rise in the 19th century and its 20th-century evolution. Emphasis on works of writers such as Kierkegaard, Andersen, Almqvist, Jacobsen, Hamsun, and Hansen. May be concurrently scheduled with course C264.

Mr. Massengale, Ms. Norseng, Mr. Shideler

**183. Scandinavian Ballads.** Lecture, three hours. Prerequisite: reading knowledge of a Scandinavian language. Survey of Danish, Norwegian, and Swedish ballads, with attention to their historical development, poetic content, and musical/poetic structure.

Mr. Massengale

**184. Hans Christian Andersen.** Lecture, three hours. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language not required. Conducted in English. Study of works of Hans Christian Andersen, Danish novelist, dramatist, and writer of tales, including consideration of his literary background and of his times. Analysis of his works in terms of their structure, style, and meaning. P/NP or letter grading.

Mr. Massengale

**C185. Seminar: Scandinavian Literature.** Discussion, three hours. Prerequisite: reading knowledge of a Scandinavian language. Selected topics in Scandinavian prose, poetry, and drama. May be repeated for credit with consent of instructor and undergraduate adviser. May be concurrently scheduled with course C265.

Mr. Massengale, Ms. Norseng, Mr. Shideler

**190. Honors Course in Scandinavian.** Prerequisites: senior standing with a minimum 3.0 GPA in the major, consent of honors committee. Intensive study of a selected special topic in Scandinavian. Discussions, oral and written reports.

**199A-199ZZ. Special Studies in Scandinavian (2 or 4 units each).** Prerequisites: senior or graduate standing, consent of instructor. To be arranged with faculty member who will direct the study (course section to be identified by two-letter code using initials of sponsoring instructor — see section for I.D. number). Independent studies designed for graduates or senior undergraduates who desire more intensive or specialized investigation of material covered in a regular course and who present such a course as a prerequisite.

## Graduate Courses

**C251. Henrik Ibsen.** Discussion, three hours. Prerequisites: advanced knowledge of a modern Scandinavian language, consent of instructor. Intensive study of works of Henrik Ibsen. May be concurrently scheduled with course C144.

Ms. Norseng

**C252. August Strindberg.** Discussion, three hours. Prerequisites: advanced knowledge of a modern Scandinavian language, consent of instructor. Intensive study of works of August Strindberg. May be concurrently scheduled with course C145.

Mr. Massengale, Mr. Shideler

**C253. Søren Kierkegaard.** Discussion, three hours. Prerequisites: advanced knowledge of a modern Scandinavian language, consent of instructor. Intensive study of works of Søren Kierkegaard. May be concurrently scheduled with course C146.

Mr. Massengale

**C254. Knut Hamsun.** Discussion, three hours. Prerequisites: advanced knowledge of a modern Scandinavian language, consent of instructor. Intensive study of works of Knut Hamsun. May be concurrently scheduled with course C147.

Ms. Norseng

**C263. Seminar: Scandinavian Studies.** Prerequisites: graduate standing or consent of instructor, knowledge of a Scandinavian language. Intensive study of selected aspects of Scandinavian society based on readings in the literature as well as historical and/or sociological material. May be repeated for credit (as determined by graduate adviser) with topic change. May be concurrently scheduled with course C180.

Mr. Massengale, Ms. Norseng, Mr. Shideler

**C264. Theory of the Scandinavian Novel.** Prerequisites: advanced knowledge of a Scandinavian language, consent of instructor. Analysis of predominant structures of the Scandinavian novel from its 18th-century beginnings through its rise in the 19th century and its 20th-century evolution. Emphasis on works of writers such as Kierkegaard, Andersen, Almqvist, Jacobsen, Hamsun, and Hansen. May be concurrently scheduled with course C182.

Mr. Massengale, Ms. Norseng, Mr. Shideler

**C265. Seminar: Scandinavian Literature.** Discussion, three hours. Prerequisite: reading knowledge of a Scandinavian language. Selected topics in Scandinavian prose, poetry, and drama. May be repeated for credit with consent of instructor and graduate adviser. May be concurrently scheduled with course C185.

Mr. Massengale, Ms. Norseng, Mr. Shideler

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research (2 to 6 units).** Prerequisite: graduate standing in Scandinavian. To be arranged with faculty member who will direct the study or research. Twelve units may be applied toward total course requirement, but only four units may be applied toward minimum graduate course requirement. May be repeated twice. S/U or letter grading.

**597. Preparation for M.A. Comprehensive Examination or Ph.D. Qualifying Examinations (4 to 8 units).** To be arranged with faculty member who will direct the study or research. May be repeated once. May not be applied toward M.A. minimum course requirements. S/U grading.

**599. Research for and Preparation of Ph.D. Dissertation.** To be arranged with faculty member who will direct the study or research. May be repeated. S/U grading.

## History

6265 Bunche Hall, (310) 825-4601

### Professors

Edward A. Alpers, Ph.D.  
 Perry Anderson, B.A.  
 Joyce Appleby, Ph.D.  
 Robert L. Benson, Ph.D.  
 Ivan T. Berend, Ph.D.  
 Edward G. Berenson, Ph.D. (*Distinguished Teaching Award*)  
 Robert P. Brenner, Ph.D.  
 John Brewer, Ph.D.  
 Giorgio Buccellati, Ph.D.  
 Mortimer H. Chambers, Jr., Ph.D.  
 Stanley Coben, Ph.D.  
 Robert Dallek, Ph.D. (*Distinguished Teaching Award*)  
 Ellen DuBois, Ph.D.  
 Christopher Ehret, Ph.D.  
 Benjamin A. Elman, Ph.D.  
 Saul Friedlander, Ph.D. (*1939 Club Professor*)  
 Patrick Geary, Ph.D.  
 Carlo Ginzburg, Laurea in lettere (*Franklin D. Murphy Professor of Italian Renaissance Studies*)  
 Juan Gómez-Quiñones, Ph.D.  
 Thomas S. Hines, Ph.D.  
 Richard Hovannisian, Ph.D. (*Armenian Educational Foundation Professor of Modern Armenian History*)  
 Philip C. Huang, Ph.D.  
 Norris C. Hundley, Ph.D.  
 Michael O. Jones, Ph.D.  
 Nikki Keddie, Ph.D.  
 Barisa Krekić, Ph.D.  
 John H.M. Laslett, D.Phil.  
 James Lockhart, Ph.D.  
 Peter Loewenberg, Ph.D.  
 Afaf Marsot, D.Phil.  
 Ronald J. Mellor, Ph.D., *Chair*  
 Eric H. Monkonen, Ph.D.  
 Regina Morantz-Sanchez, Ph.D.  
 Gary B. Nash, Ph.D. (*Distinguished Teaching Award*)  
 Fred G. Notehelfer, Ph.D.  
 Boniface I. Obichere, D.Phil.  
 Herman Ooms, Ph.D.  
 Merrick Posnansky, Ph.D.  
 Peter H. Reill, Ph.D.  
 Richard H. Rouse, Ph.D.  
 David Sabean, Ph.D. (*Henry J. Bruman Professor of German History*)  
 Damodar R. SarDesai, Ph.D.  
 Stanford J. Shaw, Ph.D.  
 Debora L. Silverman, Ph.D.

Geoffrey W. Symcox, Ph.D.  
 Scott L. Waugh, Ph.D. (*Distinguished Teaching Award*)  
 Richard Weiss, Ph.D.  
 James W. Wilkie, Ph.D.  
 Robert Wohl, Ph.D.  
 Stanley A. Wolpert, Ph.D. (*Distinguished Teaching Award*)

### Professors Emeriti

Milton Anastos, Ph.D.  
 Amin Banani, Ph.D.  
 Kees W. Bolle, Ph.D.  
 E. Bradford Burns, Ph.D. (*Distinguished Teaching Award*)  
 Robert I. Burns, S.J., Ph.D.  
 Robert N. Burr, Ph.D.  
 John W. Caughey, Ph.D.  
 Claus-Peter Clasen, Ph.D.  
 Raymond H. Fisher, Ph.D.  
 Frank O. Gatell, Ph.D.  
 Daniel W. Howe, Ph.D.  
 Jere C. King, Ph.D.  
 Gerhart B. Ladner, Ph.D.  
 Andrew Lossky, Ph.D.  
 Lauro R. Martines, Ph.D.  
 Hans J. Rogger, Ph.D.  
 Alexander P. Saxton, Ph.D.  
 Eugen Weber, M.Litt. (*Professor Emeritus of Modern European History; Luckman Distinguished Teaching Award*)

### Associate Professors

Peter Baldwin, Ph.D.  
 Kathryn Bernhardt, Ph.D.  
 Mario Biagioli, Ph.D.  
 Ruth Bloch, Ph.D.  
 Robert G. Frank, Ph.D.  
 Robert A. Hill, M.Sc.  
 Valerie J. Matsumoto, Ph.D.  
 Michael G. Morony, Ph.D.  
 Kathryn Norberg, Ph.D.  
 Theodore Porter, Ph.D.  
 George Sanchez, Ph.D.  
 Bruce J. Schulman, Ph.D. (*Luckman Distinguished Teaching Award*)  
 Miriam Silverberg, Ph.D.  
 Sharon Traweek, Ph.D.  
 Albion M. Urdank, Ph.D.  
 Richard von Glahn, Ph.D.  
 William H. Worger, Ph.D.  
 Mary A. Yeager, Ph.D.

### Assistant Professors

Stephen Frank, Ph.D.  
 John B. Hatch, Ph.D.  
 Vinay Lal, Ph.D.  
 Muriel McClendon, Ph.D.  
 Melissa Meyer, Ph.D.  
 José Moya, Ph.D.  
 David N. Myers, Ph.D.  
 Jan Rieff, Ph.D.  
 Michael Salzman, Ph.D.  
 Brenda Stevenson, Ph.D.

### Lecturers

Ludwig Lauerhass, Ph.D.  
 Albert Hoxie, M.A., *Emeritus (Distinguished Teaching Award)*

### Adjunct Professors

Sanford M. Jacoby, Ph.D.  
 Robert C. Ritchie, Ph.D.

### Adjunct Associate Professors

S. Scott Barchy, Ph.D. (*Distinguished Teaching Award*)  
 Darryl Holter, Ph.D.  
 Yuji Ichioka, Ph.D.

## Scope and Objectives

History is the study of the past of our own society and how it emerged out of the traditions that produced it. At the same time, self-knowledge for students of history comes not only from self-discovery, but from a comparison of their own tradition and experience with those of others. It is only by studying the history of other civilizations and cultures that we can hope to gain perspective on our own.

The course offerings in history at UCLA are designed to bring about an understanding of the forces that have shaped the many cultures of this country and the world. UCLA has one of the largest, most distinguished, and most diverse history faculties in the country. Its main emphasis is on the many aspects of social history, but intellectual, cultural, and political history are also strongly represented.

Of all undergraduate majors, history is probably the most flexible and far-reaching. Leading to a Bachelor of Arts degree, it is excellent preparation for a wide variety of careers — law, teaching, business, the communications media, public services, and medicine.

The department offers graduate programs leading to the M.A. and Ph.D. and accepts qualified applicants for either or both degrees. There is also a joint master's program with the Graduate School of Library and Information Science. Traditionally, the M.A. and Ph.D. in History have led to careers in high school, college, and university teaching. Increasingly, they are also being put to use in government service, international business, museum and archival work, and journalism.

## Bachelor of Arts Degree

### Preparation for the Major and the Major

The History Department's undergraduate program consists of 16 courses in history (six lower division — the "Preparation for the Major"; 10 upper division — the "Major") and four courses in the social sciences outside the department. The following courses are required in the program:

- (1) History 1A-1B-1C.
- (2) Two courses in U.S. history.
- (3) Two courses in non-Western history from the same area (i.e., Latin America, Asia, Near and Middle East, Africa) or in science and technology. Candidates for the California Standard Instructional Credential may not choose science and technology to fulfill their non-Western requirement.
- (4) History 100A or 101.
- (5) History 197 or 199.
- (6) Four courses in the social sciences outside of history or in other related disciplines as explained below.

The requirements for U.S. and non-Western history may be met with either upper or lower division courses. Normally only six lower division courses in history need to be included in your program, so if you meet the U.S. history requirement at the lower division level, you have to meet the non-Western requirement at the upper division level (or vice versa). If you choose to meet both requirements at the lower division level, you are still required to take 10 upper division courses to fulfill upper division requirements. The department recommends the following lower division courses to meet the U.S. history and non-Western requirements: History 2, 3A, 3B, 3C, 3D, 6A, 6B, 6C, 7A, 7B, 8A, 8B, 8C, 9A, 9C, 9D, 10A, 10B, 11A, 11B. If only one non-Western course is taken in lower division, an appropriate upper division non-Western course must be included in the major.

All history majors are required to take at least four courses in other departments in the social sciences, whether lower or upper division (anthropology, geography, economics, political science, sociology, psychology). These courses may not be taken on a Passed/Not Passed basis. A one-term course from the History 6A-6B-6C sequence may be applied toward this requirement, provided the same course is not used to satisfy any other requirement of the major.

By petition, you may replace up to two social sciences courses with courses in humanities, arts, or natural sciences relevant to your program in history. Courses in communication studies do not fulfill this requirement.

Transfer students with deficiencies in lower division courses may by petition substitute appropriate upper division courses in history for the lower division requirements. See the undergraduate counselor.

There is no language requirement for the major; however, students wishing to enter the honors program or planning to do graduate work in history are urged to pursue language study early in their undergraduate careers.

**Advanced Placement Credit in History** — The College of Letters and Science allows eight quarter units toward the B.A. for each Advanced Placement Test in History. The History Department applies this credit to the "Preparation for the Major" as follows: AP European History fulfills History 1C; AP American History with a score of 4 or 5 allows eight units of History 7A-7B credit on the history preparation. The excess units may be applied only toward the degree.

## Honors Program

The honors program is designed for history majors who are interested in carrying out a year-long independent research project that culminates in an honors thesis. Special honors seminars are also offered during the junior year. A 3.5 departmental grade-point average is normally required for admission, but students with a lower GPA may apply to the honors committee for admission. Application should be made at the beginning of the junior year.

History 101H is required, as are History 199HA-199HB-199HC, which count as three of the 10 required upper division courses. Course 199HA is taken in Spring Quarter of the junior year; honors students then take courses 199HB and 199HC in Fall and Winter Quarters of their senior year under the guidance of the sponsoring professor. A prize is awarded for the outstanding honors thesis.

## Instructional Credential in History

For information on the single subject instructional credential in history, consult the Graduate School of Education, 1605 Maxxam Building (122 Moore Hall in early 1994, 310-825-8328).

## Master of Arts Degree

### Admission

For admission to graduate standing in the Department of History, you should normally have completed the undergraduate major or its equivalent, have received a Bachelor of Arts degree or its equivalent from an accredited college or university, and have maintained at least a B+ average in upper division work. You also need three letters of recommendation and the score of the General Test of the Graduate Record Examination (GRE) submitted to the department. Students not meeting the grade-point average requirements may be admitted in exceptional cases if their letters of recommendation, GRE score, or other factors indicate unusual promise. Applicants with a year or more of graduate study at other institutions should have attained a GPA of 3.5 or better if they wish to work toward the Ph.D. degree. Admission to the department depends on the number of openings in the field in which you expect to specialize. Applications should be submitted *before* December 15; notification is made on or before May 1. Except for extraordinary cases, students are expected to begin their graduate work in Fall Quarter. The department has *no separate application form* in addition to the one used by UCLA Graduate Application Processing. Departmental information is available from Sheila Patel, Graduate Adviser, Department of History, 6273 Bunche Hall, UCLA, Los Angeles, CA 90024-1473.

There is no screening examination. Nonhistory majors may be required to take specified courses, depending on their background and fields of specialization. Because applicants are admitted to pursue graduate work in a specific field, a change of fields after admission requires approval of the relevant field committee.

An annual *Guide to Graduate Study in History* which explains the requirements and procedures of the graduate program in detail is mailed to all new graduate students who have filed a Statement of Intent to Register (prior to registration). The guide lists faculty, their representative publications, and descriptions of courses offered during the year, and is available from the graduate adviser.

## Major Fields or Subdisciplines

The comprehensive examination covers one of the following fields: (1) ancient (includes ancient Near East); (2) medieval (includes Byzantine and medieval Jewish history); (3) Europe, 1550 to present (includes British history and the British Empire); (4) Africa; (5) Near East (includes Armenia); (6) India and Southeast Asia; (7) East Asia; (8) Latin America; (9) U.S.; (10) history of science; (11) special fields (students in the history of religions, Russian history, and modern Jewish history are normally examined in one of the above fields, but with consent of the faculty in these fields may petition the graduate guidance and curriculum committee for an M.A. examination in their field of specialization).

## Foreign Language Requirement

If you are contemplating graduate work in history, you should begin study of a foreign language as an undergraduate since reading knowledge of one foreign language approved by the department is required. For French, German, Russian, or Spanish, a score of 500 on the Graduate School Foreign Language Test (GSFLT) is required. Students of U.S., Near East, and African history may use departmentally administered translation examinations in French, Spanish, or German in place of the GSFLT. Students of European history must pass departmentally administered examinations in one of these three languages no later than the beginning of the sixth term of full-time study. For other languages, certification is required by the department teaching the language according to that department's standards.

## Course Requirements

The department requires a minimum (and preferably a *maximum*) of *nine* upper division and graduate courses in history, at least six of which must be graduate courses. No course in the 300 series may be applied toward this requirement, and only one in the 500 series may be applied. For students in U.S. history and European history, a minimum of seven of the nine courses must be at the 200 level. For U.S. history, these seven courses must include at least two two-term seminars and History 245. For European history, the seven courses must include two two-term seminars and course 225. Africanists must take course 275.

## Comprehensive Examination Plan

The department follows the comprehensive examination plan. Individual fields specify fulfillment of the examination requirement by (1) a three-hour written examination designed to assess your ability to synthesize a broad field of knowledge or (2) the submission of three essays written for at least two different professors as part of your program of study. At least two of these papers must have been submitted for graduate courses in the 200 series. The U.S. field requires a comprehensive examination in the form of a research paper of approximately 15,000 words, to be submitted at the end of six

terms of full-time study. The European field requires a comprehensive examination in the form of a research paper of approximately 15,000 words, to be submitted at the beginning of the sixth term of full-time study.

The medieval M.A. examination is given in May of each academic year. All other field examiners administer the M.A. comprehensive examinations in November, March, and May each year. The committee recommends the following examination results: pass to continue, pass subject to reevaluation, terminal pass, fail. In cases where the M.A. is awarded pass subject to reevaluation, the field M.A. committee reevaluates your progress after an additional three terms of study. Only in exceptional cases are oral examinations required for the M.A. degree.

## M.L.S./M.A.-History

This concurrent degree program of the Department of History and the Graduate School of Library and Information Science allows you to combine historical study with the tools of the information professional and to obtain two degrees — the M.L.S. and the M.A. in History. The best sequence of coursework should be discussed with the advisers from this department and the Graduate School of Library and Information Science.

## Ph.D. Degree

### Admission

Admission requirements for the Ph.D. program are the same as those for the M.A., but applicants for the doctorate are urged to seek an interview or to correspond with a member of the faculty in the field in which they intend to work. Students may be admitted with subject deficiencies, but such deficiencies must be removed by completing courses in addition to the requirements for an advanced degree.

While no examination is required for admission to a Ph.D. program, evaluation examinations are given to determine your continuance to the Ph.D. degree.

An annual *Guide to Graduate Study in History* which explains the requirements and procedures of the graduate program in detail is mailed to all new graduate students who have filed a Statement of Intent to Register (prior to registration). The guide lists faculty, their representative publications, and descriptions of courses offered during the year and is available from the graduate adviser.

### Major Fields or Subdisciplines

Ancient Greece; ancient Rome; medieval constitutional and legal; medieval social and economic; medieval ecclesiastical and religious; medieval intellectual and cultural (medieval history specialists may offer no more than two of these fields in medieval history); Byzantine; Russia since 862; Southeast Europe (Balkans); En-

gland prior to 1485; England, 1485-1763; England since 1763; the British Empire; ancient Near East; the Near East, 500-1500; the Near East since 1500; Armenian; survey of African history; topics in African history (preferably on a regional basis); history of science to 1600; history of science since 1600; Europe, Renaissance/Reformation; Europe, Renaissance to the French Revolution; Europe since 1740; European socioeconomic history; European intellectual and cultural history; psychohistory; China, 900-1800; China since 1800; modern Japan; South Asia; Southeast Asia; Latin America, 1492-1830; Latin America since 1759; history of religions; Jewish history; history of Christianity; comparative history; U.S.: (1) mastery of the general field of U.S. history sufficient to teach a college-level survey course and (2) a specialized field selected from the following: Afro-American, American diplomatic, American West, American Indian, California, history of the South, Civil War and Reconstruction, Colonial, cultural, economic, immigration, intellectual, Jeffersonian and Jacksonian American (1800-1850), labor, Mexican-American, social, the new nation (1763-1800), 20th century, urban, women's history. Both the general and a specialized field must be offered by specialists in U.S. history, and only two fields in U.S. history are permitted. Either field 1 or 2 or both may be selected as minor fields for the Ph.D.

Candidates offering a field in comparative history as a fourth field for the Ph.D. degree should select a topic for comparison which would usually coincide with time-area spans of the other three fields defined for the Ph.D. qualifying examinations.

Candidates in the history of science program must select three of the above fields and either the history of medicine or an allied field.

All candidates may offer for examination an approved allied field outside the Department of History.

### Foreign Language Requirement

Foreign language requirements vary according to the major field, although reading knowledge of the prescribed language(s) (one for U.S. history students, at least two for all others) is required. For details, consult the *Program Requirements for UCLA Graduate Degrees, 1993-94: Department of History* or your graduate adviser.

### Course Requirements

You must meet (1) the special requirements for admission listed above and (2) the general requirements set forth under the Graduate Division. A program, extending over the full time of study, must be approved by the department. You are required to complete at least one continuing two- or three-term seminar or, alternatively, a continuing sequence of at least two graduate courses approved by the graduate guidance and curriculum committee, which results in a substantial research paper based at least in part on primary sources. If this require-

ment is met entirely or in part by a sequence of directed study courses (History 596), you must take the course(s) for a letter grade. Students in U.S. history should complete course 245. Students in European history must complete course 225, and students in African history must complete course 275 unless exempt by special petition. Courses taken to fulfill M.A. degree requirements may also be used to satisfy Ph.D. requirements.

### Teaching Experience

The department cannot provide teaching experience for all Ph.D. candidates and cannot therefore require it for the degree. You should, however, be able to demonstrate ability to give instruction in your field.

### Qualifying Examinations

Full-time graduate students must schedule the written qualifying examination by the end of the ninth term of graduate work. The written examination includes the major field only, is normally prepared and administered by the chair of your doctoral committee, and is read by the entire committee before you take the oral qualifying examination. The members of the doctoral committee determine whether or not an examination may be repeated (normally only once).

The written examination must be passed and a dissertation prospectus (approved by the doctoral committee chair) must be written before taking the University Oral Qualifying Examination. In the oral examination you are examined in four fields, one of which may be an approved allied field. You should select fields in consultation with your faculty sponsor and must receive the department's approval of all four fields. If you fail the oral qualifying examination, you may repeat it once (normally within a period of six months) with the consent of the doctoral committee.

After passing the oral qualifying examination, you are advanced to candidacy and may begin work on the dissertation.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Final Oral Examination

If required by the qualifying examination committee, a final oral examination is conducted after completion of the dissertation to cover the field within which the dissertation falls. After approving a dissertation, the chair of the doctoral committee may, with the unanimous consent of the entire committee, recommend a waiver of the final oral examination.

## Lower Division Courses

### 1A-1B-1C. Introduction to Western Civilization.

Lecture, two hours; discussion, two hours. Broad, historical study of major elements in Western heritage from the world of the Greeks to that of the 20th century, designed to further beginning students' general education, introduce them to ideas, attitudes, and institutions basic to Western civilization, and acquaint them, through reading and critical discussion, with representative contemporary documents and writings of enduring interest. **1A.** Ancient Civilizations from Prehistory to ca. A.D. 843; **1B.** Circa A.D. 843 to ca. 1715; **1C.** Circa 1715 to the Present.

**1AH-1BH-1CH. Introduction to Western Civilization (Honors).** Lecture, two hours; discussion, two hours. Honors sequence parallel to courses 1A-1B-1C.

**2. History of Technology from Antiquity to the 20th Century.** Lecture, three hours. Designed for students in natural sciences, social sciences, and the arts. Survey of development of man's ability to understand more fully and to utilize more efficiently the natural environment, stressing technology's changing social, economic, scientific, and cultural relationships.

**3A-3B-3C. Introduction to History of Science.** Lecture, three hours; discussion, two hours. History majors may not apply these courses on science general education requirements:

**3A.** Scientific Revolution. Survey of the beginnings of physical sciences involving transformation from Aristotelian to Newtonian cosmology, mechanization of the natural world, rise of experimental science, and origin of scientific societies.

**3B.** Physical Sciences since the Enlightenment. Broad survey of development of ideas in classical and modern physical science since Newton. Theories of matter, but more specifically chemistry, thermodynamics, electromagnetic theory of light, energy conservation, relativity, and quantum mechanics.

**3C.** Biological Sciences, 1800-1955. Survey of development of biological sciences from the period of Bichat and Müller to discovery of the double helix.

Mr. Frank

**3D. Themes in History of Medicine.** Lecture, three hours. Prerequisite: sophomore standing. Limited to 30 students. Examination, through illustrated lectures and focused discussion of primary sources, of five important themes in development of modern medicine: nature of diagnosis, emergence of surgery, epidemics, conception and treatment of insanity, and use of medical technology.

Mr. Frank

**4. Introduction to History of Religions.** Lecture, three hours; discussion, two hours. Discussion of various systems, ideas, and fashions of thought that have dominated Western approaches to religions of the world since antiquity. Survey of development from classical Greek and early Christian theories to modern history with its discoveries of the religions of India, China, ancient Near East, etc., and the problem of the encounter of various religions in the 19th and 20th centuries.

**5A-5B. Survey of British History.** Lecture, three hours; discussion, two hours. Designed for students wanting general orientation to British history and those in English literature and prelaw. Survey of history of England and (after the union between England and Scotland) Great Britain. **5A.** Middle Ages to the Glorious Revolution in 1688; **5B.** 1688 to the 20th Century.

Ms. McClendon, Mr. Urdank, Mr. Waugh

**6A-6B-6C. History of the American Peoples.** Lecture, two hours; discussion, two hours. Survey of the American peoples from advent of aboriginal society to the present, emphasizing racial and ethnic interaction, industrialization, urbanization, and cultural change. **6A.** To 1800; **6B.** 1800 to 1900; **6C.** 1900 to the Present.

Ms. Appleby, Ms. Meyer, Mr. Nash

**6BH. History of the American Peoples (Honors).** Lecture, two hours; discussion, two hours. Survey of the American peoples from advent of aboriginal society to the present, emphasizing racial and ethnic interaction, industrialization, urbanization, and cultural change.

Mr. Monkkonen

**7A-7B. Survey of Political History of the U.S.** Lecture, two hours; discussion, two hours. This sequence (or two terms of course 6) strongly recommended for history majors planning to take more advanced courses in U.S. history. Designed for students in social sciences and other departments who desire thorough grounding in American political culture. Survey of history of the U.S. from the Revolutionary era to the present. Emphasis on political developments and social, cultural, and economic bases of American politics. **7A.** To 1877; **7B.** 1877 to the Present.

Ms. Appleby, Mr. Gatell, Mr. Howe

**8A. Culture, Ethnicity, and Gender in Early Latin America.** Lecture, three hours; discussion, two hours. General introduction to Latin American history from conquest to independence, with emphasis on role of ethnicity and gender in the emerging society and culture.

Mr. Lockhart

**8B. Latin America: Reform and Revolution.** (Formerly numbered 8A.) Lecture, three hours; discussion, two hours. General introduction to Latin America, emphasizing those institutions from the past which have shaped the present and the struggle for change in the 20th century.

Mr. E.B. Burns, Mr. Moya

**8C. Latin American Social History.** (Formerly numbered 8B.) Lecture, three hours; discussion, two hours. Historical and contemporary perspective of role of ordinary people in Latin American society. Each lecture/film session centers on a major Latin American movie illustrative of a theme in social history.

Mr. E.B. Burns, Mr. Moya

**8CH. Latin American Social History (Honors).** Lecture, three hours; discussion, two hours. Honors course parallel to course 8C.

Mr. E.B. Burns, Mr. Moya

**9A-9D. Introduction to Asian Civilizations.** Lecture, three hours; discussion, two hours:

**9A.** History of India. Introductory survey for beginning students of major cultural, social, and political ideas, traditions, and institutions of Indic civilization.

Mr. Lal, Mr. Wolpert

**9C.** History of Japan. Survey of Japanese history from earliest recorded time to the present, with emphasis on development of Japan as a cultural daughter of China. Attention to manner in which Chinese culture was Japanized and aspects of Japanese civilization which became unique. Creation of the modern state in the last century and impact of Western civilization on Japanese culture.

Mr. Notehelfer, Ms. Silverberg

**9CH.** History of Japan (Honors). Honors course parallel to course 9C.

Mr. Notehelfer

**9D.** History of the Near and Middle East. Introduction to history of the Muslim world from advent of Islam to the present day.

Ms. Marsot

**10A-10B. Introduction to Civilizations of Africa.** Lecture, three hours; discussion, two hours. Intended for students with general interest in Africa, but also strongly recommended for those intending to take upper division courses in African history. Exploration of African cultures on a thematic basis within a wider framework of political change over time.

Mr. Ehret, Mr. Posnansky

**10BH. Introduction to Civilizations of Africa (Honors).** Lecture, three hours; discussion, two hours. Honors course parallel to course 10B.

Mr. Worgler

**11A-11B. History of China.** Lecture, three hours; discussion, two hours:

**11A.** To 1000. Survey of early history of China — genesis of characteristic Chinese institutions and modes of thought from antiquity to 1000. Focus on social, political, intellectual, and economic aspects of early and middle empires.

Mr. Elman, Mr. von Glahn

**11B.** 1000 to 1950. Survey of later history of China — evolution of characteristic Chinese institutions and modes of thought from 1000 to 1950. Focus on social, political, intellectual, and economic aspects of late empires and rise of modern China in the contemporary era.

Ms. Bernhardt, Mr. Elman, Mr. von Glahn

**11AH-11BH. History of China (Honors).** Lecture, three hours; discussion, two hours. Honors sequence parallel to courses 11A-11B.

Mr. Elman, Mr. von Glahn

**M70. Survey of Medieval Greek Culture.** (Same as Classics M70.) Lecture, three to four hours. Classical roots and medieval manifestation of Byzantine civilization: political theory, Roman law, pagan critique of Christianity, literature, theology, and contribution to the Renaissance (including discovery of America).

Mr. Dycx

**88A-88U. Lower Division Seminars (5 units each).** Seminar, three hours. Prerequisite: freshman or sophomore standing. Limited to 15 students. Open to non-history majors. Readings, discussions, papers. Sign-ups and descriptions of offerings each term are available in undergraduate counselor's office (6248 Bunche Hall). Ten units may be taken for credit. **88A.** Ancient Greece; **88B.** Ancient Rome; **88C.** Medieval; **88D.** Early Modern Europe; **88E.** Modern Europe; **88F.** Russia/Eastern Europe; **88G.** Britain; **88H.** U.S.; **88I.** Latin America; **88J.** Near East; **88K.** India; **88L.** China; **88M.** Japan; **88N.** Africa; **88O.** Science/Technology; **88P.** History of Religions; **88Q.** Theory of History; **88R.** Jewish History; **88S.** Armenia and the Caucasus; **88T.** Southeast Asia; **88U.** Psychohistory.

**97H. Three Trials.** Discussion, three hours. Prerequisite: consent of instructor. Limited to 20 students. Intensive study of three trials, each of which led to the execution of the accused: Socrates, Jesus of Nazareth, and Joan of Arc. View of each trial as a conflict between legitimate but irreconcilable interests and world views. For each, class constitutes itself as a court (prosecution, defense, jury) and reviews the verdict of original trial.

Mr. Benson

## Upper Division Courses

Prerequisite for all upper division courses is upper division standing or consent of instructor, unless otherwise stated. Certain graduate courses (200 series) are open to students with upper division standing and consent of instructor.

**100A. History and Historians.** (Formerly numbered 100.) Lecture, three hours. Study of historiography, including intellectual processes by which history is written, results of these processes, and sources and development of history. Attention also to representative historians.

Mr. Baldwin, Mr. Ooms, Mr. Reill

**100B. History and Contemporary Theory.** Lecture, three hours. Survey of main sources and trends of contemporary theory, from Saussure's linguistics to recent feminist theories, in texts that inform much of the most recent historiographical directions and debate.

Mr. Biagioli, Mr. Ooms

**101. Introduction to Historical Practice.** Seminar, three hours. Limited to juniors and seniors. Discussion classes of no more than 15 students meeting with a faculty member. Exploration of how works of history are written, with emphasis on problems of historiography and method.

**101H. Introduction to Historical Practice (Honors).** Seminar, three hours. Limited to juniors and seniors in history honors program. Discussion classes of no more than 15 students meeting with a faculty member. Emphasis on problems in philosophy of history, historiography, and historical method.

**102. Explorations in Psychoanalysis and History.** Lecture, three hours. Art of psychological and historical interpretation; assessment of recent writings in the field of psychohistory.

Mr. Loewenberg, Mr. Wohl

**M103. Historical Archaeology.** (Same as Anthropology M115S.) Survey of aims and methods of historical archaeology as practiced on both sides of the Atlantic, with case studies from North America, the Caribbean, Africa, and Europe.

Mr. Posnansky

**M104A-M104B. Ancient Egyptian Civilization.** (Same as Ancient Near East M104A-M104B.) Lecture, three hours. Course M104A is not prerequisite to M104B. Political and cultural institutions of ancient Egypt and ideas on which they were based. **M104A.** Chronological discussion of Prehistory, the Old and Middle Kingdom. **M104B.** The New Kingdom and the Late period until 332 B.C. (Alternate years)

**M105. History of Ancient Mesopotamia and Syria.** (Formerly numbered 105.) (Same as Ancient Near East M105.) Lecture, three hours. Political and cultural development of the "Fertile Crescent," including Palestine, from the Neolithic to the Achaemenid period. Mr. Buccellati

**106A-106B-106C. Survey of the Middle East from 500 to the Present.** Lecture, three hours. Background and circumstances of rise of Islam, creation of the Islamic Empire, and its development. Rise of Dynastic Successor States and the Modern Nation States. Social, intellectual, political, and economic development:

**106A.** 500 to 1300. Mr. Morony

**106B.** 1300 to 1700. Ms. Marsot

**106C.** 1700 to the Present. Ms. Keddie

**107A-107B. Islamic Civilization.** Lecture, three hours:

**107A.** Premodern Islam. Origins of Islamic civilization, Muhammad and the Qur'an; development of Islamic doctrine, ritual, piety and law, sectarian Islam, and mysticism. Mr. Morony

**107B.** Islam in the Modern World. Reform movements, legal issues, sociopolitical trends, movements of opposition. Ms. Keddie, Ms. Marsot

**108A-108B. History of the Arabs.** Lecture, three hours. Course 108A is prerequisite to 108B. Political, social, intellectual, and economic history of the Arabs from the 18th century to the present. Ms. Marsot

**109A-109B. History of North Africa from the Moslem Conquest.** Lecture, three hours:

**109A.** To 1578. Mr. Morony

**109B.** 1578 to the Present. Ms. Marsot

**110A-110B. Iranian History.** Lecture, three hours. Political, social, and cultural history of Persia:

**110A.** Islamic Iran to 1800.

**110B.** Iran from 1800 to the Present. Ms. Keddie

**111A-111B. History of the Turks.** Lecture, three hours. Survey of society, government, and political history of the Turks from earliest times to the present:

**111A.** Origins to 1808. Turkish origins, early Central Asian and Middle Eastern states. Rise and fall of the Ottoman Empire. Mr. Shaw

**111B.** 1808 to the Present. Modernization of the Ottoman Empire, 1808-1923. The Turkish Republic. The Turks in the world. Mr. Shaw

**111C. History of Jews in the Ottoman Empire and the Turkish Republic, 1300-1923.** Lecture, three hours. Preliminary introduction to the Jews in Byzantium and the Islamic world before the Ottoman conquest, followed by discussion of Jewish communities and Judaism in Southwestern Europe, Anatolia, and the Middle East while they were under Ottoman rule (1300-1923) and in the Turkish Republic since 1923. P/NP or letter grading. Mr. Shaw

**112A-112B-112C. Armenian History.** Lecture, three hours:

**112A.** Armenia in Ancient and Medieval Times, 2nd Millennium B.C. to A.D. 11th Century. Mr. Hovannisian

**112B.** Armenia from the Cilician Kingdom through the Periods of Foreign Domination and National Stirrings, 11th to 19th Centuries. Mr. Hovannisian

**112C.** Armenia in Modern and Contemporary Times, 19th and 20th Centuries. The Armenian question and genocide, national republic, Soviet Armenia, and the dispersion. Mr. Hovannisian

**C112D. Introduction to Armenian Oral History.** Lecture/discussion, three hours. Uses and techniques of Armenian oral history; preinterview, interview, and postinterview procedures; methods of compilation and evaluation. Field assignments and interviews. May be concurrently scheduled with course C212.

Mr. Hovannisian

**113. The Caucasus under Russian and Soviet Rule.** Lecture, three hours. Survey of political, economic, social, and cultural history of the Caucasus region since 1801. Georgian, Armenian, and Azerbaijani response to Russian and Soviet rule; the nationality question and the Soviet national republics. Mr. Hovannisian

**115A-115B-115C. History of Ancient Mediterranean World.** Lecture, three hours:

**115A.** Survey of history of the ancient East from earliest times to foundation of the Persian Empire. Mr. Mellor

**115B.** History and institutions of the Greeks from their arrival to the death of Alexander. Mr. Chambers, Mr. Mellor

**115C.** History and institutions of Rome from founding of the city to the death of Constantine. Mr. Chambers, Mr. Mellor

**116A-116B. History of Ancient Greece.** Lecture, three hours. **116A.** Rise of the Greek City-State. Emphasis on archaic period and early classical age through the Persian Wars. **116B.** Classical Period. Clash between Athens and Sparta, consequent rise of Macedonia, and aftermath of Alexander the Great. Mr. Chambers

**117A-117B. History of Rome.** Lecture, three hours. **117A.** To Death of Caesar. Emphasis on development of imperialism and on constitutional and social struggles of the late republic. **117B.** From Death of Caesar to the Time of Constantine. The early empire treated in more detail, supplemented by survey of social and economic changes in the 3rd century. Mr. Mellor

**118. Introduction to Roman Law.** Lecture, three hours. Survey of public (constitutional), criminal, and private law of the Romans. Topics include social context of Roman law, historical evolution of Roman law, mechanisms and procedures by which the law was administered, and content of private law. Mr. Mellor

**119. The Christian Church, 100-1517.** Lecture, three hours. Constitutional, political, and economic history of the Church; Christianization of Roman Empire and Germanic kingdoms; governance and institutions of the Church; relations between Church and monarchy; the high tide of papalism; crises of authority on eve of the Reformation. Mr. Benson

**120. The Christian Religion, 100-1350.** Lecture, three hours. Religious experience of Christians — conversion, doctrine, belief, heresy, spirituality, worship, liturgy, and art. Religious life of lay Christians, as well as that of the Church's institutional, intellectual, and spiritual leaders. Mr. Benson

**121A-121B. Medieval Europe.** Lecture, three hours; discussion, one hour. Basic introduction to Western Europe from Latin antiquity to the age of discovery, with emphasis on medieval use of Greco-Roman antiquity, history of the manuscript book, and growth of literacy. **121A.** 400 to 1000; **121B.** 1000 to 1500. Mr. Geary, Mr. Rouse

**121C. Medieval Civilization: Mediterranean Heartlands.** Lecture, three hours. Survey of Western Mediterranean Europe, social/economic/cultural within a political framework, including its relation with other cultures.

**121D. Medieval People: The 13th Century.** Lecture, three hours. Movements and creative contributions to Western culture in this central century of the Middle Ages, as seen in its representative men and works.

**M122. Power and Imagination in Byzantium.** (Same as Classics M170.) Lecture, three hours. Prerequisites: courses M70 or 123A-123B. Study of relations of authority and the intelligentsia in the highly centralized Byzantine Empire. Topics include criticism of the emperor, iconoclasm, intellectual freedom, attempts at reform. Mr. Dyck

**123A-123B. Byzantine History.** Lecture, three hours. Political, socioeconomic, religious, and cultural continuity in the millennial history of Byzantium. Reforms of Diocletian. Byzantium's relations with Latin Europe, Slavs, Sassanids, Arabs, and Turks.

**124A-124B. East-Central Europe.** Lecture, three hours. **124A.** The Long 19th Century, 1780-1914. Analysis of characteristics of peripheral 19th-century capitalism, effort to modernize and catch up, and factors and consequences of its partial failure in the economy, politics, and culture. **124B.** The Short 20th Century, 1918-1990. Analysis and interpretation of stormy history of crisis zone of Europe where wars, revolts and revolutions, different types of extremisms led to a historical detour: 70 years of departure from Western values and at last an effort to turn back to them. Mr. Berend

**125A-125F. History of Modern Europe.** Lecture, three hours:

**125A.** Renaissance: Power and Culture in the Italian City-States. Mr. Ginzburg

**125B.** Reformation: Church and Religion in the Early 16th Century. Revolutionary tendencies in German society. The peasant uprising. Theology and political thought of Erasmus, Luther, Zwingli, Calvin, and the Anabaptists. The new churches. Effects of the Reformation on society.

**125C.** Absolutism and Enlightenment: Europe under the Old Regime. State, society, and culture in Europe from the mid-17th century until eve of the French Revolution. Mr. Anderson

**125D.** Europe, 1789-1900. The French Revolution and Napoleon. The Industrial Revolution. Uprisings of 1848. Unification of Germany and Italy. Industrialization and imperialism. Rise of socialism. Population growth and changes in social structure. Mr. Berenson, Mr. Reill, Ms. Silverman

**125E.** Europe, 1870-1939. Liberalism and its adversaries. Imperialism and the coming of the First World War. The Great War and its impacts. Bolshevik Revolution, Italian Fascism, and the Nazi dictatorship. German drive for hegemony in Europe and response of the democracies. Mr. Loewenberg, Mr. Wohl

**125F.** Europe, 1939 to the Present. The Second World War and its legacy. Collaboration and resistance during World War II. Breakup of the Grand Alliance, Eastern European revolution, and restructuring of Western Europe. Trauma of decolonization. De-Stalinization and its limits. European integration, the new society, and political configurations of contemporary Europe. Mr. Wohl

**126A-126E. Cultural and Intellectual History of Modern Europe.** Lecture, three hours. Climates of taste and climates of opinion. Educational, moral, and religious attitudes; art, thought, and manners of the time in historical context:

**126A.** 16th Century.

**126B.** 17th Century. Mr. Anderson

**126C.** 18th Century. Mr. Reill

**126D.** 19th Century. Mr. Loewenberg, Ms. Silverman, Mr. Weber

**126E.** 20th Century. Mr. Loewenberg, Mr. Weber, Mr. Wohl

**127A-127B. War and Diplomacy in Europe.** Lecture, three hours:

**127A.** 1650 to 1815. Survey of military and diplomatic history, seen in relation to social and economic developments and growth of the state. Mr. Symcox

**127B.** 1815 to 1945. Balance of power; growth of the nation state; imperial and colonial rivalries; the two World Wars. Mr. Shaw, Mr. Symcox

**128A-128C. History of France.** Lecture, three hours: **128A.** France, 1500-1715. Social history of 16th- and 17th-century France, including growth of monarchy, wars of religion, peasant uprisings, popular culture, Catholic resurgence, Louis XIV and achievements in arts and literature. Ms. Norberg

**128B.** France, 1715-1871. "Ancien Régime" and the time of revolutions. Critical discourse leading to the French Revolution, collapse of the state, Napoleonic era, reconstruction of society through the monarchies and revolutions of the 19th century.

Mr. Berenson, Ms. Silverman

**128C.** The Making of Modern France, 1871 to the Present. From oligarchy to democratic bureaucracy in two wars and three republics.

Mr. Weber

**129A-129D.** History of Modern Germany, Austria, and Switzerland. (Formerly numbered 129A-129B-129C.) Lecture, three hours:

**129A.** 1500 to 1648. Political structure of empire and territories, economy, social classes, daily life, book publishing and universities, Reformation and Counter Reformation, Thirty Years' War, military entrepreneurship, population losses, the Peace of Westphalia.

**129B.** 1648 to 1820. Survey of social, economic, cultural, and political history, including rise of absolutist and bureaucratic government, Enlightenment and reform, emergence of Austro-Prussian dualism, transformation of the German economy, impact of the French Revolution and German reform movement, Restoration and Metternichian reaction.

Mr. Reil

**129C.** 19th Century. Wars of Liberation, Congress of Vienna, rise of Romanticism, causes and failure of the Revolutions of 1848. Prussian constitutional struggle, German unification, Bismarckian and Wilhelmian eras in Germany and Ausgleich in Austria, liberalism, industrialism, anti-Semitism, social democracy.

Mr. Baldwin

**129D.** 20th Century. Hohenzollern and Habsburg Empires, nationalities question, electoral reform, World War I, revolutions, republics, inflation, Fascism and Nazism, World War II, occupation, and Austrian and German Federal Republic, German Democratic Republics, and Swiss Confederation.

Mr. Baldwin, Mr. Loewenberg, Mr. Sabean

**130A-130B-130C.** Europe in the Age of Revolution, 1750-1850. Lecture, three hours:

**130A.** End of the Old Regime. Economic development from ca. 1750. The agrarian revolution. The Enlightenment: social criticism and political economy. Intellectual origins of the French Revolution. New sensibility: rococo, neoclassicism, proto-Romanticism. First signs of discontent: Geneva, Corsica, Poland. American war of independence and its effect on the European state-system; its intellectual effects.

Mr. Symcox

**130B.** Crisis of the Old Regime and the Revolution. The revolution in France, 1787-1799. Spread of revolution to other parts of Europe and varying responses. Impact of war on revolutionary France after 1792 and spread of the revolution by military force. Jacobinism in France and outside. Parallel movements abroad (e.g., Ireland, Haiti, Poland). Satellite regimes set up in Europe.

Mr. Symcox

**130C.** Napoleonic Europe and the Restoration. Napoleon's ascendancy in France from 1799: internal effects. Restructuring of Europe under Napoleon and nationalist reactions. Industrial and political change in Britain: Anglo-French world rivalry to 1815. The restoration: what could be restored and what could not. Rising national consciousness against Metternich's system. Continuing revolutionary tradition: 1821, 1830, 1848. Romanticism at its apogee. Conclusion: how world of 1850 differed from that of 1750.

Mr. Symcox

**131A-131D.** History of Russia. Lecture, three hours:

**131A.** From the Origins to the Rise of Muscovy. Kievan Russia and its culture. Appanage principalities and towns; the Mongol invasion; unification of the Russian state by Muscovy. Autocracy and its Servitors; serfdom.

Mr. Krekic

**131B.** Imperial Russia from Peter the Great to Nicholas II. Westernization of state and society; centralization at home and expansion abroad; peasant problem; beginnings of industrialization; movements of political and social protest; non-Russian peoples; political reforms and social changes; Revolution of 1905; Russia in World War I; fall of the old regime.

Mr. Frank

**131C.** Revolutionary Russia and the Soviet Union. The Revolutions of 1917, Civil War, consolidation of the Bolshevik Regime; succession crisis and ascendancy of Stalin, collectivization and industrialization; foreign policy and World War II; death of Stalin, de-Stalinization, developments since; stagnation or stability?

Mr. Hatch

**131D.** Intellectual History. Prerequisite: course 131B or Russian 99A or 119 or consent of instructor. Social thought and movements in modern Russia, late 18th to early 20th century.

Mr. Frank, Mr. Hatch

**132A-132B.** History of Italy. Lecture, three hours:

**132A.** 1559 to 1848. Counter-Reformation and absolutism, Enlightenment reforms, revolutionary era, and first phase of the Risorgimento.

Mr. Ginzburg, Mr. Symcox

**132B.** 1848 to the Present. Political, economic, social, diplomatic, and ideological developments.

Mr. Wohl

**133A-133B.** Social History of Spain and Portugal. Lecture, three hours:

**133A.** Age of Silver in Spain and Portugal, 1479-1789. Development of popular history in the Iberian Peninsula. Emphasis on peasants and urban history, gold routes, slave trade, history of women, and development of different types of collective violence.

**133B.** Rebellion and Revolution in Modern Spain and Portugal, 1789 to the Present. Spain's position in Europe and its potentialities for social change discussed through investigations of urban history, agrarian social structure, history of women, problems of slow industrial development, imperialism, anarchism, and labor history.

**134A.** Southeastern Europe, 500-1500. Lecture, three hours. Political, economic, and cultural survey of the independent Balkan states in the Middle Ages.

Mr. Krekic

**134B.** Southeastern Europe, 1500-1918. Lecture, three hours. The Balkans under Ottoman rule, movements of national liberation, and formation of nation states.

Mr. Krekic

**135A-135B.** Marxist Theory and History. Lecture, three hours. Course 135A is generally prerequisite to 135B. Introduction to Marxist philosophy and method; conception of historical stages; competing Marxist analyses of transition from feudalism to capitalist economy via reading *Capital*; theory of politics and state in relationship to historical interpretation of 19th-century European revolutions; capitalist crises.

Mr. Brenner

**136A-136Z.** Topics in European History. Lecture, three hours; discussion, one hour. Integrated introduction to important aspects of European history, with emphasis on a specific topic within a broad framework:

**136A.** Social Movements.

**136B.** Peasants and Agrarian Society.

Mr. Brenner

**136C.** Urban Society.

Mr. Symcox

**136F.** The Family. Social history of the family in Western Europe since the Middle Ages. Household and family organization of peasants, artisans, and aristocrats; kinship, child-rearing, parental authority, marriage and inheritance systems; attitudes toward love, sex, and children.

Mr. Urdank

**136G.** Psychohistory. Mr. Loewenberg, Mr. Wohl

**136I.** Special Topics. May be repeated once for credit.

**137A-137B-137C.** History of Women in Europe. Lecture, three hours:

**137A.** Prehistory to 1348. History of women in ancient Greece, Rome, and the Middle Ages. Topics include women in Greek mythology and life, Roman Empire, Christianity, convents, courtly love.

Ms. Norberg

**137B.** 1348 to 1814. History of women from the Renaissance to the end of the French Revolution. Topics include women of Renaissance Italy, women in the Protestant and Catholic Reformations, witchcraft, and the Enlightenment and French Revolution.

Ms. Norberg

**137C.** 1814 to the Present. Topics include Victorian women; purity movements; suffrage; role of women in World War I, Russian Revolution, and the Nazi State; "second" feminism.

Ms. Norberg

**138A-138B.** Topics in Medieval English History. Lecture, three hours. Topics include the village community and economy, family and landholding, Church and society, war, politics, and feudal relations.

Mr. Rouse, Mr. Waugh

**139.** Renaissance England. Lecture, three hours. Culture and society. Emphasis on literary culture (Elizabethans, Jacobean, Carolines), with readings and lectures on different aspects of political and economic life as required for serious understanding of the culture.

Ms. McClendon

**141A-141B-141C.** History of Britain. Lecture, three hours. Analysis of British economy, society, and polity, focusing on dynamics of both stability and change:

**141A.** Tudor-Stuart Times, 1485-1660.

Mr. Brenner, Ms. McClendon

**141B.** Early Modern Times, 1660-1832.

Mr. Anderson, Mr. Brenner, Mr. Brewer

**141C.** Modern Britain since 1832. Mr. Urdank

**142A-142B.** British Empire since 1783. Lecture, three hours. Political and economic development of the British Empire, including evolution of colonial nationalism, development of the commonwealth idea, and changes in British colonial policy.

Mr. SarDesai

**143.** History of Canada. Lecture, three hours. Survey of growth of Canada into a modern state from its beginnings under the French and British colonial empires.

**144.** History of Australasia. Lecture, three hours. History of Australia and New Zealand from the European settlement, with emphasis on interrelationships between settlers and aborigines; comparisons and contrasts between the Australian and New Zealand experience.

**145A.** Colonial America, 1600-1763. Lecture, three hours. Examination of the molding of an American society in English North America from 1600 to 1763. Emphasis on interaction of three converging cultures: Western European, West African, and American Indian.

Ms. Appleby, Ms. Bloch, Mr. Nash

**145B.** Revolutionary America, 1760-1800. Lecture, three hours. Inquiry into origins and consequences of the American Revolution, nature of the revolutionary process, creation of a constitutional national government, and development of a capitalist economy.

Ms. Appleby, Ms. Bloch, Mr. Nash

**146A-146B.** U.S., 1800-1850. Lecture, three hours:

**146A.** Jeffersonian America. Jeffersonian Republican ascendancy and Era of Good Feelings, 1800-1828; disintegration of Federalist opposition; testing of American nationality in the second war with Britain; beginnings of transportation and industrial revolutions; restructuring of politics in an increasingly egalitarian age.

**146B.** Jacksonian America and Beyond. "Jacksonian Revolution" and its aftermath, 1829-1850; problem of national power versus state sovereignty; problems of rapid social change through industrialization and urbanization; reform impulse; antislavery movements; territorial expansion as focus for sectional rivalry.

**147A.** U.S., Civil War and Reconstruction. Lecture, three hours. Rise of sectionalism, antislavery crusade; formation of the Confederate States; war years; political and social reconstruction.

Ms. Stevenson

**147B.** U.S., 1875-1900. Lecture, three hours. American political, social, and institutional history in a period of great change. Emphasis on the altering concepts of role of government and responses to that alteration.

Mr. Salman

**147C.** American South, 1877 to the Present. Lecture, three hours. Analysis of political, economic, social, intellectual, and cultural history of the South from cotton belt to Sunbelt. Topics include origins of segregation, sharecropping, Southern politics, Southern culture, and civil rights movement.

Mr. Schulman

**148A-148B. U.S., 20th Century.** Lecture, three hours; discussion, one hour. Political, economic, intellectual, and cultural aspects of American democracy. **148A.** 1900 to 1928; **148B.** 1929 to 1945.

Mr. Coben, Mr. Schulman, Mr. Weiss

**148C. U.S. since 1945.** Lecture, three hours; discussion, one hour. History of political, social, and diplomatic developments that have shaped the U.S. since 1945.

Mr. Dallek, Ms. Matsumoto,  
Mr. Schulman, Mr. Weiss

**149A-149B. American Economic History.** Lecture, three hours; discussion, one hour:

**149A.** 1790 to 1910. Roles of economic forces, institutions, individuals, and groups in promoting or impeding effective change in the American economy, 1790-1910. During this period the technical skeleton of the modern industrial structure was formed. Why and how American economy evolved into a dual economy, characterized by a center of firms large in size and influence and a periphery of smaller firms.

Ms. Yeager

**149B.** 1910 to the Present. Dynamics of change in the dual economy, focusing in greater detail on interrelationships between macro and micro developments in the economy and on the growing interdependency between the U.S. and world economy, 1910 to the present.

Ms. Yeager

**150A-150B. Intellectual History of the U.S.** Lecture, three hours. Principal ideas about humanity and God, nature and society, which have been at work in American history. Sources of these ideas, their connections with one another, their relationship to American life, and their expression in great documents of American thought.

**150C. History of Religion in the U.S.** Lecture, three hours. Consideration of the religious dimension of people's experience in the U.S. Examination of a number of religious traditions which have been important in this country, with emphasis on relating developments in religion to other aspects of American culture.

**151A-151B. Constitutional History of the U.S.** Lecture, three hours:

**151A.** Origins and Development of Constitutionalism in the U.S. Particular emphasis on framing of the Federal Constitution in 1787 and its subsequent interpretation. Judicial review, significance of the Marshall Court, and effects of slavery and the Civil War on the Constitution.

**151B.** Constitutionalism since the Civil War. Particular emphasis on development of the Supreme Court, due process revolution, the Court and political questions, and the fact of judicial supremacy within self-prescribed limits.

**152A-152B. American Diplomatic History.** Lecture, three hours. **152A.** Establishment of an independent foreign policy, territorial expansion of the U.S., and emergence of a world power. **152B.** Role of the U.S. in the 20th-Century World.

Mr. Dallek

**152BH. American Diplomatic History (Honors).** Lecture, three hours; discussion, one hour. Role of the U.S. in the 20th-century world.

Mr. Dallek

**M153. The U.S. and the Philippines.** (Formerly numbered 153.) (Same as Asian American Studies M196A.) Lecture, three hours. Prerequisite: sophomore standing. Recommended: knowledge of Southeast Asian or U.S. history, or both. Examination of interrelationships of immigration and of colonialism and independence between the U.S. and the Philippines, focused mainly within the time period from 1898 to the present.

Mr. Salman

**154A-154B. U.S. Urban History.** Lecture, three hours:

**154A.** U.S. Cities: Overview. Demographic, geographic, political, economic, and social development of U.S. cities in relation to broad trends in U.S. history as well as to their own more special histories. Emphasis on mastery of facts and chronology, and awareness of major theoretical issues and fundamental concepts in urban history.

Mr. Monkkonen

**154B.** Topics in U.S. Urban History. Prerequisite: course 154A. Exploration of one aspect of U.S. urban history in depth without having to attend to basic chronology or geography. Topics include crime and police, urban economics, and urban government. Students do primary research papers based on local materials in addition to written examinations.

Mr. Monkkonen

**154C-154D. History of American Architecture and Urban Planning, 1600 to the Present.** Lecture, three hours. Aspects of American cultural history as explored through architecture, urban planning, and allied arts, with emphasis on development of an architectural consciousness in America, ways in which the built environment has affected its users and observers, and extent to which it has reflected their values and ways of living.

**154C.** 1600 to 1890; **154D.** 1890 to the Present.

Mr. Hines

**155A-155B. American Working Class Movements.** Lecture, three hours. Major episodes in social, trade union, and cultural history of the American working class from Colonial times to the present, emphasizing both organized and unorganized labor, history of the Knights of Labor, A.F. of L. and C.I.O., and development of labor politics.

Mr. Holter, Mr. Laslett

**156A-156B. American Social History, 1750-1960.** Lecture, three hours. Historical analysis of American society and culture, with emphasis on the family, religious values, Afro-American life, women's work, urbanization and industrialization, immigration and nativism, and movements for social reform. **156A.** 1750 to 1860; **156B.** 1860 to 1960.

Ms. Rieff

**156C-156D-156E. Social History of American Women.** Lecture, three hours. Survey of major demographic, economic, social, and intellectual factors shaping the lives of women in families, at work, and in larger social collectivities. Emphasis on class, regional, racial, and ethnic comparisons. **156C.** Colonial and Early National, 1600-1820; **156D.** Victorian and Industrial, 1800-1920; **156E.** 20th Century, 1900-1975.

Ms. DuBois, Ms. Matsumoto

**156F-156G. History of the American Family.** Lecture, three hours. Perspective on the contemporary American family through study of its development over the course of four centuries. Topics include Western European origins, sex roles, child-rearing, sexuality, work patterns. Emphasis on class, racial, ethnic, and regional variations. **156F.** 1600 to 1870; **156G.** 1870 to 1990.

Ms. Morantz-Sanchez

**156H. Medicine and Society in 19th-Century America.** Lecture, three hours. Therapeutics, theories of disease, and medical science scrutinized with the understanding that these are never value-neutral, but are shaped by social structures of which they are products. Why have doctors become so powerful and over whom did they wield power in the 19th century?

Ms. Morantz-Sanchez

**157A-157B. North American Indian History.** Lecture, three hours. History of Native Americans from contact to the present, with emphasis on historical dimensions of culture change, Indian political processes, and continuity of Native American cultures. Focus on selected Indian peoples in each period. **157A.** Precontact to 1830; **157B.** 1830 to the Present.

Ms. Meyer

**M158A. Comparative Slavery Systems.** (Same as Afro-American Studies M158A.) Lecture, three hours. Examination of the slavery experience in various New World slave societies, with emphasis on outlining similarities and differences among the legal status, treatment, and slave cultures of North American, Caribbean, and Latin American slave societies.

**M158B-M158C. Introduction to Afro-American History.** (Same as Afro-American Studies M158B-M158C.) Lecture, three hours. Survey of the Afro-American experience, with emphasis on the three great transitions of Afro-American life: transition from Africa to New World slavery, transition from slavery to freedom, and transition from rural to urban milieu.

Mr. Hill, Ms. Stevenson

**158D. Afro-American Urban History.** Lecture, three hours. Examination of Afro-American urban life prior to 1945, with emphasis on transformation from slavery to freedom and shift from Southern to Northern areas. Forces which both propelled Afro-Americans to the cities and which also inhibited their adjustment to them.

**158E. Afro-American Nationalism in First Half of the 20th Century.** Lecture, three hours. Critical examination of the Afro-American search in first half of the 20th century for national/group cohesion through collectively built institutions, associations, organized protest movements, and ideological self-definition.

Mr. Hill

**M159A. History of the Chicano Peoples.** (Same as Chicana and Chicano Studies M159A.) Lecture, three hours. Survey lecture course on historical development of the Mexican (Chicano) community and people of Mexican descent (Indio-Mestizo-Mulato) north of the Rio through the 17th, 18th, and 19th centuries, with special focus on labor and politics. Provides integrated understanding of change over time in the Mexican community by inquiry into major formative historical forces affecting the community. Social structure, economy, labor, culture, political organization, conflict, and international relations. Emphasis on social forces, class analysis, social, economic, and labor conflict, ideas, domination, and resistance. Developments related to historical events of significance occurring both in the U.S. and Mexico. Lectures, special presentations, reading assignments, written examinations, library and field research, and submission of a paper.

Mr. Gómez-Quinones

**M159B. History of the Chicano Peoples.** (Same as Chicana and Chicano Studies M159B.) Lecture, three hours. Survey lecture course on historical development of the Mexican (Chicano) community and people of Mexican descent in the U.S. through the 20th century, with special focus on labor and politics. Provides integrated understanding of change over time in the Mexican community by inquiry into major formative historical and policy issues affecting the community. Within a framework of domination and resistance, discussion deals with social structure, economy, labor, culture, political organization, conflict, and ideology. Developments related to historical events of significance occurring both in the U.S. and Mexico. Lectures, special presentations, reading assignments, written examinations, library and/or field research, and submission of a paper.

Mr. Gómez-Quinones

**160. The Immigrant in America.** Lecture, three hours. Historical analysis of causes and consequences of immigration to the U.S. in the 19th and 20th centuries. Discussion of immigration restriction, acculturation, and implications of the influx of new peoples both for U.S. domestic and foreign policy. Mexican American, Asian American, and European immigration included.

Mr. Laslett

**161. Asians in American History.** Lecture, three hours. Study of the politically troubling question of entry into the U.S. of immigrants ineligible for citizenship and their citizen children in American history.

Ms. Matsumoto

**162. American West.** Lecture, three hours. Study of the West as frontier and as region, in transit from the Atlantic seaboard to the Pacific, from the 17th century to the present.

Mr. Hundley, Mr. Sanchez

**163. History of California.** Lecture, three hours. Economic, social, intellectual, and political development of California from earliest times to the present.

Mr. Hundley, Mr. Sanchez

**164. History of Los Angeles.** Lecture, three hours; discussion, one hour. Social, economic, cultural, and political development of Los Angeles and its environs from time of its founding to the present. Emphasis on the diverse peoples of the area, changing physical environment, various interpretations of the city, and Los Angeles' place among American urban centers.

Mr. Sanchez



**165A. Early Latin America.** (Formerly numbered 165A-165B.) Lecture, three hours. Advanced survey of Latin American history from conquest to independence, with emphasis on society, culture, and ethnic aspects. Mr. Lockhart

**165C. Indians of Colonial Mexico.** Lecture, three hours. Survey of social and cultural history of the Indians of Mexico, especially central Mexico, from time of the European conquest until Mexican independence, emphasizing an internal view of Indian groups and patterns on basis of records produced by the Indians themselves. Mr. Lockhart

**166. Latin America in the 19th Century.** Lecture, three hours. Intensive analysis of economic, social, and political problems of Latin American nations from their independence to around 1910. Mr. E. B. Burns, Mr. Moya

**167A-167D. Latin America in the 20th Century.** Lecture, three hours. Experiments in national development analyzed to relate the timing of social changes to economic, political, cultural, and geographic context. Successive country case studies each focus on world pressures and interplay of overlapping themes: struggle between centralized and decentralized government agencies (emphasized in course 167A), role of personalist leaders (emphasized in course 167B), definition of the national polity (emphasized in course 167C), and "rightist" and "leftist" models of development (emphasized in course 167D). Mexico is treated in course 171. Within each course, countries are studied according to the chronological contribution to the theme emphasized.

**167A.** Haiti, Uruguay, Costa Rica, Cuba, Chile; **167B.** Bolivia, Dominican Republic, Argentina, Paraguay, Venezuela; **167C.** Panama, Colombia, Ecuador, Honduras, El Salvador; **167D.** Brazil, Guatemala, Peru, Nicaragua. Mr. Wilkie

**168. History of Latin American International Relations.** Lecture, three hours. Emphasis on developing interests of Latin American nations in their relationship with one another and with other areas of the world, beginning with 19th-century independence.

**169. Latin American Eliteloire.** Lecture, three hours. Prerequisite: course 167A, 167B, 167C, or 171. Eliteloire (defined as oral or noninstitutionalized knowledge involving leaders' conceptual and perceptual life history views) in contrast to folklore (followers' traditional or popular views). Eliteloire genres include oral history, literature, and cinema. Mr. Wilkie

**170A. Latin American Cultural History.** Lecture, three hours; discussion, one hour. Intellectual, artistic, and folk expressions of the Latin American spirit and character examined in readings and lectures, with emphasis on unique contribution of Latin Americans to develop self-interpretation. Music, films, and slides supplement discussions. Mr. E. B. Burns, Mr. Wilkie

**170B. Classic Travel Accounts of Latin America since 1735.** Lecture, three hours. Recommended for prospective researchers before they select their region of study. Introduction to "enlightened traveler" accounts as they reveal cultural change from wide-ranging spatial and temporal vantage points. Comparison of published works to photographic series to analyze the great variety of geographic regions, peoples, customs, occupations, dress, food, architecture, and transportation in the 20 countries of the area. Mr. Wilkie

**171. Mexican Revolution since 1910.** Lecture, three hours. Examination of concept of "permanent crisis" to describe and explain the structure of "permanent revolution" under "one-party democracy." Analysis of unresolved colonial and 19th-century problems and crises that have influenced modern-day Mexico, if in modified form. Mr. Wilkie

**172. History of Argentina.** (Formerly numbered 198H.) Lecture, three hours. History of economic, political, social, and cultural developments that have shaped Argentina from colonial time to the present. Emphasis on 19th-century development of an agro-export economy and 20th-century formation of a mass society. Mr. Moya

**173. Modern Brazil.** Lecture, three hours. Selected topics in political, economic, social, and cultural development of Brazil, with emphasis on modernization and the struggle for change, 1850 to the present. Discussions, films, slides, and guest speakers supplement and complement lectures. Mr. E. B. Burns

**174. Brazilian Intellectual History.** Lecture, three hours. General intellectual development of Brazil, with emphasis on those introspective movements in which Brazilians attempted to interpret themselves, their nation, and their civilization. Mr. E. B. Burns

**175A-175Z. Topics in African History.** Lecture, three hours. Prerequisite: one prior course in African history at UCLA or consent of instructor. Examination of specific topics which have a continental application rather than proceeding on a strictly chronological or regional basis:

**175A.** Prehistoric Africa — Technological and Cultural Traditions. Survey of nondocumentary sources of early African history, with particular reference to technological, economic, and cultural developments from origins of Man until the colonial period. Mr. Posnansky

**175B.** Africa and the Slave Trade. Social, economic, political, and cultural impact of the slave trade on African society, with emphasis on Atlantic trade without neglecting those of ancient Mediterranean, Islamic, and Indian Ocean worlds. Abolition and the African diaspora. Mr. Alpers, Mr. Obichere

**175C.** Africa in the Age of Imperialism. Topics include penetration of precapitalist social formations by capital, emergence of classes, nature of the colonial and postcolonial state, and struggle for national liberation in a global context. Mr. Alpers, Mr. Obichere

**175E.** Africa, 1945 to the Present. History of Africa south of the Sahara from end of World War II to the present. Last phases of colonial rule in Africa, African nationalism, Pan-Africanism, liberation movements, and achievement of independence. Political, social, and economic change in the colonies and in the independent states of Africa. Neocolonialism, experiments in national development, apartheid in South Africa, ideological conflict in contemporary Africa, and Africa in world affairs since 1957. Mr. Obichere

**176A-176B. History of West Africa.** Lecture, three hours:

**176A.** West Africa from Earliest Times to 1800. Mr. Obichere, Mr. Posnansky

**176B.** West Africa since 1800. Mr. Obichere

**176C. Social and Economic History of West Africa since 1600.** Lecture, three hours. Analysis of main currents of West African social, cultural, and economic history since the fall of the Songhai Empire, with emphasis on the family, religious values, education, urbanization, migrations, arts, slavery, and the slave trade. Roles of economic forces and institutions in promoting or inhibiting economic change in West Africa; ethnic diversity and sociopolitical integration; colonial economic systems and efforts at economic planning and development since the 1950s. Mr. Obichere

**177. Ethiopia and the Horn of Africa.** Lecture, three hours. Survey of history of Ethiopia, Somalia, and Sudan. Mr. Alpers, Mr. Ehret

**178A-178B. History of Eastern Africa.** Lecture, three hours. **178A.** Cultural diversity of Eastern African societies, growth of more complex political systems, and impact of international trade to the later 19th century. **178B.** Economic, social, and political history of Eastern Africa since imposition of colonial rule, with emphasis on underdevelopment and protest. Mr. Alpers, Mr. Ehret, Mr. Posnansky

**179A-179B. History of Southern Africa.** Lecture, three hours. Attention to social and economic as well as political aspects. **179A.** From the Origins to 1870. Origins of the South African peoples and their interactions to 1870. **179B.** Since 1870. Interactions between the inhabitants of southern Africa since 1870. Mr. Worger

**182A-182B. Thought and Society in China.** Lecture, three hours:

**182A.** To 1000. Recommended (but not prerequisite); course 11A or equivalent. Elite and popular expressions of Chinese cultural life examined in readings and lectures. Focus on diversities of thought in the classical legacy and their evolution under the impact of Buddhism to 1000. Emphasis on intersections between intellectual life and social, political, and economic conditions. Mr. Elman, Mr. von Glahn

**182B.** Since 1000. Recommended (but not prerequisite); course 11B or equivalent. Elite and popular expressions of Chinese cultural life from 1000 to the 20th century. Emphasis on social, political, and economic conditions within which Chinese orthodox and heterodox values evolved and changed. Evaluation of iconoclasm of Chinese intellectual life in the 20th century in light of earlier currents of thought. Mr. Elman

**183A-183B. Society and Economy in China.** Lecture, three hours:

**183A.** To 1500. Recommended (but not prerequisite); course 11A or equivalent. Survey of main features of Chinese society and economy in the premodern era, with emphasis on interplay of economic forces, ideas, and social and political institutions; structure of the imperial state; medieval economic revolution; gentry society. Mr. Huang, Mr. von Glahn

**183B.** Since 1500. Recommended (but not prerequisite); course 11B or equivalent. Social-economic change and involution of the late imperial period in comparative perspective; Western impact and Chinese development and underdevelopment; change and continuity in revolutionary China. Ms. Bernhardt, Mr. Huang, Mr. von Glahn

**184. 20th-Century China.** Lecture, three hours. Recommended (but not prerequisite); course 11B or equivalent. Political events and intellectual developments seen in context of social-economic trends; human agency, structural change, and historical conjunctures in the 20th century. Ms. Bernhardt, Mr. Huang

**185. Japanese Popular Culture.** Lecture, three hours. Topics in 18th-, 19th-, and 20th-century Japanese history, including legacy of premodern satire in postmodern comic books, American culture in 1930s' Japanese visual culture, gender in photography, and relationship of monster movies to postwar politics. Ms. Silverberg

**186. Shinto, Buddhism, and Japanese Folk Religion.** Lecture, three hours. Social dimension of various "Ways," great and little: Shinto's connection with cultural nationalism, Buddhism's medieval "Reformation" and Zen's relation to the warrior culture, folk religious aspects such as shamanism, ancestor worship, and millenarianism. Mr. Ooms

**187A-187B-187C. Japanese History.** Lecture, three hours. Political, economic, and cultural development of Japan from prehistory to the present. **187A.** Ancient, Prehistory to 1600; **187B.** Early Modern, 1600 to 1868; **187C.** Modern, 1868 to the Present. Mr. Noteheffer, Mr. Ooms, Ms. Silverberg

**188A. Early History of India.** Lecture, three hours. Introduction to civilization and institutions of India. Survey of history and culture of the South Asian subcontinent from earliest times to founding of the Mughal Empire. Mr. Lal, Mr. Wolpert

**188B-188C. History of British India I, II.** Lecture, three hours. **188B.** Examination of expansion of British rule, theories and practice of governance, constitution of India as an "oriental despotism," epistemological projects of the state, and other modes by which the British achieved the conquest of knowledge. **188C.** Political economy of imperialism and Britain's "civilizing mission." Encounter, especially in terms of race and gender, between the colonized and colonizers and to questions of resistance and nationalism. Mr. Lal

**190A-190B. History of Southeast Asia.** Lecture, three hours. **190A.** Early History of Southeast Asia. Political and cultural history of the peoples of Southeast Asia from earliest times to about 1815. **190B.** Southeast Asia since 1815. History of modern Southeast Asia, with emphasis on expansion of European influence in political and economic spheres, growth of nationalism, and process of decolonization.

Mr. SarDesai

**M191A-M191B. Survey of Jewish History.** (Same as Jewish Studies M191A-M191B.) Lecture, three hours. Survey of social, political, and religious developments. **M191A.** From Biblical Times to End of the Middle Ages; **M191B.** From End of the Middle Ages to the Present.

Mr. Myers

**M191C-M191D. Focal Themes in Jewish History.** (Same as Jewish Studies M191C-M191D.) Lecture, three hours. Treatment in depth of one major theme in Jewish history (such as history of Messianic Movements, structure of the Jewish communities) through the ages.

Mr. Myers

**191E-191F. The Third Reich and the Jews.** Lecture, three hours:

**191E.** History of modern anti-Semitic ideologies and movements. Rise of national socialism in Germany. Development and execution of Nazi anti-Jewish policy to outbreak of World War II.

Mr. Friedlander

**191F.** Second World War. Implementation of Nazi plans for extermination of Jews in Nazi-dominated Europe. Life in Nazi-imposed ghettos. Forms of Jewish resistance. Fate of Jewish populations in the occupied territories.

Mr. Friedlander

**191G. European Jewry from 1881 to the Present.** Lecture, three hours. Survey of major social, economic, and political factors that shaped the lives of Europe's Jews from outbreak of the First World War to the present. Emphasis on the diverse Jewish communities of interwar Europe, fate of Jews under the Nazis, and character of the postwar Jewish community. P/NP or letter grading.

Mr. Myers

**M192A-M192B. Jewish Intellectual History.** (Same as Jewish Studies M192A-M192B.) Lecture, three hours. Development of Jewish self-understanding in relation to intellectual climate of the environment as expressed in the halacha, in philosophy, and in cabalism. **M192A.** Medieval Period; **M192B.** Modern Period.

Mr. Friedlander

**193A. History of Religions: Myth.** Lecture, three hours. Nature and function of myth in history of religion and culture. Examples selected from nonliterate as well as from other Asian and European traditions.

**193B. Religions of South and Southeast Asia.** Lecture, three hours. Prerequisite: course 4 or 193A. Topics vary from year to year and include religion of the Veda; Brahmanism; (later) Hinduism. Consult *Schedule of Classes* for specifics. May be taken independently for credit.

**193C. Religions of South and Southeast Asia.** Lecture, three hours. Prerequisite: course 4 or 193A. Topics vary from year to year and include Buddhism in India; religions of Java and Bali; nonliterate traditions of India and Southeast Asia. Consult *Schedule of Classes* for specifics. May be taken independently for credit.

**193D. Religions of the Ancient Near East.** Lecture, three hours. Main polytheistic systems of the ancient Near East, with emphasis on Mesopotamia and Syria and with reference to the religion of ancient Israel: varying concepts of divinity, hierarchies of gods, prayer and cult, magics, wisdom, and moral conduct.

Mr. Buccellati

**193E. Special Topics in History of Religions.** Lecture, three hours. Topics announced in *Schedule of Classes* and include ancient Germanic cults; Renaissance mysticism; mystics of the low countries; goddesses; religion in a secular age.

**194A. History of Early Christians.** Lecture, three hours; discussion, one hour. Christian movement from its origins to ca. 160 C.E., stressing its continuity/discontinuity with Judaism, various responses to Jesus of Nazareth, writings produced during this period, movement's encounters with its religious, social, and political world, and methods of research.

Mr. Bartych

**194B. Religious Environment of Early Christians.** Lecture, three hours; discussion, one hour. Rich variety in religious practice and thought in the Mediterranean world of the 1st century C.E. as in context of the developing Christian movement. Topics include the Pharisees, Qumran, Philo, Stoics, Epicureans, traditional Greek and Roman religions, "mysteries," astrology, magic, gnosticism, and emperor-worship.

Mr. Bartych

**194C. Jesus of Nazareth in Historical Research.** Lecture, three hours; discussion, one hour. Recommended (but not prerequisite): course 194A. Stimulated by significant post-Enlightenment historical evaluations, students are led into firsthand knowledge (in translation) of various multilayered sources for reconstruction of the life, teaching, and initial impact of Jesus of Nazareth in his social, economic, political, and religious contexts.

Mr. Bartych

**195A-195B-195C. History of Science.** Lecture, three hours. Prerequisite: course 3A or consent of instructor.

**195A.** Medieval and Renaissance Science. Continuity and discontinuity in scientific traditions from the 12th to the 17th century; interrelationships between theology, scientific thought, and social conditions. Theories of force, motion, and space; some attention to occult sciences.

Mr. Biagioli

**195B.** Perspectives on Early Modern Physical Science. Detailed view of selected topics in development of physical sciences from 1650 to 1800. Typical subjects include chemistry, social and political aspects of scientific change, and science in the Enlightenment.

Mr. Biagioli

**195C.** Perspectives on Modern Physical Science. Selected aspects of 19th- and 20th-century physical science, typically including science and industrialization, thermodynamics, electromagnetism, relativity, quantum mechanics, and the atom bomb.

**M195F-M195G. History of Biological Sciences.** (Same as Anatomy/Medical History M108A-M108B.) Lecture, three hours. **M195F.** Biological Sciences from Ancient Times to the Early 19th Century; **M195G.** Biological Sciences from the Early 19th Century to the Mid-20th Century.

Mr. Frank (F,W)

**197. Undergraduate Seminars.** Seminar, three hours. Limited to 15 students meeting with a faculty member. Organized on a topics basis with readings, discussions, papers. Signups and descriptions of offerings each term are available in undergraduate counselor's office (6248 Bunche Hall). May be repeated once for credit. When concurrently scheduled with courses 201A-201U or M203A-M203B, undergraduates must obtain consent of instructor to enroll.

**199. Special Studies in History.** Intensive directed research program. Eight units may be applied toward major requirements.

**199HA-199HB-199HC. Directed Studies for Honors.** Limited to history honors majors. In Progress grading. **199HA.** Extensive reading and research in the field of proposed honors thesis. Report on work in progress to be made to sponsoring professor at regular intervals. **199HB.** Seminar meetings on research methods with continued reading and research culminating in draft of honors thesis. **199HC.** Revisions of draft and preparation of polished honors thesis; oral examination on thesis.

**199I. Independent Studies for Internships.** Prerequisite: maintenance of 3.0 grade-point average in the major. Independent studies course to be supervised jointly by Field Studies Office and faculty adviser. Further supervision to be provided by business for which student is doing internship. May not be used to satisfy requirement for course 197 or 199. Normally, only four units of internship with History Department are allowed. P/NP grading.

## Graduate Courses

Admission to all graduate courses is subject to consent of instructor and to appropriate language qualifications. For multiterm courses, credit and grades are given only on completion of the full seminar sequence, with In Progress grading until the last term unless otherwise noted. Topics courses and seminars may be repeated.

**200A-200U. Advanced Historiography.** Seminar, three hours. May be repeated for credit. **200A.** Ancient Greece; **200B.** Ancient Rome; **200C.** Medieval; **200D.** Early Modern Europe; **200E.** Modern Europe; **200F.** Russia/Eastern Europe; **200G.** Britain; **200H.** U.S.; **200I.** Latin America; **200J.** Near East; **200K.** India; **200L.** China; **200M.** Japan; **200N.** Africa; **200O.** Science/Technology; **200P.** History of Religions; **200Q.** Theory of History; **200R.** Jewish History; **200S.** Armenia and the Caucasus; **200T.** Southeast Asia; **200U.** Psychohistory.

**M200V. Advanced Historiography: Afro-American.** (Same as Afro-American Studies M200A.) Seminar, three hours. May be repeated for credit.

**M200W. Advanced Historiography: American Indian Peoples.** (Same as American Indian Studies M200A.) Seminar, three hours. Designed to familiarize students with major genres of literature related to American Indian history. Subjects include theories of Indian origins, historical demography, Euro-American attitudes toward Indian peoples, studies of U.S. Indian policy, and tribal histories. Standard theoretical approaches, including cultural ecology and dependency theory.

Ms. Meyer

**200X. Advanced Historiography: Oral History.** Seminar, three hours. Introduction to practice, method, and theory of oral history.

**200Y. Advanced Historiography: Application of Economics to History.** Discussion, three hours.

Mr. Sokoloff, Ms. Yeager

**200Z. Advanced Historiography: Chicano.** Discussion, three hours. Graduate survey of leading literature in Chicano history, with emphasis on new methodological and theoretical approaches in the field.

Mr. Sanchez

**201A-201U. Topics in History.** Seminar, three hours. Topic titles are same as for courses 200A-200U. Graduate courses involving reading, lecturing, and discussion of selected topics. Does not fulfill seminar requirements for Ph.D. degree. May be repeated for credit. When concurrently scheduled with course 197, undergraduates must obtain consent of instructor to enroll.

**202A-202B. Seminars: Comparative Modern Economic History.** Discussion, three hours. Prerequisite: graduate standing. Study of problems of modern economics in the 19th and 20th centuries, including such topics as industrialization, growth, demography, development, and economic change. In Progress grading.

Ms. Yeager

**M203A-M203B. Social Theory and Comparative History.** (Same as Political Science M291A-M291B and Sociology M296A-M296B.) Colloquium, three and one-half hours every other week. Introduction to historically rooted social theory and theoretically sensitive history, following the program of the Center for Social Theory and Comparative History. Each course may be taken independently for credit.

Mr. Ashcraft, Mr. Brenner

**204A-204B. Seminars: Near and Middle Eastern History.** Seminar, three hours. Methodology, socio-economic and political change in the Arab world.

Ms. Marsot

**205A-205B. Seminars: Medieval Middle Eastern History.** Seminar, three hours. Mr. Morony

**206A-206B. Seminars: Social History of the Middle East.** Seminar, three hours. Interrelationship of city, tribe, and village in the Middle East; role of such definable social groups as women, religious classes, middle classes, landlords, tribesmen, and peasants; social change. Ms. Keddie

**M207. Seminar: Ancient Mesopotamia.** (Same as Ancient Near East M250.) Seminar, three hours. Selected topics on political, social, and intellectual history of ancient Mesopotamia. May be repeated for credit.

Mr. Buccellati

**209A-209B. Seminars: Ottoman and Modern Turkish History.** Seminar, three hours. Mr. Shaw

**211A-211B. Seminars: Armenian History.** Seminar, three hours. Mr. Hovannisian

**C212. Methods in Armenian Oral History.** Seminar, three hours. Prerequisite: proficiency in Armenian language. Lectures and laboratory in methods of taking, processing, and utilizing depositions and other oral sources for Armenian history, including project assignment in the field. May be concurrently scheduled with course C112D. Mr. Hovannisian

**215A-215B. Seminars: Ancient History.** Seminar, three hours. Mr. Chambers, Mr. Mellor

**216A-216B. Seminars: Byzantine History.** Seminar, three hours.

**217. Sources and Handbooks of Medieval History.** Seminar, three hours. Prerequisite: reading knowledge of German or French. Introduction to types of medieval source materials and the handbooks needed to use them. Mr. Rouse

**218. Medieval Latin Literary History.** Seminar, three hours. Recommended (but not prerequisite): reading knowledge of Latin and German or French. Examination of aspects of medieval history through study of paleography, medieval libraries, and transmission of ancient medieval authors. Mr. Rouse

**219A-219B. Paleography I, II.** Seminar, three hours. Prerequisite: reading knowledge of Latin and German or French:

**219A.** History of the manuscript book from antiquity through the Carolingian renaissance, with emphasis on dating and localization as well as on proficiency in reading. Mr. Rouse (alternate years)

**219B.** History of the manuscript book from the Carolingian renaissance through the invention of printing, with emphasis on dating and localization as well as on proficiency in reading. Mr. Rouse (alternate years)

**220A-220B. Seminars: Church and Monarchy in the Middle Ages.** Seminar, three hours. Textual studies and interpretative problems in constitutional, legal, and intellectual history of the Latin church and of Western European monarchies, with special attention to the German monarchy, from the 11th to 14th century. Mr. Benson

**221A-221B. Seminars: Medieval History.** Seminar, three hours.

**222A-222B. Seminars: Medieval Intellectual History and History of Science.** Seminar, three hours. Selected problems from medieval and early modern philosophy, science, political theory, theology.

**225. Colloquium for Entering Graduate Students in Modern European History.** Seminar, three hours. Normally limited to and required of all modern European history graduate students. Introduction to topics, methods, and historiography of modern European history. Mr. Reil, Mr. Wohl

**226A-226B. Seminars: Italian Renaissance.** Seminar, three hours. Mr. Ginzburg

**227A-227B. Seminars: Reformation.** Seminar, three hours.

**229A-229B. Seminars: Early Modern European History.** Seminar, three hours. Mr. Anderson, Mr. Ginzburg, Mr. Symcox

**230A-230B. Seminars: Modern European History.** Seminar, three hours.

Mr. Berenson, Mr. Loewenberg, Ms. Silverman

**231A-231B. Seminars: Modern European Intellectual and Cultural History.** Seminar, three hours.

Mr. Loewenberg, Ms. Silverman, Mr. Wohl

**232A-232B. Seminars: French History of the 19th and 20th Centuries.** Seminar, three hours.

Mr. Berenson, Ms. Silverman, Mr. Weber

**233A-233B. Seminars: Russian/Soviet History.** Seminar, three hours. Mr. Frank, Mr. Hatch

**234A-234B. Seminars: Modern History of Spain, Portugal, and Italy.** Seminar, three hours.

Mr. Wohl

**235A-235B. Economic History of Europe, 1780-1939.** Lecture, three hours. Analysis of internationalization of European world economy, emergence of Western core and its relation with European peripheries. Comparative analysis on different regions, stressing main characteristics of postwar European economy. Mr. Berend

**M236A. Proseminar: Political Psychology.** (Same as Political Science M261A and Psychology M228A.) Discussion, three hours. Introduction to political psychology: psychobiography, personality and politics, mass attitudes, group conflict, political communication, and elite decision making.

Mr. Loewenberg, Mr. Sears

**236B-236C. Seminars: Psychohistory.** (Formerly numbered 236A-236B.) Seminar, three hours. Exploration of individual and group psychological processes and their uses in historical research.

Mr. Friedlander, Mr. Loewenberg, Mr. Wohl

**239A-239B. Seminars: English History — Middle Ages.** Seminar, three hours. Mr. Waugh

**240A-240B. Seminars: English History — Modern History.** Seminar, three hours.

Mr. Brewer, Mr. Urdank

**244A-244B. Seminars: British Empire History.** Seminar, three hours.

**245. Colloquium: U.S. History.** Seminar, three hours. Normally limited to and required of all entering graduate students in U.S. history. Critical introduction to historical method, with emphasis on new methodological and conceptual approaches, use of source materials, and current state of U.S. historiography.

**246A-246B-246C. Introduction to U.S. History.** Seminar, three hours. Graduate survey of significant literature dealing with U.S. history from the Colonial period to the present. Each course may be taken independently for credit:

**246A.** Colonial Period. Ms. Appleby, Mr. Nash

**246B.** 1790 to 1900. Ms. Morantz-Sanchez

**246C.** 20th Century. Mr. Dallek, Mr. Sanchez, Mr. Weiss

**247A-247B. Seminars: Early American History.** Seminar, three hours. Ms. Appleby, Mr. Nash

**249A-249B. Seminars: Jacksonian America.** Seminar, three hours.

**250A-250B. Seminars: U.S. History of the Middle 19th Century.** Seminar, three hours.

**252A-252B. Seminars: Recent U.S. History to 1930.** Seminar, three hours.

Mr. Coben, Mr. Hines, Mr. Schulman

**253A-253B. Seminars: Recent U.S. History since 1930.** Seminar, three hours. Mr. Hines, Mr. Weiss

**254A-254B. Seminars: U.S. Social and/or Intellectual History.** Seminar, three hours.

**255A-255B. Seminars: History of Business and Government in the American Economy.** Seminar, three hours. Ms. Yeager

**256A-256B. Seminars: American Diplomatic History.** Seminar, three hours. Mr. Dallek

**257A-257B. Seminars: U.S. Urban History.** Seminar, three hours. Mr. Hines, Mr. Monkkonen

**258A-258B. Seminars: Working Class History.** Seminar, three hours. Mr. Laslett

**259A-259B. Seminars: Social History of Women in the U.S.** Seminar, three hours. Ms. DuBois

**260A-260B. Seminars: Native American History.** Seminar, three hours. Ms. Meyer

**261A-261B. Seminars: Afro-American History.** Seminar, three hours. Social and political history of the Afro-American, including emphasis on development and structure of race relations in America; racial concepts and dilemmas, black and white. Mr. Hill

**262A-262B. Seminars: Chicano History.** Seminar, three hours. Mr. Gómez-Quíñones

**263A-263B. Seminars: History of the American West.** Seminar, three hours. Mr. Hundley

**M264. History of American Education.** (Same as Education M201C.) History of educational thought and of social forces impinging on American education from the 1880s to the present. Analysis of relation between these ideas and forces, and aims and practices of American education today. Mr. S. Cohen

**M265. Latin American Research Resources.** (Same as Latin American Studies M200 and Library and Information Science M225.) Seminar, three hours. General and specialized materials in fields concerned with Latin American studies. Library research techniques provide experience and competency required for future bibliographic and research sophistication as basis for enhanced research results. Mr. Lauerhass

**266A-266B. Seminars: Colonial Latin American History.** Seminar, three hours. Mr. Lockhart

**267A-267B. Seminars: Latin American History, 19th and 20th Centuries.** Seminar, three hours.

**M268A-M268B. Seminars: Recent Latin American History.** (Same as Latin American Studies M268A-M268B.) Seminar, three hours. Prerequisite: consent of instructor. Reading knowledge of Spanish and Portuguese normally required. Seminar devoted to selected topics of an interdisciplinary nature. In Progress grading. Mr. Wilkie

**275. Introduction to Professional Study of African History.** Seminar, three hours. Required of all entering graduate students in African history. Strongly recommended for students with a history concentration in African Area Studies M.A. program. Source identification, research methodologies, historiographical traditions, historical interpretation, and approaches to teaching. Mr. Ehret, Mr. Worgor

**276. African Archaeology: Field Techniques (2 to 8 units).** Seminar, three hours. Prerequisites: any introductory course in archaeology and preferably an African history course. Field course on an African excavation to provide basic skills—reconnaissance, surveying, excavation techniques, conservation, and scientific sampling required by an archaeologist in Africa, together with introduction to ethnographic survey and oral data collection. Mr. Posnansky

**277. African Archaeology: Data Analysis (2 to 8 units).** Seminar, three hours. Prerequisite or corequisite: course 276. Field course to equip students to handle finds from excavations. Analysis, description, illustration, and interpretation of actual archaeological and/or ethnographic collection. Mr. Posnansky

**278A-278B. Seminars: African History.** Seminar, three hours.

**M281. China — Seminar: Classical Historiography and Readings in Classical Studies.** (Formerly numbered M201L.) (Same as Chinese M201.) Discussion, three hours. Prerequisite: two years of classical Chinese or working knowledge of classical Chinese. Readings in historiography and selected genres of historical documents. Mr. Elman

**282A-282B. Seminars: Chinese History.** Seminar, three hours. Ms. Bernhardt, Mr. Elman, Mr. Huang, Mr. von Glahn

**285A-285B. Seminars: Modern Japanese History.** Seminar, three hours.

Mr. Notehelfer, Ms. Silverberg

**288A-288B. Seminars: South Asia.** Seminar, three hours. Mr. Lal, Mr. Wolpert

**289A-289B. Seminars: Southeast Asia.** Seminar, three hours. Mr. SarDesai

**291A-291B. Seminars: Jewish History.** Seminar, three hours. Studies in intellectual and social history of Jewish people from ancient times to the modern period. Mr. Myers

**293A-293B. Seminars: History of Religions.** Seminar, three hours.

**295. Theories of Scientific Change.** Seminar, three hours. Historical and philosophical perspectives on science, focusing on rationality of scientific change and logic and psychology of scientific discovery. Readings and seminar-style discussions of such authors as Popper, Kuhn, Toulmin, Lakatos, Holton, Buchdahl, Feyera-bend, and others.

**297A-297B. Seminars: History of Science.** Seminar, three hours.

Mr. Biagioli, Mr. Porter, Ms. Traweek

**M298. Interdisciplinary Studies in the 17th and 18th Centuries.** (Same as English M298.) Topics vary according to participating faculty.

Mr. Brewer, Mr. Novak

**M299. Interdisciplinary American Studies (6 units).** (Same as English M299.) Discussion, four hours. Readings, discussion, and papers on a common theme, team-taught by faculty from different departments. Topics vary according to participating faculty. May be repeated for credit with consent of instructors.

Mr. Monkkonen

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**490. Writing Workshop for Graduate Students (2 units).** Prerequisite: consent of instructor. Writing workshop on students' papers-in-progress. Analysis and group discussion of rhetorical and stylistic principles, illustrated in students' own and in professional historians' work, help students improve their own writing. May be repeated once. S/U grading.

Ms. Strenski

**495. Teaching History.** Prerequisite: graduate standing. Required of all new teaching assistants. Lectures, readings, discussions, and practice teaching sessions within the structure of a seminar. Students receive unit credit toward full-time equivalence but not toward the nine-course requirement for M.A. degree. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Studies (1 to 8 units).** Prerequisites: graduate standing, consent of instructor. Individual directed reading arranged with professor. M.A. candidates may take this course only once. Number of times Ph.D. candidates may take this course is subject to consent of graduate studies committee. S/U or letter grading.

**597. Directed Studies for Graduate Examinations (1 to 8 units).** Preparation for M.A. comprehensive examination or Ph.D. qualifying examinations. S/U grading.

**599. Ph.D. Research and Writing (1 to 8 units).** Prerequisite: advancement to Ph.D. candidacy.

## History/Art History (Interdepartmental)

6248 Bunche Hall, (310) 825-3720

### Scope and Objectives

The interdisciplinary major in history/art history allows students to study the relationship between art history and the history of society, politics, and culture.

## Bachelor of Arts Degree

Lower division history and art history courses may be applied toward the general education requirements; a course taken to satisfy the American History and Institutions requirement may be applied toward the history section of the interdepartmental major.

No course for the major may be taken on a P/NP grading basis.

If you wish to confer with a counselor regarding program planning and major requirements, contact the history/art history counselor at (310) 825-3720.

### Preparation for the Major

*Required:* History 1A-1B-1C; two courses from Art History 50, 51, 54, 57; one course from Art History 55A, 55B, 56A, 56B.

### The Major

*Required:* History 100A or 101; 197 or 199; and courses as indicated in the following groups:

**Group A** — Two non-Western history courses from History M104A, M104B, M105, 106A, 106B, 106C, 107A, 107B, 108A, 108B, 109A, 109B, 110A, 110B, 111A, 111B, 111C, 112A through C112D, 115A, M122, 123A, 123B, 157A, 157B, 165A, 165C, 166, 167A, 167B, 167C, 168, 169, 170A, 170B, 171, 173, 174, 175A, 175B, 175C, 175E, 176A, 176B, 177, 178A, 178B, 179A, 179B, 182A, 182B, 183A, 183B, 184, 187A, 187B, 187C, 188A, 188B, 190A, 190B, 193D.

**Group B** — Two U.S. history courses from History 145A, 145B, 146A, 146B, 147A, 147B, 148A, 148B, 148C, 149A, 149B, 150A, 150B, 150C, 151A, 151B, 152A, 152B, M153, 154A through 154D, 155A, 155B, 156A through 156H, 157A, 157B, M158A through 158E, M159A, M159B, 160, 161, 162, 163, 164.

**Group C** — Two European history courses from History 116A, 116B, 117A, 117B, 121A through 121D, 125A through 125F, 126A through 126E, 127A, 127B, 128A, 128B, 128C, 129A through 129D, 130A, 130B, 130C, 131A through 131D, 132A, 132B, 133A, 133B, 134A, 134B, 135A, 135B, 136A through 136Z, 137A, 137B, 137C, 138A, 138B, 139, 141A, 141B, 141C, 142A, 142B, 143, 144.

**Group D** — Three Western art history courses from Art History 101A, 101B, M102A through M102H, 106A through 106D, 108A, 108B, 109A through 109D, 110A through 110F, C112A, C112B, C112C.

**Group E** — Three non-Western art history courses from Art History 104A, 104B, C104C, 114A, 114C through 114F, C115A through C115F, C117A, C117B, C117C, 118A, 118C, 118D, C119A, C119B.

**Group F** — Two art history elective courses selected from the above lists. You may also take Art History 127, 197, 199 to meet this requirement.

## Honors Collegium

A311 Murphy Hall, (310) 825-1553

The Honors Collegium is an unusual educational alternative designed primarily for students in their freshman and sophomore years. Entering freshmen with at least a 580 SAT verbal score who have satisfied the Subject A requirement and continuing students with a UCLA grade-point average of 3.0 who have satisfied the Subject A requirement may enroll in specially devised Honors Collegium courses with an interdisciplinary emphasis. The collegium offers small classes and individual attention. It encourages animated discussion among students, as well as between students and professors. And it seeks to promote scholarly exchange across the major disciplines in the University.

Each course is staffed by a director who is distinguished in teaching and scholarship, by a variable number of guest lecturers, and by additional specialists in their fields. Many courses satisfy general education requirements and serve as preparation for numerous majors in the College of Letters and Science. Counselors are available in the Honors Programs Office, A311 Murphy Hall, to advise and help you plan an integrated academic program.

In 1993-94 the Honors Collegium will offer the following one-term courses, most of which carry four units of credit each; the six-unit courses are so indicated.

### Lower Division Courses

**2. Comparative Genocide.** Lecture, four hours; discussion, one hour. Social comparative study of genocide, combining theoretical concepts with case studies (such as Armenia, the Holocaust, American Indians, Uganda under Amin and Obote, etc.). P/NP or letter grading.

Mr. Hovannisian (F)

**5. Geometry of Relativity.** Lecture, three hours; discussion, one hour. No special mathematical knowledge required. Systematic examination of relationship between physics and geometry in Einstein's relativity theories. P/NP or letter grading.

Mr. Venkateswaran (W)

**7A. Urban Poverty and Public Policy in the U.S.** Lecture, four hours; discussion, one hour. Focus on social welfare in the U.S., providing historical overview of poverty and the social programs that have attempted to deal with it and addressing current debate on the subject. P/NP or letter grading.

Ms. Ortiz (F)

**7B. Urban Poverty and Public Policy in the U.S.** Optional fieldwork and tutorial. Corequisite: course 7A. Field studies in social policy. P/NP or letter grading.

Mr. Oliver (F)

**20. Human Dimensions of Global Environmental Change.** Seminar, three hours. Examination of changes in natural environment wrought by human action and, in turn, effects of these changes on human beings and their societies. P/NP or letter grading.

Mr. Trimble (Sp)

**21. Rise and Fall of Modernism (6 units).** Seminar, three hours; writing seminar, two hours. Study of early and middle 20th-century's attempt to construct significance in a general climate of disillusionment by way of literature, literary criticism, and other intellectual movements. P/NP or letter grading.

Mr. Creese (Sp)

**25. Human Genome: Prospects for a Super Race?** Lecture, four hours; discussion, one hour. Influence of genetics on human biology, addressing the controversial issue of using genetic engineering to alter genes on human chromosomes. P/NP or letter grading.

Mr. Goldberg (Sp)

**27. Time in Society and History.** Seminar, three hours. Examination of concept of time from sociological, historical, philosophical, anthropological, and physical perspectives, looking specifically at how cultures have perceived time, how societies have organized themselves within it, and how various disciplines have theorized it in terms of concepts like causality. P/NP or letter grading.

Mr. Roy (Sp)

**28. Misleading Mirror: Self-Portraits in Word and Image.** Self-portraiture as it is represented in the novel, poetry, painting, essay, and film, both from point of view of the artist/representer and from perspective of the reader/viewer. P/NP or letter grading.

Mr. Morris (Sp)

**32. Creativity and Culture: Making Things New in the Arts, Humanities, Social Sciences, and Sciences (6 units).** Seminar, three hours; writing laboratory, two hours. Study of creative acts of artists, writers, social scientists, and scientists in relation to their societies, cultures, disciplines, conventions, and art forms. P/NP or letter grading.

Mr. Creese (F)

**33. Physics from Aristotle to Einstein.** Lecture, three hours; discussion, one hour. Concepts of physics in context of their historical development from classical times to the early 20th century. P/NP or letter grading.

Mr. Kennel (F)

**39. Nuclear Revelations about the Earth and Cosmos: We Are Stardust.** Lecture, two and one-half hours; discussion, one hour. Exploration of evolution of universe, solar system, and Earth through unifying theme of synthesis and destruction of nuclides — isotopic variations which are responsible for virtually all cosmological and geological phenomena. P/NP or letter grading.

Mr. Harrison, Mr. Morris (F)

**40. Origin and Evolution of Solar System and Earth.** Lecture/discussion, three hours. Investigation into the nature of space (astronomical) and time (geological) of the solar system, including comparative planetology; study of formation of Earth, its geological time scale, and development of its atmosphere and hydrosphere. P/NP or letter grading.

Mr. Newman (W)

**46. Masculinity, Sexuality, and Patriarchy.** Seminar, three hours. Examination of patriarchal aspects of male gender role in American society, including perspectives of biological determinism and social constructionism, cultural icons of masculinity, heritage of traditional and nontraditional male roles in Western culture, and alternative notions of masculinity in non-Western societies. P/NP or letter grading.

Mr. Bridgewater (F)

**50B. Gender and Race: Constructions of Greek Political Thought.** Lecture, three hours; discussion, one hour. Comprehensive introduction to Greek views of humanity with concentration on gender and race, especially as these issues are manifested in Plato and Aristotle. P/NP or letter grading.

Ms. Bergren (W)

**52. Good, Better, Best Western: Approaches to the 19th-Century American Frontier.** Seminar, three hours. Study of the 19th-century American West as a geographical, economic, historical, and cultural region, expanding traditional discourse to include histories and stories of Mexicans, Native Americans, Mormons, and black Westerners. P/NP or letter grading.

Mr. Allmendinger (W)

**55. Imagining Revolution.** Seminar, three hours. Examination of how English writers, in ways both political and imaginative, sought to grasp significance of the French Revolution. P/NP or letter grading.

Mr. Sheats (W)

**56. Structure and Development of Language.** Lecture, four hours; discussion, one hour. Study of nature of human language, including its formal character (phonetics, syntax), differences and similarities between sign languages and spoken languages, language acquisition, relationship between languages and other mental abilities, and autonomous nature of language as a system of knowledge. P/NP or letter grading.

Ms. Curtiss (F)

**58. Apartheid and Social Stratification in South Africa: Theory and Data.** Seminar, three hours. Examination as an empirical question of structure and consequences of apartheid in South Africa, including analyses both of history and of social stratification. P/NP or letter grading.

Mr. Treiman (W)

**60. Human Biomechanics: Historical Perspective.** Development of human biomechanics from its beginnings in ancient Greek art and literature through Da Vinci in the Renaissance and Newton in the 17th century to contemporary trends in electromyography and video technologies. P/NP or letter grading.

Mr. Whiting (W)

**61. Social Theory in the 20th Century (6 units).** Lecture, three hours; discussion, one hour; writing seminar, two hours. Examination of the strikingly subjective thrust of 20th-century social thought which has emphasized cultural and emotional structures rather than the material, objective world. Focus on psychoanalysis, structuralism, functionalism, existentialism, and phenomenology in readings from Durkheim to Jean-Paul Sartre. P/NP or letter grading.

Mr. Szelenyi (W)

**64. Encounters with the Other: European Colonialism and Representation.** Seminar, three hours. Exploration of broad range of representations — drama, fiction, film, paintings, ethnography, and cultural anthropology — to understand role played by such cultural products in encounter between European sensibility and colonized "other." P/NP or letter grading.

Mr. Aguirre (Sp)

**67. Plankton, Pollution, and Progress in the Ocean.** Lecture, two and one-half hours; discussion, 90 minutes. General physical and chemical oceanography, phytoplankton physiology and ecology, effects of anthropogenic activities, remediation, mitigation, control, and their consequences and costs. P/NP or letter grading.

Mr. Chapman (W)

**68. History of Social Thought.** Lecture, three hours; discussion, one hour. Study of significant forms of social theory and social change from the English Revolution to beginning of the 20th century, including readings from Hobbes, Rousseau, Smith, Tocqueville, Marx, and Freud. P/NP or letter grading.

Mr. Prager (W)

**69. American Writing, American Photography.** Seminar, three hours. Exploration of interrelationship of American writing and American photography, including social documentary, American naturalism, war, and contemporary social conflict and change. P/NP or letter grading.

Mr. Goodwin (Sp)

**73. Elementary Particles in the Universe.** Lecture, two hours; discussion, 90 minutes. No special mathematical knowledge required. Examination of elementary particle physics, including status of its current study in laboratories around the world and its role in assessing the early evolution of the universe. P/NP or letter grading.

Mr. Cline (F)

**74. Life Crises in Literature.** Seminar, three hours. Examination of typical life upheavels (child abuse, coming of age, death, etc.) as they are portrayed in modern literature and, by comparative analyses of diverse literatures, focus on ways in which universal events are filtered through the prism of distinct cultural perspectives. P/NP or letter grading.

Ms. Hadda (Sp)

**83. Politics and Rhetoric of Literature (6 units).** Seminar, four hours; writing laboratory, two hours. Examination of relationship among politics, rhetoric, and literature in study of literature from classical times to the present, broadening into general discussions of development of political discourse in Western thought, particularly conflict between self and state, between ideology and the practical business of living. P/NP or letter grading.

Ms. Wilson (W)

**85. Relationship between Physics and Art.** Study of relationship between intellectual problem solving and aesthetics in physics, with particular attention to such aesthetic experiences as holographs and liquid light displays. P/NP or letter grading.

Ms. Davis, Mr. Rudnick (Sp)

**88. Earth: How It Works.** Seminar, three hours. Earth as a system of distinct, yet intimately connected, physical and biological elements and influence of human activity on this system, including possibilities of technological solutions to global pollution. P/NP or letter grading.

Mr. Turco (Sp)

**89. Freud, Fairy Tales, and Feminism.** Lecture/discussion. Demonstration of both the power of Freud's ideas and vision and vitality of criticisms of Freud that emanate from self-psychology and feminist thinking in contemporary social science. P/NP or letter grading.

Mr. Rabow (Sp)

**94. American Presidency: Psychocultural Perspectives.** Seminar, three hours. Focus on six American presidents, all of whom have been influenced by a combination of liberal and conservative ideas. Exploration of their political actions through study of their personalities and the national and political culture in which they functioned. P/NP or letter grading.

Mr. Dallek (F)

**97. Issues in American Foreign Policy: Methodology of Assessment.** Lecture/debate, three hours; discussion, one hour. Exploration in debate format of wide range of views on contemporary foreign policy issues to train students how to discern the ideological origins of policy arguments. Examination of material in major foreign policy journals. P/NP or letter grading.

Mr. Spiegel (Sp)

## Upper Division Courses

**M102. Culture, Media, and Los Angeles (6 units).** (Formerly numbered 102.) (Same as Afro-American Studies M102 and Asian American Studies M197H.) Lecture, four hours; screenings, two hours. Prerequisite: upper division standing. Role of media in society and its influence on contemporary cultural environment, specifically in Los Angeles; issues of representation as they pertain to race, ethnicity, gender, and sexuality. P/NP or letter grading.

Mr. Gabriel (Sp)

**M103. Interracial Work, Friendship, and Love Relationships of African American Men and Women.** (Formerly numbered 103.) (Same as Afro-American Studies M175 and Women's Studies M103.) Seminar, three hours. Examination of factors that influence development, maintenance, and dissolution of interracial relationships (specifically African Americans in interracial relationships) in the workplace, friendships, and intimate love relationships. P/NP or letter grading.

Ms. Mays

**105. Chinese and Greek Heroes, Past and Present.** Seminar, three hours. Prerequisite: upper division standing. Comparison of Greek and Chinese notions of the heroic in ancient epics and redefinitions of the heroic in their modern permutations, allowing students to interrogate cultural constructions of manhood. P/NP or letter grading.

Ms. Cheung (Sp)

**106. Imaginary Women.** Prerequisite: upper division standing. Study of four female cultural archetypes — absconding wife/mother, infanticide mother, intellectual woman, and warrior woman — as they appear in their classical and modern manifestations in European and American cultures. P/NP or letter grading.

Ms. King (Sp)

**199. Directed Honors Studies.** Prerequisites: minimum of four units completed in Honors Collegium with a grade of B or better, overall UCLA GPA of 3.0 or better, consent of instructor and dean of Division of Honors and Undergraduate Programs. Special research/writing tutorial with a director of one of the Honors Collegium courses in order to pursue in greater depth a significant topic from one of the Collegium courses. May not be repeated for credit.

## Humanities

334D Royce Hall, (310) 825-7650

### Professors

Emily Apter, Ph.D. (*French, Comparative Literature*)  
 Arnold J. Band, Ph.D. (*Hebrew, Comparative Literature; Distinguished Teaching Award*)  
 Kathleen L. Komar, Ph.D. (*German, Comparative Literature; Distinguished Teaching Award*)  
 Ross P. Shideler, Ph.D. (*Scandinavian, Comparative Literature; Distinguished Teaching Award*), Chair  
 Samuel Weber, Ph.D. (*English, Comparative Literature*)  
 Pier-Maria Pasinetti, Ph.D., Emeritus (*Italian, Comparative Literature*)

### Associate Professors

Katherine C. King, Ph.D. (*Classics, Comparative Literature; Luckman Distinguished Teaching Award*)  
 Lucia Re, Ph.D. (*Italian, Comparative Literature*)

### Assistant Professors

Ali Behdad, Ph.D. (*English, Comparative Literature*)  
 C.P. Haun Saussy, Ph.D. (*Chinese, Comparative Literature*)  
 Shu-mei Shih, Ph.D. (*Chinese, Comparative Literature*)

## Lower Division Courses

The following courses are made up of selected masterpieces of world literature. Humanities 1A, 1B, 1C, 1D, 2A, 2B, 2C satisfy the humanities general education requirement in the College of Letters and Science.

**1A. World Literature: Antiquity to Early Middle Ages.** Lecture, three hours; discussion, one hour. Prerequisite: satisfaction of Subject A requirement. Not open for credit to students with credit for course 2A. Study of major texts in world literature, with emphasis on Western civilization. Texts include major works and authors such as *Iliad* or *Odyssey*, Greek tragedies, portions of the Bible, Virgil, Petronius, St. Augustine, and others such as *Gilgamesh* or *Tristan and Iseult*.

**1B. World Literature: Late Middle Ages to the 17th Century.** Lecture, three hours; discussion, one hour. Prerequisite: satisfaction of Subject A requirement. Not open for credit to students with credit for course 2B. Study of major texts in world literature, with emphasis on Western civilization. Texts include works and authors such as Chaucer's *Canterbury Tales*, Dante's *Divine Comedy*, Boccaccio's *Decameron*, Cervantes' *Don Quixote*, Shakespeare, Calderón, Molière, and Racine.

**1C. World Literature: Age of Enlightenment to the 20th Century.** Lecture, three hours; discussion, one hour. Prerequisite: satisfaction of Subject A requirement. Not open for credit to students with credit for course 2C. Study of major texts in world literature, with emphasis on Western civilization. Authors include Swift, Voltaire, Diderot, Rousseau, Goethe, Flaubert, Ibsen, Strindberg, Dostoevsky, Kafka, Joyce, Woolf, and Stevens.

**1D. Great Books from the World at Large.** Lecture, three hours; discussion, one hour. Prerequisite: satisfaction of Subject A requirement. Study of major literary texts usually overlooked in courses that focus only on the canon of Western literature. Texts from at least three of the following areas read in any given term: African, Caribbean, East Asian, Latin American, and Middle Eastern literature. P/NP or letter grading.

**2A. Survey of Literature: Antiquity to Early Middle Ages.** Lecture, two hours; discussion, two hours. Prerequisite: satisfaction of Subject A requirement. Not open for credit to students with credit for course 1A. Study of selected texts from antiquity to the Middle Ages, with emphasis on literary analysis and expository writing. Texts include works and authors such as *Iliad*, *Gilgamesh*, Greek tragedies, *Aeneid*, Petronius, St. Augustine, or *Tristan and Iseult*.

**2B. Survey of Literature: Late Middle Ages to the 17th Century.** Lecture, two hours; discussion, two hours. Prerequisite: satisfaction of Subject A requirement. Not open for credit to students with credit for course 1B. Study of selected texts from the Middle Ages to the 17th century, with emphasis on literary analysis and expository writing. Texts may include works and authors such as Chaucer, Dante's *Divine Comedy*, Cervantes' *Don Quixote*, Shakespeare, Calderón, Molière, and Racine.

**2C. Survey of Literature: Age of Enlightenment to the 20th Century.** Lecture, two hours; discussion, two hours. Prerequisite: satisfaction of Subject A requirement. Not open for credit to students with credit for course 1C. Study of selected texts from the Age of Enlightenment to the 20th century, with emphasis on literary analysis and expository writing. Texts may include works by authors such as Swift, Voltaire, Diderot, Rousseau, Goethe, Flaubert, Ibsen, Strindberg, Dostoevsky, Kafka, and James Joyce or Wallace Stevens.

## Upper Division Courses

**M101. Hebrew Literature in English — Literary Traditions of Ancient Israel: Bible and Apocrypha.** (Formerly numbered M106.) (Same as Jewish Studies M150A.) Lecture, three hours. Study of literary culture of ancient Israel through examination of principal compositional strategies of the Hebrew Bible and the Apocrypha (read in translation). P/NP or letter grading. Mr. Band

**102. Classical Tradition: Epic.** (Formerly numbered C107.) Seminar, three hours. Prerequisites: upper division standing, literature major, consent of instructor. Analysis of *Iliad*, *Odyssey*, *Aeneid*, *Gerusalemme Liberata*, and *Paradise Lost* both in relation to their contemporary societies and to literary traditions. Emphasis on how poets build on work of their predecessors. P/NP or letter grading. Ms. King

**103. Classical Tradition: Tragedy.** (Formerly numbered C111.) Seminar, three hours. Prerequisite: upper division standing or consent of instructor. Analysis of selected Greek dramas and their re-creations in Rome, in the Renaissance, and in the modern period. P/NP or letter grading. Ms. King

**C104. Satire.** (Formerly numbered C112.) Lecture, three hours. Prerequisite: upper division standing or consent of instructor. Examination of satire both in texts generally recognized as models of the genre as well as in others, including examples of satirical discourse. Special attention to two important literary problems: role played by authors and narrators in relation to treatment of characters before possible audiences and importance of contextual values in interpretation of satire. Concurrently scheduled with Comparative Literature C204. Undergraduates read all texts in translation. P/NP or letter grading.

**C105. Comic Vision.** Lecture, three hours. Prerequisites: upper division standing, literature major. Literary masterpieces, both dramatic and nondramatic, selected to demonstrate varieties of comic expression. May be concurrently scheduled with Comparative Literature C205. Undergraduates read all works in translation. P/NP or letter grading. Mr. Band

**106. Archetypal Heroes in Literature.** (Formerly numbered C129.) Seminar, three hours. Prerequisite: upper division standing. Survey and analysis of function and appearance of such archetypal heroes as Achilles, Ulysses, Prometheus, Oedipus, and Orpheus in literature from antiquity to the modern period. All works read in translation. P/NP or letter grading. Mr. King

**120. The Individual and Society in the Renaissance.** (Formerly numbered 116.) Lecture, three hours; discussion, one hour. Prerequisite: one course from Humanities 1A, 1B, 1C, 2A, 2B, 2C, or English 3, or consent of instructor. Explorations of a change in Western man's relationship to his world, himself, and his art; reading of such works as *Don Quixote*, Montaigne's *Essays*, *Gargantua and Pantagruel*, *The Praise of Folly*, *Utopia*. P/NP or letter grading. Mr. Allen

**C122. Renaissance Drama.** (Formerly numbered C145.) Lecture, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. Broad introduction to subject matter and types of plays in the Renaissance, with consideration of historical and literary influences on the plays. Readings include works of such dramatists as Tasso, Machiavelli, Lope de Vega, Racine, Jonson, Shakespeare. May be concurrently scheduled with Comparative Literature C222. Undergraduates read all works in translation. P/NP or letter grading. Mr. Braunmuller

**C140. Dramatic Theory and Criticism in German and English Romanticism.** (Formerly numbered C171.) Seminar, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. Generic conception of drama in critical essays of the Schlegels, Tieck, Jean Paul, Coleridge, De Quincey, and Hazlitt, with emphasis on role of the actor and the idea of dramatic action as discussed by the critics. May be concurrently scheduled with Comparative Literature C240. Undergraduates read all works in translation. P/NP or letter grading. Mr. Burwick

**C150. The 19th-Century Novel.** (Formerly numbered C175.) Seminar, three hours. Prerequisites: upper division standing, literature major. Comparative study of the 19th-century novel in England and on the continent. Novels selected so as to allow seminar to concentrate on a particular tradition or critical problem. May be concurrently scheduled with Comparative Literature C250. Undergraduates read all works in translation. P/NP or letter grading. Mr. Lehan, Ms. Re

**C151. Crisis of Authority.** (Formerly numbered C178.) Seminar, three hours. Prerequisite: upper division standing or consent of instructor. Darwin's *Origin of Species* undermines the notion of a traditional fatherly God and reflects a major transition between the 19th and 20th centuries. Threat to, or collapse of, a divinely author(ized) and male-dominated society appears in writers such as G. Eliot, Zola, Ibsen, Strindberg, Conrad, Hardy, Woolf, and Camus. May be concurrently scheduled with Comparative Literature C251. P/NP or letter grading. Mr. Shideler

**C152. Symbolist Tradition in Poetry.** (Formerly numbered C180.) Seminar, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. Study of symbolist tradition in 19th- and 20th-century English, French, and German poetry. May be concurrently scheduled with Comparative Literature C252. Undergraduates read all works in translation. P/NP or letter grading.

Mr. Shideler

**158. Colonial Encounters.** Seminar, three hours. Discussion of how a Western textual system restricts cultures of colonized peoples to an encounter with the European. As a means of understanding limits to a European frame of reference, reading of English literary works alongside their postcolonial counterparts. Investigation of how reversal of perspective affects the telling of a tale. P/NP or letter grading.

Ms. Sharpe

**159. Four Modern Dramatists.** (Formerly numbered 115.) Lecture, three hours. Study of several works by four major modern dramatists, focusing on understanding specific elements in each work and authors' possible interrelations. Pirandello, Beckett, and Pinter are read; fourth author is selected from Ionesco, Giraudoux, Cocteau. P/NP or letter grading.

Mr. Braummuller

**C160. Literature and the Visual Arts, 1700 to the Present.** Lecture, three hours. Prerequisite: upper division standing or consent of instructor. Knowledge of art history valuable but not required. Assuming that literature and the visual arts are in some degree expressions of cultural and philosophical patterns of eras, course studies relationships between primarily English writers from 1700 to the present and movements in painting, architecture, and sculpture. Interdisciplinary investigation of similarities and differences between the plastic and verbal arts in comparative study. May be concurrently scheduled with Comparative Literature C260. Undergraduates read all works in translation.

**C161. Fiction and History.** (Formerly numbered C176.) Seminar, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. Analysis of use of historical events, situations, and characters in literary works of the Renaissance and/or modern period. Texts and individual assignments range from Renaissance historical narratives (Italian humanists, Machiavelli) to 19th- and 20th-century novels by authors such as Stendhal, Verga, Tomasi di Lampedusa, Carpentier, and Kundera. Use of fictional methods by historians. Emphasis on how aesthetic, ideological, and political factors influence authors' choice and use of historical material. May be concurrently scheduled with Comparative Literature C261. P/NP or letter grading.

Ms. Re, Mr. Saussy

**M162. Interwar Central European Prose.** (Formerly numbered M125.) (Same as German M119G and Slavic M125.) Lecture, three hours. Analysis of selected novels, stories, plays, and essays of representative authors of the 1920s and 1930s in translation. Special attention to relation between literature and historical and ethnic concerns. P/NP or letter grading.

**C163. Crisis of Consciousness in Modern Literature.** (Formerly numbered C109.) Seminar, three hours. Prerequisites: upper division standing, literature major. Study of modern European and American works which are concerned both in subject matter and artistic methods with the growing self-consciousness of human beings and their society, focusing on works of Kafka, Rilke, Woolf, Sartre, and Stevens. May be concurrently scheduled with Comparative Literature C263. Undergraduates read all works in translation. P/NP or letter grading.

Ms. Komar

**C164. The Modern Continental Novel.** (Formerly numbered C185.) Seminar, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. Study of the modern novel's development from naturalism toward a mythic or symbolic level. Use of authors such as Gide, Proust, Mann, Joyce, Nabokov, and Grass to focus on development of themes such as primitivism vs. authority, change vs. stability, and the self-conscious narrative. Concurrently scheduled with Comparative Literature C264. Undergraduates read all works in translation. P/NP or letter grading.

Mr. Lehan

**M165. The Holocaust in Literature.** (Formerly numbered M187.) (Same as Jewish Studies M187.) Lecture, three hours. Prerequisite: History 191E, 191F, or 191G or equivalent. Investigation of how the Holocaust informs a variety of literary and cinema works and raises a wide range of aesthetic and moral questions. P/NP or letter grading.

Mr. Band

**M166. Postwar Central European Prose.** (Formerly numbered M126.) (Same as German M119H and Slavic M126.) Lecture, three hours. Analysis of selected novels, stories, plays, and essays of representative contemporary authors in translation. Special attention to relation between art and ideology. P/NP or letter grading.

**C167. Theory and Texts of the Fantastic.** (Formerly numbered C173.) Seminar, three hours. Prerequisites: upper division standing, literature major. Attempt to define the fantastic as a theoretical genre separate from the wider genre of fantasy. Critical texts by Todorov and Brooke-Rose. Primary texts by Hoffmann, Nerval, James, Poe, Borges, Casares, Cortazar, Landolfi, and Calvino. May be concurrently scheduled with Comparative Literature C267. Undergraduates read all works in translation. P/NP or letter grading.

Ms. Re

**168. Korean American Literature.** Seminar, three hours. Comprehensive introduction to Korean American literature, with emphasis on Korean American experience, problems of gender, race, and class, nationalism, generational relationships, and impact of traditional Korean culture on Korean American literature. P/NP or letter grading.

Ms. Shih (F)

**169. Continental African Authors.** (Formerly numbered 118.) Lecture, three hours. Prerequisite: one course from Humanities 1A, 1B, 1C, 2A, 2B, 2C, or English 3, or consent of instructor. Introduction to new set of African authors and attempt to discern similarities or differences they may have with major authors such as Achebe, Ngugi, Armah, Soyinka, etc. P/NP or letter grading.

**C170. Alternate Traditions: In Search of Female Voices in Contemporary Literature.** (Formerly numbered C184.) Seminar, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. Investigation of narrative texts by contemporary French, German, English, American, Spanish-American, African, and Asian women writers from a cross-cultural perspective. Common themes, problems, and techniques. May be concurrently scheduled with Comparative Literature C270. Undergraduates read all works in translation. P/NP or letter grading.

Ms. King, Ms. Komar, Ms. Re

**C172. The Postmodern Novel.** (Formerly numbered C186.) Seminar, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. Study of the postmodern novel as it developed out of modernism. Postmodernism defined in three different ways — philosophically, scientifically, and economically. Emphasis on relationship of recent novels to theories of structuralism and poststructuralism. Readings include authors such as Borges, Beckett, Nabokov, Pynchon, Fuentes, Grass, Böll, and Calvino. Concurrently scheduled with Comparative Literature C272. Undergraduates read all works in translation. P/NP or letter grading.

Mr. Lehan

**C173. Postmodernism and the Third World.** (Formerly numbered C190.) Seminar, three hours. Exploration of intersection between concepts of postmodernism and Third World culture and politics, including topics such as post-Marxism and revolution; historical thought; gender, ethnicity, imperialism, and their relationship to cultural politics; and recent Latin American literary production. Concurrently scheduled with Comparative Literature C273. P/NP or letter grading.

Mr. Behdad

**M174. Film and Literature of the Spanish-Speaking World.** (Formerly numbered M161.) (Same as Spanish M161.) Lecture, three hours. Exploration of perceptions of reality offered by different authors from Spain, Latin America, and the Chicano community. P/NP or letter grading.

Mr. Monleón

**190. Semiotics of Story and Film.** (Formerly numbered 182.) Seminar, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. Investigation of theoretical aspects of semiotics and their application to specific narratives in prose and film. P/NP or letter grading.

Mr. Haidu

**192. Walter Benjamin's Literary Criticism.** (Formerly numbered 183.) Seminar, three hours. Prerequisite: upper division standing. Some knowledge of German desirable but not required, as all texts are available in English translation. Walter Benjamin has emerged in recent years as one of the most influential critics of the 20th century. Course approaches his work primarily through a reading of his specifically literary criticism which occupies a central place in his work. P/NP or letter grading.

Mr. Weber

**C195. Heidegger, Language, and Literature.** (Formerly numbered C188.) Seminar, three hours. Knowledge of German not required. Close reading of essays contained in the collection *Poetry, Language, and Thought*, including "The Origin of the Work of Art," "The Thing," and "Language." Concurrently scheduled with Comparative Literature C295. P/NP or letter grading.

Mr. Weber

**C196. Derrida as a Reader of Heidegger.** (Formerly numbered C189.) Seminar, three hours. Retracing of certain of Derrida's attempts to read Heidegger, beginning with the essay, "Restitutions," in *Truth and Painting*. Other writings include *Of Spirit: Heidegger and the Question* and *Geschlecht*. May be concurrently scheduled with Comparative Literature C296. P/NP or letter grading.

Mr. Weber

## Indo-European Studies (Interdepartmental)

7349 Bunche Hall, (310) 825-4171

### Professors

Henning Andersen, Ph.D. (*Slavic Languages and Literatures*)

Raimo A. Anttila, Ph.D. (*Linguistics*)

Henrik Birnbaum, Ph.D. (*Slavic Languages and Literatures*)

Jesse L. Byock, Ph.D. (*Germanic Languages*)

Vyacheslav Vs. Ivanov, Ph.D. (*Slavic Languages and Literatures*)

Richard Janko, Ph.D. (*Classics*)

Bengt T.M. Löfstedt, Ph.D. (*Classics*)

Hartmut E.F. Scharfe, Ph.D. (*East Asian Languages and Cultures*)

Hanns-Peter Schmidt, Ph.D. (*Near Eastern Languages and Cultures*)

Marija Gimbutas, Ph.D., Emerita (*Slavic Languages and Literatures, Archaeology*)

Jaan Puhvel, Ph.D., *Emeritus (Classics, Indo-European Studies)*  
Terence H. Wilbur, Ph.D., *Emeritus (Germanic Languages)*

#### Associate Professor

Joseph F. Nagy, Ph.D. (*Celtic Languages and Literatures*)

#### Assistant Professor

Christopher M. Stevens, Ph.D. (*Germanic Languages*)

## Scope and Objectives

The prime aim of this graduate program is the integral study of Indo-European culture, based on comparative linguistics, archaeology, social structure, and religion. The Ph.D. in Indo-European Studies is offered with three alternative major emphases: Indo-European linguistics, Indo-Iranian or other specialized language area studies, and European and related archaeology.

## Ph.D. Degree

### Admission

Students admitted to graduate standing must have a B.A. degree with a major in an Indo-European language field (e.g., German, Slavic, Celtic, Romance languages, Latin, Greek), linguistics (with concentration in historical and comparative linguistics), anthropology, or archaeology. Letters of recommendation (at least two, preferably three or four) are required; Graduate Record Examination (GRE) scores are not required. Potential applicants may request a brochure by writing to the Indo-European Studies Program, c/o Department of Classics, 7349 Bunche Hall, UCLA, Los Angeles, CA 90024-1475.

Admission to the program itself constitutes admission to the doctoral program; a master's degree is not offered. Should deficiencies exist in prerequisites to specific work at the graduate level, you may be granted provisional admission and directed to remove those deficiencies in the initial period of enrollment.

### Major Fields or Subdisciplines

The Ph.D. in Indo-European Studies is offered with three alternative major emphases: (1) Indo-European linguistics; (2) Indo-Iranian or other specialized language area studies; (3) European and related archaeology.

### Foreign Language Requirement

French and German are required, one during the first year. A third language is added only when relevant to your field of specialization. Proficiency in a language may be demonstrated by (1) passing the Graduate School Foreign Language Test (GSFLT) with a score of 600 or better, (2) completing a level five course with a grade of B or better, or (3) passing a departmental reading examination.

## Course Requirements

The course requirements vary among the three major fields of specialization. General requirements for all students regardless of specialization include knowledge of Vedic Sanskrit and Homeric Greek, basic competence in Indo-European linguistics (including Indo-European Studies M150 and 210), mythology (e.g., Classics 168), and archaeology (including Indo-European Studies 131, 132). Additional requirements by field are as follows:

(1) *Linguistics* — An advanced seminar in comparative grammar, a minimum of four ancient Indo-European languages from different subbranches, and additional units in courses offered by the Linguistics Department (e.g., phonetics, structural linguistics) and related departments. These additional units should be selected in consultation with your adviser.

(2) *Indo-Iranian or Other Specialized Language Area* — An advanced seminar in comparative grammar, a minimum of two ancient Indo-European languages from different subbranches, and additional units in the area of specialization, to be selected in consultation with your adviser.

(3) *European and Related Archaeology* — A minimum of one ancient Indo-European language, an advanced seminar in European archaeology, a course in analytical methods in archaeology, and additional units in archaeology, anthropology, and related fields, to be selected in consultation with your adviser.

### Teaching Experience

Teaching experience is highly desired, but not available within the program and therefore is not required. The program works closely with its constituent departments in an attempt to provide some teaching experience.

### Qualifying Examinations

When you have completed the required coursework, a series of written examinations covering the major and minor fields are administered. These consist of translation and analysis of set texts from the ancient Indo-European languages and diagnostic examinations in the other fields. Following successful completion of the written examinations, the University Oral Qualifying Examination, based on the written examinations and the dissertation prospectus, is administered by the doctoral committee. It is intended to probe your grasp of the entire field. Should you fail either the written or oral examinations, the interdepartmental degree committee may allow re-examination. After successful completion of the written and oral examinations, you are advanced to doctoral candidacy and begin work on the dissertation.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

## Final Oral Examination

A final oral defense of the dissertation is optional with the doctoral committee.

## Upper Division Courses

**131. European Archaeology: Proto-Civilizations of Europe.** Survey of European cultures from beginning of the food-producing economy in the 7th Millennium B.C. to beginning of the Bronze Age in the 3rd Millennium B.C.

**132. European Archaeology: Bronze Age.** Prerequisite: course 131 or consent of instructor. Survey of European cultures from around 3000 B.C. to the period of destruction of the Mycenaean culture about 1200 B.C. Aegean area and rest of Europe.

**M150. Introduction to Indo-European Linguistics.** (Same as Linguistics M150.) Prerequisites: one year of college-level study (course 3 or better, eight units minimum) of either Greek or Latin and either German or Russian. Survey of Indo-European languages from ancient to modern times; their relationships and chief characteristics. Mr. Anttila (Sp)

**199. Special Studies (2 to 8 units).**

## Graduate Courses

**210. Indo-European Linguistics: Advanced Course.** Prerequisite: course M150 or equivalent. Comparative study of phonology, morphology, syntax, and lexicon. Problems in analysis and reconstruction. Mr. Anttila, Mr. Ivanov (F)

**250A-250B. European Archaeology.** Prerequisite: consent of instructor. Studies in ancient European archaeological materials and their relationship to the Near East, Western Siberia, and Central Asia. May be repeated for credit. In Progress grading.

**280A-280B. Seminars: Indo-European Linguistics.** Prerequisite: course 210. Selected topics in Indo-European comparative grammar for advanced graduate students. In Progress grading.

**596. Directed Individual Studies (2 to 8 units).**

**597. Preparation for Ph.D. Qualifying Examinations (2 to 8 units).**

**599. Research for Ph.D. Dissertation (2 to 8 units).**

## Related Courses in Other Departments

**Ancient Near East (Near Eastern Languages) 160A-160B.** Introduction to Near Eastern Archaeology

161A-161B-161C. Archaeology of Mesopotamia

260. Seminar: Ancient Near Eastern Archaeology

261. Practical Field Archaeology

**Anthropology 110.** World Archaeology

112. Old Stone Age Archaeology

115R. Strategy of Archaeology

M116Q. Dating Techniques in Environmental Sciences and Archaeology

183. History of Archaeology

**Archaeology 259.** Fieldwork in Archaeology

**Armenian (Near Eastern Languages) 130A-130B.** Elementary Classical Armenian

131A-131B. Intermediate Classical Armenian

132A-132B. Advanced Classical Armenian

**Classics 161.** Introduction to Classical Mythology

166A. Greek Religion

166B. Roman Religion

168. Introduction to Comparative Mythology

180. Introduction to Classical Linguistics

230A-230B. Language in Ancient Asia Minor

251A. Seminar: Classical Archaeology — Aegean Bronze Age

260. Topics in Ancient Religion

268. Seminar: Comparative Mythology



**English M111D. Celtic Mythology**

M111E. Survey of Medieval Celtic Literature

M111F. Celtic Folklore

211. Old English

216A-216B. Old Irish

217A-217B. Medieval Welsh

218. Celtic Linguistics

263. Celtic Literature

**Folklore and Mythology M112. Survey of Medieval Celtic Literature**

M122. Celtic Mythology

M126. Baltic and Slavic Folklore and Mythology

M127. Celtic Folklore

228. Seminar: Topics in Celtic Folklore and Mythology

**German (Germanic Languages) 230. Survey of Germanic Philology**

231. Gothic

232. Old High German

233. Old Saxon

245B. Germanic Antiquities

252. Seminar: Historical and Comparative Germanic Linguistics

**Greek (Classics) 240A-240B. History of the Greek Language**

242. Greek Dialects and Historical Grammar

243. Mycenaean Greek

**Indic (East Asian Languages) 110A. Elementary Sanskrit**

110B. Intermediate Sanskrit

110C. Advanced Sanskrit

115. Readings in Sanskrit

M222A-M222B. Vedic

230. Selected Readings in Sanskrit Texts

234A-234B. Introduction to Panini's Grammar

236A-236B. Pali and Prakrits

**Iranian (Near Eastern Languages) 169. Civilization of Pre-Islamic Iran**

170. Religion in Ancient Iran

190A-190B. Introduction to Modern Iranian Studies

M222A-M222B. Vedic

230A-230B. Old Iranian

231A-231B. Middle Iranian

**Latin (Classics) 240. History of the Latin Language**

242. Italic Dialects and Latin Historical Grammar

**Linguistics 103. Introduction to General Phonetics**

110. Introduction to Historical Linguistics

120A. Phonology I

120B. Syntax I

**Old Norse Studies (Germanic Languages) C140. Viking Civilization and Literature**

151. Elementary Old Norse

152. Intermediate Old Norse

245A. Germanic and Scandinavian Mythology

**Semitic (Near Eastern Languages) 140A-140B. Elementary Akkadian**

141. Advanced Akkadian

220A-220B. Ugaritic

**Slavic (Slavic Languages) 177. Baltic Languages and Cultures**

M179. Baltic and Slavic Folklore and Mythology

201. Introduction to Old Church Slavic

202. Introduction to Comparative Slavic Linguistics

241A-241B. Advanced Old Church Slavic

242. Comparative Slavic Linguistics

251. Introduction to Baltic Linguistics

## International Relations

4256 Bunche Hall, (310) 825-3862

### Scope and Objectives

The undergraduate specialization in international relations can only be taken jointly with a major in political science, and all requirements for the political science major must be met by or in addition to meeting the requirements of this program. Students completing the program receive a degree with a major in political science and specialization in international relations. The program is designed to serve the needs of (1) students desiring a general education focused on international affairs and (2) students preparing for graduate work in international affairs, whether in a social science or area study.

The program is also beneficial for (1) students planning careers (in business, law, journalism, or library service) with an international emphasis and (2) those preparing to teach social sciences in the secondary schools. These students should structure their programs primarily to meet the preparation requirements of the professional school or instructional credential of their choice.

Courses in management and administration, and in oral and written communications, ordinarily increase the career options of students in this program.

### Special Undergraduate Program

#### Preparation for the Specialization

*Required:* Political Science 20, 50, and two courses from 10, 30, 40, 70, 80; Anthropology 9 or 60; Economics 1 and 2, 5, or 100; Geography 3 or 5; History 1A-1B-1C or any three courses from 5A, 5B, 8A, 8B, 8C, 9A, 9C, 9D, 10A, 10B, 11A, 11B; Sociology 1 or 31.

#### Upper Division

The political science major should be completed as follows: any four upper division political science courses in each of Fields II and IV and two additional courses both in Field I, Field III, Subfield IIIa, or Subfield IIIb.

Other required social sciences courses include one course from Anthropology 161, M162P, 165, M166, 167, 171, 173Q, 174P, 174Q, 175P, 175Q, 175R, 175T, 175U, 177, Sociology 182, 183, 186, 187, 188, 189, 190; two courses from Economics 110, 111, 112, 180, 181A, 181B, 182, 190, 191, 192; one course from Geography 110, 121, 125, 128, 133, 140, 181, 182A, 182B, 183, 184, 185, 186, 187, 188, 189, 190; two courses from History 116A, 116B, 117A, 127A, 127B, 142A, 142B, 148C, 152A, 152B, 168.

Completion of the sixth quarter course (or equivalent as prescribed by the language department), with a grade of C or better, of any modern foreign language is also required. French 6, German 6, Spanish 25, and Russian 6 are most frequently offered in fulfillment of this requirement, but also refer to the offerings listed under African Languages, East Asian Languages and Cultures, Germanic Languages, Italian, Near Eastern Languages and Cultures, and Portuguese. Arabic, Chinese, French, German, Japanese, Russian, and Spanish are the languages of widest career utility in international affairs.

All courses must be taken for a letter grade.

### Area Focus

Students are advised but not required to concentrate their political science, geography, history, and language courses so as to achieve broad familiarity with one area, such as Africa, East Asia, Europe, Latin America, the Middle East, South Asia, or Southeast Asia.

For further information, contact the political science undergraduate counselor in the program office.

## Islamic Studies (Interdepartmental)

10286 Bunche Hall, (310) 825-1181

### Professors

Leonard Binder, Ph.D. (*Political Science*)Andras Bodrogliget, Ph.D. (*Near Eastern Languages and Cultures*)Herbert A. Davidson, Ph.D. (*Near Eastern Languages and Cultures*)Osman M. Galal, M.D., Ph.D. (*Community Health Sciences*)Richard Jovannian, Ph.D. (*History*)Nazir A. Jairazbhoy, Ph.D. (*Ethnomusicology and Systematic Musicology*)Nikki Keddie, Ph.D. (*History*)Afaf Marsot, D.Phil. (*History*)Ismail Poonawala, Ph.D. (*Near Eastern Languages and Cultures*)A. Jihad Racy, Ph.D. (*Ethnomusicology and Systematic Musicology*)Damodar R. SarDesai, Ph.D. (*History*)Stanford J. Shaw, Ph.D. (*History*)Stanley A. Wolpert, Ph.D. (*History; Distinguished Teaching Award*)Amin Banani, Ph.D., Emeritus (*Near Eastern Languages and Cultures, History*)Seeger A. Bonebakker, Ph.D., Emeritus (*Near Eastern Languages and Cultures*)Robert I. Burns, S.J., Ph.D., Emeritus (*History*)John G. Kennedy, Ph.D., Emeritus (*Anthropology, Psychiatry and Biobehavioral Sciences*)Georges Sabagh, Ph.D., Emeritus (*Sociology*)

### Associate Professors

Irene A. Bierman, Ph.D. (*Art History*)Gerry A. Hale, Ph.D. (*Geography*)Michael G. Morony, Ph.D. (*History*), ChairThomas Penchoen, Ph.D. (*Near Eastern Languages and Cultures*)

**Assistant Professor**

Hossein Ziai, Ph.D. (*Near Eastern Languages and Cultures*)

**Scope and Objectives**

The undergraduate major in this discipline is called Near Eastern studies. For details, see the program by that name later in this chapter.

The designation of this interdepartmental degree program is meant to convey the broadest cultural concern with peoples and places influenced by Islam, rather than a narrow approach to Islam as religion alone. Islam as a culture-forming force in history may be studied and understood through the literate sources of Islamic civilization and/or through systematic observation and examination of behavioral patterns and social relations of Muslim peoples. The commonality of an "idealized" and a "functional" or "practical" Islam does not preclude a multiple number of valid and varied approaches to Islamic studies. The program, with its core emphasis on the major languages of the Islamic Middle East, is intended to provide an internal view of the dynamics of Islamic culture.

The interdepartmental program for the Master of Arts and Ph.D. degrees in Islamic Studies is designed primarily for students desiring to prepare for an academic career. It may, however, be found useful for students seeking a general education and desiring a special emphasis in this particular area or for those who plan to live and work in this area, whose career will be aided by a knowledge of the people, languages, and institutions. (Such a career might be centered on teaching, research, business, engineering, journalism, librarianship, or government service.) Subject to the limitations of the program, the special course of studies is formulated for candidates according to their experience and requirements.

**Master of Arts Degree****Admission**

In addition to the general University requirements, a Bachelor of Arts degree in Near Eastern Studies or equivalent is required. The deadline for admission applications is March 1, by which time your admission file must be complete. Files are created during Winter Quarter for admission to the following Fall Quarter. The interdepartmental degree committee passes on your application for admission to the program. You are normally expected to have completed the equivalent of Arabic 102A-102B-102C or Iranian 102A-102B-102C or Turkic Languages 102A-102B-102C. In addition, you should have completed the equivalent of two years of Near Eastern history (premodern and modern) and at least one year of a European language, preferably French or German. Some coursework in Islamic culture and institutions may be applied toward the history requirement. Deficiencies in any of these prerequisites have to be removed by taking the

appropriate courses without credit toward the advanced degree. No special application form is required.

The Graduate Record Examination (GRE) is required of graduates of American universities and recommended for international applicants. No screening examination is required.

A score of 560 on the Test of English as a Foreign Language (TOEFL) is required of all applicants whose native language is not English and who have not attended English-speaking universities.

A departmental brochure may be obtained by writing to the Von Grunebaum Center for Near Eastern Studies, 10286 Bunche Hall, UCLA, Los Angeles, CA 90024-1480.

**Major Fields or Subdisciplines**

Arabic, Persian, Turkish, history of the Near East, political science, anthropology, economics, geography, sociology, Islamic art and architectural history, Near Eastern music.

**Foreign Language Requirement**

You are required to show proficiency in either French or German. You are expected to (1) pass the Graduate School Foreign Language Test (GSFLT) reading examination with a score of 550 or better, (2) pass a departmentally administered European language examination by the end of your third term in residence, or (3) complete two years of language courses at UCLA with grades of B or better.

**Course Requirements**

A minimum of nine courses is required, five of which must be at the graduate level. You must take no fewer than four courses on the appropriate level in one Near Eastern language of your choice, and no fewer than five courses selected from the relevant upper division and graduate courses in history, political science, or any of the other fields represented in the program. The selection must be limited to two of these disciplines. The omission of history may be approved only in exceptional cases. Eight units of 500-series courses may be applied toward the total course requirement, as well as toward the minimum graduate course requirement, provided they are not in the same discipline. If you intend to proceed to the Ph.D. in Islamic Studies, you should show proficiency in a second Near Eastern language (Arabic, Persian, Turkish). One of the two languages required for the Ph.D. is Arabic.

**Comprehensive Examination Plan**

The thesis plan is not available in this program. You must pass written examinations in one Near Eastern language, one in its literature, one in the history of the Near East, and in one of the other nonlanguage major fields or subdisciplines listed above. The examinations are constructed by the instructor responsible for each discipline. Reexamination in exceptional cases is determined by the interdepartmental

degree committee. The examiner or examiners are appointed by the chair of the interdepartmental degree committee.

**Ph.D. Degree****Admission**

Students intending to work for the Ph.D. in Islamic Studies are normally expected first to fulfill all requirements for the M.A. degree. Those who enter the program with an M.A. from another university should have attained a level of preparation in languages, history, and social sciences equivalent to that required for the M.A. at UCLA. In addition, students are expected to show proficiency in a second Near Eastern language (one of the two required languages is Arabic.) Those who have not done so should make up any deficiencies by taking the appropriate courses without credit toward the degree. No special application form is required, but applications must be accompanied by three letters of recommendation.

The Graduate Record Examination (GRE) is required of graduates of American universities and recommended for international applicants.

A departmental brochure may be obtained by writing to the Von Grunebaum Center for Near Eastern Studies, 10286 Bunche Hall, UCLA, Los Angeles, CA 90024-1480.

**Major Fields or Subdisciplines**

Arabic, Persian, Turkish, history, anthropology, economics, geography, sociology, political science, Islamic art and architectural history, Near Eastern music.

**Foreign Language Requirement**

At the beginning of your first term in residence, you must present to the chair of the interdepartmental degree committee a written statement explaining your preparation in one of the two modern languages required by the University (generally French and German). You are expected to (1) pass the Graduate School Foreign Language Test (GSFLT) reading examinations with scores of 550 or better, (2) pass departmentally administered European language examinations by the end of your second year in residence, or (3) complete two years of language courses at UCLA with grades of B or better. Any option may be selected for either language. For work in some fields, reading knowledge of Italian, Spanish, or Russian may be substituted for one of the above European languages after satisfactory advisement.

**Course Requirements**

If you are entering directly into the Ph.D. program, course requirements are the same as in the M.A. program. Beyond this, you continue advanced courses in your two Near Eastern languages, in Near Eastern history, and in one of the social sciences, on specific advisement of the interdepartmental degree committee.

## Qualifying Examinations

Written qualifying examinations in four fields are required: two Near Eastern languages and literatures as approved by the advisory committee, the whole range of Near Eastern history, and one of the other nonlanguage major fields or subdisciplines listed above. After successfully completing the written examinations, you must pass the University Oral Qualifying Examination in order to be advanced to doctoral candidacy. Reexamination in any field is at the discretion of the doctoral committee in consultation with the chair of the program.

Research proposals, dossiers, research papers, propositions, etc., are not permitted as alternatives to the written qualifying examinations.

## Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

## Final Oral Examination

With the approval of the doctoral committee at the time of the oral qualifying examination, the final oral examination may be waived.

## Islamic Studies Course List

### Anthropology 130. Study of Culture

150. Study of Social Systems

M154. Women in Culture and Society

156. Comparative Religion

161. Development Anthropology

167. Urban Anthropology

215. Field Training in Archaeology

230P. Ethnology

230Q. Cultural Anthropology

232Q. Myth and Ritual

273. Cultures of the Middle East

**Arabic (Near Eastern Languages)** 102A-102B-102C. Intermediate Literary Arabic

111A-111B-111C. Elementary Spoken Egyptian Arabic

112A-112B-112C. Advanced Spoken Egyptian Arabic

113A-113B-113C. Elementary Spoken Levantine Arabic

114A-114B-114C. Spoken Moroccan Arabic

120. Islamic Texts

130. Classical Arabic Texts

132. Philosophical and Kalam Texts

141. Modern Arabic Literature

150A-150B. Survey of Arabic Literature in English

199. Special Studies in Arabic

220. Seminar: Islamic Texts

230. Medieval Literary Texts

240. Seminar: Arab Historians and Geographers

250. Seminar: Arabic Literature

596. Directed Individual Study

597. Examination Preparation

599. Ph.D. Dissertation Research and Preparation

**Archaeology** 259. Fieldwork in Archaeology

596. Individual Studies for Graduate Students

597. Preparation for Ph.D. Qualifying Examinations

**Armenian (Near Eastern Languages)** 130A-130B. Elementary Classical Armenian

131A-131B. Intermediate Classical Armenian

132A-132B. Advanced Classical Armenian

210. History of the Armenian Language

220. Armenian Literature of the Golden Age (A.D. 5th Century)

**Art History** 104A. Western Islamic Art

104B. Eastern Islamic Art

C104C. Problems in Islamic Art

105E. Byzantine Art

213. Advanced Studies in Islamic Art

C214. Problems in Islamic Art

**Berber (Near Eastern Languages)** 101A-101B-101C. Elementary Berber

102A-102B-102C. Advanced Berber

130. The Berbers

199. Special Studies in Berber Languages

**Classics** M170. Power and Imagination in Byzantium

**Ethnomusicology and Systematic Musicology** 147. Survey of Classical Music in India

240. Music of Arabic-Speaking Near East

241. Music of Iran and Other Non-Arabic-Speaking Communities

248A-248B. Classical Music of India

**French** 121A. Contemporary Francophone Literature: French-African Literature

221A. French-African Literature: Introduction to Study of French-African Literatures

221C. French-African Literature: French-African Literature of Berbero-Sudanese and Arabo-Islamic Africa

257A-257B. Studies in French-African Literature

**Geography** 187. Middle East

188. Northern Africa

287. Middle East

288. Northern Africa

**Greek (Classics)** 231A-231B-231C. Seminars: Later Greek and Byzantine Literature

**Hebrew (Near Eastern Languages)** 230. Seminar: Medieval Hebrew Literature

231. Texts in Judeo-Arabic

**History** 106A-106B-106C. Survey of the Middle East from 500 to the Present

107A-107B. Islamic Civilization

108A-108B. History of the Arabs

109A-109B. History of North Africa from the Moslem Conquest

110A-110B. Iranian History

111A-111B. History of the Turks

123A-123B. Byzantine History

188B-188C. History of British India I, II

190A-190B. History of Southeast Asia

204A-204B. Seminars: Near and Middle Eastern History

205A-205B. Seminars: Medieval Middle Eastern History

206A-206B. Seminars: Social History of the Middle East

209A-209B. Seminars: Ottoman and Modern Turkish History

216A-216B. Seminars: Byzantine History

596. Directed Studies

597. Directed Studies for Graduate Examinations

599. Ph.D. Research and Writing

**Iranian (Near Eastern Languages)** 102A-102B-102C. Intermediate Persian

103A-103B-103C. Advanced Persian

140. Contemporary Persian Belles Lettres

141. Contemporary Persian Analytical Prose

150A-150B. Survey of Persian Literature in English

169. Civilization of Pre-Islamic Iran

170. Religion in Ancient Iran

190A-190B. Introduction to Modern Iranian Studies

199. Special Studies in Iranian

220A-220B. Classical Persian Texts

221. Rumi, Mystic Poet of Islam

250. Seminar: Classical Persian Literature

251. Seminar: Contemporary Persian Literature

596. Directed Individual Study

597. Examination Preparation

599. Ph.D. Dissertation Research and Preparation  
**Islamic (Near Eastern Languages)** 110. Introduction to Islam

596. Directed Individual Study

597. Examination Preparation

598. M.A. Thesis Research and Preparation

599. Ph.D. Dissertation Research and Preparation

**Linguistics** 220. Linguistic Areas

225. Linguistic Structures

**Near Eastern Languages** 200. Bibliography and Method of Near Eastern Languages and Literatures

210. Survey of Afro-Asiatic Languages

M241. Folklore and Mythology of the Near East

290. Seminar: Paleography

596. Directed Individual Study

597. Examination Preparation

599. Ph.D. Dissertation Research and Preparation

**Philosophy** 104. Topics in Islamic Philosophy

**Political Science** 132A-132B. International Relations of the Middle East

164. Government and Politics in the Middle East

165. Government and Politics in North Africa

C245. Middle Eastern Studies

**Semitics (Near Eastern Languages)** 215B. Syriac

**Sociology** 134. Culture and Personality

187. Population and Society in the Middle East

**Turkic Languages (Near Eastern Languages)** 101A-101B-101C. Elementary Turkish

102A-102B-102C. Advanced Turkish

111A-111B-111C. Elementary Uzbek

112A-112B-112C. Advanced Uzbek

114A-114B-114C. Bashkir

160. Cultural History of the Turks

180. Modern Turkic Languages and Peoples

199. Special Studies in Turkic Languages

210A-210B-210C. Introduction to Ottoman

211. Ottoman Diplomats

220A-220B-220C. Classical Uzbek (Chagatay)

230A-230B-230C. Historical and Comparative Survey of Turkic Languages

235A-235B. Middle Turkic

240A-240B-240C. Advanced Ottoman

250A-250B-250C. Islamic Texts in Chagatay

280A-280B. Seminars: Modern Turkish Literature

290A-290B. Seminars: Classical Turkic Literature

596. Directed Individual Study

597. Examination Preparation

599. Ph.D. Dissertation Research and Preparation

## Italian

340 Royce Hall, (310) 825-1940

### Professors

Luigi Ballerini, Dottore in Lettere, *Chair*

Franco Betti, Ph.D.

Marga Cottino-Jones, Ph.D., Dottore in Lettere

Edward F. Tuttle, Ph.D.

Giovanni Cecchetti, Dottore in Lettere, *Emeritus*

Pier-Maria Pasinetti, Ph.D., Dottore in Lettere, *Emeritus*

**Associate Professor**

Lucia Re, Ph.D., Dottore in Lettere

**Lecturers**Mirella Cheeseman, Dottore in Legge  
Maria Grazia Pellegrini, Dottore in Lettere  
Althea Reynolds, B.A., *Emerita***Scope and Objectives**

Italian art and letters provide an invaluable key to understanding many facets of European civilization. Examined in its own right or studied comparatively, Italian culture offers unmatched rewards. The UCLA faculty views transmitting the Italian language as inseparable from transmission of the culture, so students consider in depth virtually all aspects of Italian civilization. After their linguistic initiation, ideally including a year abroad, students may pursue advanced studies in the department exclusively and through a wide range of interdisciplinary programs.

Bachelor of Arts degrees are offered in Italian and in Italian and Special Fields. Graduate study leads to the Master of Arts degree in Italian (with specializations in literature and language) and to the Ph.D. (literature specialization). In addition, the department participates extensively in the interdepartmental graduate programs in Romance Linguistics and Literature, Comparative Literature, and Folklore and Mythology.

**Bachelor of Arts in Italian**

The program of studies leading to the Bachelor of Arts in Italian consists of two distinct phases: preparation in the language and study of the literature. While literature courses constitute the bulk of the program, good knowledge of the language is prerequisite to all upper division literature courses credited toward the major in Italian. The use of Italian is stressed at all levels of study. Detailed information on programs and specific degree requirements is available in the department publication, *Programs in Italian Studies*, and in the department office.

**Preparation for the Major**

*Required:* Italian 1, 2, 3, 4, 5, 25, or equivalent.

**The Major**

*Required:* Fourteen upper division courses out of 16 courses regularly offered every year or every other academic year, including Italian 102A-102B-102C, 113A-113B, 130, 190. An additional seven are to be selected from courses 114A through 122.

Three upper division courses from other departments are strongly recommended, as follows: History 132A or 132B, and English 110. Also recommended: Art History 106A, 106B, or 106C; upper division courses in another literature and philosophy and a second language (Latin, French, Spanish, or German, at least on level three). Programs must be organized in consultation with the departmental undergraduate adviser.

**Study in Italy**

You are encouraged to spend up to one year in Italy either to (1) study with an education abroad program or (2) study in an Italian university. You are also urged to take advantage of summer language workshops and study programs, either at American campuses or in Italy. The Department of Italian offers an intensive, eight-week summer Italian studies program. For information on *Casa Italiana*, contact the department or the Summer Sessions Office, 1147 Murphy Hall.

**Honors Program**

Majors with an overall grade-point average of 3.25 and a 3.5 GPA or better in Italian are eligible to participate in the honors program. Prerequisites: Italian 102A-102B-102C.

Candidates select three upper division literature courses in which additional readings are required. In the last term of your senior year, you are required to write a thesis on a subject related to one of the three above-mentioned courses. The average for the three courses should not fall below A-. Applications should be made during the last term of your junior year.

**Bachelor of Arts in Italian and Special Fields**

Study programs fulfilling requirements for the major have been developed with the Departments of Anthropology, Art, Art History, Classics (Latin), Design, English, Film and Television, French, History, Linguistics, Music, Philosophy, Political Science, Spanish and Portuguese, and Theater. Consult the Italian undergraduate adviser for requirements in the various fields of specialization.

**Preparation for the Major**

*Required:* Italian 1, 2, 3, 4, 5, or equivalent, plus additional required courses associated with the field of specialization selected in consultation with the undergraduate adviser.

**The Major**

*Required:* Fourteen upper division courses, seven of which must be in Italian. Italian 102A-102B-102C are required, while the remaining four may be selected from courses 113A through 122 as determined by your area of specialization. The other seven courses are to be selected from offerings in another department, as determined by the field of specialization.

Study Lists each term must be planned in consultation with the undergraduate adviser. Courses are assigned in accordance with your needs as determined by the area of specialization pursued. In certain cases, as many as two courses (eight units) at the graduate level may be applied toward the 14-course minimum requirement.

**Master of Arts Degree****Admission**

Three letters of recommendation should be sent to the Graduate Adviser, Department of Italian, 340 Royce Hall, UCLA, Los Angeles, CA 90024-1535.

Files of prospective graduate students meeting the University minimum requirements are screened by the departmental committee on admissions. Because the department offers the master's degree as a step toward the Ph.D. degree, all students admitted to the M.A. program are designated as "first-stage doctoral students" in order to distinguish them from students in terminal master's degree programs. This is for administrative purposes only and has no bearing on your acceptance into the program if you do not indicate on the application that your final degree objective is the Ph.D. Admission on a provisional basis may be recommended in case of deficiencies in preparation.

**Major Fields or Subdisciplines**

The M.A. degree is available with specializations in Italian literature and language.

**Foreign Language Requirement**

Reading knowledge of one other foreign language approved by the graduate adviser or successful completion of courses through at least level three is required. This requirement must be met at least one term before the comprehensive examination.

**Course Requirements***Italian Literature Specialization —*

(1) For the thesis plan, 12 courses are required, including Italian 200A, 200B, 200C, 205B, and 205C. At least nine courses must be in the 200 series.

(2) For the comprehensive examination plan, 12 courses are required, including Italian 200A, 200B, 200C, 205B, and 205C. The other eight courses must be distributed in three main literary periods — Middle Ages, Renaissance, modern (at least two courses in each period). Three of these courses may be upper division if approved by the graduate adviser. Related courses in other departments, such as History 205A-205B and Art History 230, are strongly recommended.

*Italian Language Specialization —*

(1) For the thesis plan, 12 courses are required, including Italian 200A, 200B, 200C, 259A-259B, Latin 232, and Linguistics 140. At least nine courses must be in the 200 series.

(2) For the comprehensive examination plan, 12 courses are required, including Italian 130, 200A, 200B, 200C, 259A-259B, and Latin 232 or Italian 210A or both. The others should be courses on the Middle Ages (seminar on Dante strongly recommended), Renaissance, and modern times.

No 500-series courses may be applied toward the M.A. course requirements.

### Thesis Plan

This plan is recommended for research-oriented students of exceptional merit. If you have completed your first year of graduate work with at least a 3.7 grade-point average, you may be nominated by one of the faculty members of the department for application to the thesis plan.

At this point you must have completed Italian 200A, 200B, 200C, 205B, 205C, and at least two other graduate courses in Italian. On acceptance, the guidance committee helps you select six more graduate courses in preparation for the thesis.

The thesis must be at least 50 pages long and follow the rules and style of the UCLA Ph.D. dissertation regulations. It must be submitted in your sixth quarter of graduate work. After completion of the thesis, you must pass an oral examination testing your knowledge in the field of the thesis and your general competence in Italian literature.

### Comprehensive Examination Plan

In general, the department favors the comprehensive examination plan, which consists of a minimum four-hour written examination to be given before the final examination period in Fall and Spring Quarters. The examination tests your general competency and does not have major and minor fields of emphasis. After the written examination, you are required to take an oral examination. In case of failure, you may be reexamined once, subject to approval by the examination committee and the chair of the department.

### Ph.D. Degree

#### Admission

Three letters of recommendation from professionals in the field of Italian studies should be sent to the Graduate Adviser, Department of Italian, 340 Royce Hall, UCLA, Los Angeles, CA 90024-1535.

Prerequisite for entering the department's doctoral program is an M.A. in Italian literature from UCLA or another university in the U.S. or the equivalent. Students with a master's degree from another institution, or the equivalent, are required to pass part 1 of the Ph.D. qualifying examinations by the end of their third term in residence. They should expect to take part 2 of the examinations after approximately eight terms.

Students admitted to the Ph.D. program without the M.A. degree must take the qualifying examinations (part 2) at the end of the twelfth term in residence, carrying a normal course load.

Students holding the M.A. from UCLA normally take part 2 of the qualifying examinations at the end of their sixth term in residence.

### Major Fields or Subdisciplines

Two centuries of Italian literature in the medieval, Renaissance and baroque, or modern area comprise the major fields, while two centuries of Italian literature from any of these areas make up the minor fields.

You may select a major in a literary genre or a minor outside the department, provided that it relates to your major field of specialization and has the department's approval.

### Foreign Language Requirement

This requirement is normally met by passing courses through level three in at least two of the following languages: Latin, French, German, Spanish (subject to departmental approval). A foreign language used to satisfy the requirement for the master's degree in Italian may be applied toward fulfillment of this requirement. The language requirement must be satisfied before taking part 2 of the qualifying examinations, either by Graduate School Foreign Language Test (GSFLT) or departmental examination or by petition for course credit to the Graduate Division.

### Course Requirements

In addition to those required for the master's degree, at least 10 other quarter courses, of which no more than two 596 courses may apply, are required. You also take such courses as your guidance committee may prescribe for the qualifying examinations (such as Italian 596 or 597). All courses from Italian 201 on, except 205B-205C, may be applied toward the Ph.D. degree.

### Qualifying Examinations

The comprehensive examination for the M.A. in Italian at UCLA corresponds to part 1 of the Ph.D. qualifying examinations.

The department also requires both written and oral qualifying examinations (part 2), which must be taken during the same academic year, although not necessarily during the same term. Normally taken six terms after the M.A. degree, the written examination consists of two parts: an eight-hour examination in your major field and a six-hour examination in your minor field. Additionally, a two-hour University Oral Qualifying Examination is required for advancement to doctoral candidacy. A summary of requirements entitled "Regulations for the Ph.D. Examination" is available in the department. In case of failure, you may be reexamined on unanimous approval of the guidance committee, after at least one academic term of additional residence.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Final Oral Examination

After acceptance of the dissertation in its final form, your doctoral committee may require that you take an oral examination which covers principally the field within which the dissertation falls.

### Lower Division Courses

Enrollment in the Italian open language laboratory is required of all students in Italian 1, 1A, 2, 2A, and 3.

**1. Elementary Italian — Beginning.** Lecture, five hours; laboratory, one hour.

Mrs. Cheeseman in charge

**1A. Elementary Italian — Accelerated (8 units).** Lecture, 10 hours; laboratory, two hours. Designed for those students having capacity and desire to learn the language at a much faster pace than normal. Encompasses material ordinarily intended for courses 1 and 2.

Mrs. Cheeseman in charge

**1G. Special Reading Course.** Readings, three hours. Open to graduate students in other fields. Preparation for Graduate Division foreign language reading requirement. S/U grading.

**2. Elementary Italian — Continued.** Lecture, five hours; laboratory, one hour. Prerequisite: course 1 or one year of high school Italian.

Mrs. Cheeseman in charge

**2A. Elementary Italian — Accelerated (Continued) (8 units).** Lecture, 10 hours; laboratory, two hours. Prerequisite: course 1A or 2 or two years of high school Italian. Designed for those students having capacity and desire to learn the language at a much faster pace than normal. Encompasses material ordinarily intended for courses 3 and 4.

Mrs. Cheeseman in charge

**2G. Special Reading Course.** Readings, three hours. Open to graduate students in other fields. Preparation for Graduate Division foreign language reading requirement.

**3. Elementary Italian — Continued.** Lecture, five hours; laboratory, one hour. Prerequisite: course 2 or two years of high school Italian.

Mrs. Cheeseman in charge

**3A. Intermediate Italian — Accelerated (8 units).** Lecture, six hours; laboratory, two hours. Prerequisite: course 2A or 3 or three years of high school Italian. Designed for those students having capacity and desire to learn the language at a much faster pace than normal. Encompasses material ordinarily intended for courses 4 and 5.

Mrs. Cheeseman in charge

**4. Intermediate Italian.** Lecture, five hours; laboratory, one hour. Prerequisite: course 3 or three years of high school Italian.

Mrs. Cheeseman in charge

**5. Intermediate Italian.** Lecture, five hours; laboratory, one hour. Prerequisite: course 4 or four years of high school Italian.

Mrs. Cheeseman in charge

**7. Elementary Italian Conversation.** Lecture, five hours (first six-week session). Encompasses conversational material included in course 1, with emphasis on traveler's vocabulary. (Sum)

**8A-8B-8C. Italian Conversation (2 units each).** Prerequisite: consent of instructor. Intended for students who have taken three to six terms of language instruction and have developed considerable skills in Italian. Designed to further improve students' spoken proficiency through constant exposure and practice of the language. Each course may be repeated once for credit.

Mrs. Cheeseman in charge

**25. Advanced Italian.** Lecture, five hours. Prerequisite: course 5. Advanced grammar and composition course with readings from select literary works.

Mrs. Cheeseman in charge

**42A-42B. Italian Civilization or Italy through the Ages.** Lecture, three hours. General survey of history, literature, art, music, and architecture audiovisually illustrated, with emphasis on Italy's cultural contributions to Western civilization:

**42A.** From Origins through the Renaissance.

Mrs. Cottino-Jones, Mr. Tuttle

**42B.** From the Enlightenment to Modern Italy.

**46. Italian Cinema and Culture.** Lecture, two hours; discussion, one hour; film screenings, two to three hours. Survey of development of Italian cinema and culture from the 1900s to the present through analysis of principal aesthetic, literary, artistic, and philosophical movements in Italy as reflected in works of the nation's filmmakers and writers.

Mrs. Cottino-Jones, Ms. Re

**50A-50B. Masterpieces of Italian Literature.** Lecture, three hours:

**50A.** From Its Origins to End of the Renaissance. Study of selected works by major writers of the period, including Dante, Petrarch, Boccaccio, Poliziano, Ariosto, Machiavelli, Castiglione.

**50B.** From the Baroque Period to the Present. Study of selected works by major writers of the period, including Tasso, Bruno, Vico, Parini, Alfieri, Foscolo, Leopardi, Manzoni, Verga, Pirandello, Svevo, Moravia, Ungaretti, Montale.

## Upper Division Courses

Sixteen quarter units in Italian or equivalent are required for admission to any upper division course. Upper division courses for the majors are conducted in Italian.

**102A-102B-102C. Italian Cultural Experience.** Lecture, three hours. Study of cultural development of Italy conducted especially with a view to contemporary situations. **102A.** From Disruption of Roman Unity to Feudal and Communal Society and Culture; **102B.** From Renaissance Civilization to the Baroque Age; **102C.** Historical and Cultural Issues from the Age of Enlightenment to Our Day.

**105. Tradition and Innovation in Italian Culture.** Lecture, three hours. Italy's basic social structures and cultural institutions delineated through their historical development and as they are manifest in stresses to which the industrializing state currently is subject.

**110A-110B. Divine Comedy in English.** Lecture, three hours.

**113A-113B. Dante's Divina Commedia.** Lecture, three hours. Focus on *Divine Comedy*. Selected readings from the text integrated with relevant information on scholasticism, classical tradition, medieval literature and poetics, and sociopolitical structure of Dante's world. **113A.** General Introduction and Readings from *Inferno*; **113B.** Readings from *Purgatorio* and *Paradiso*.

**114A-114B. Italian Literature of the Middle Ages.** Lecture, three hours. Emphasis on *Stil Novo*, Dante's minor works, Petrarch, and Boccaccio.

Mrs. Cottino-Jones, Mr. Tuttle

**116A-116B. Italian Literature of the Renaissance.** Lecture, three hours. Emphasis on Lorenzo de' Medici, Poliziano, Castiglione, Machiavelli, Ariosto, Tasso.

Mr. Betti

**118. Italian Literature of the 18th Century.** Lecture, three hours. Emphasis on Goldoni, Parini, Alfieri.

Mr. Betti

**119. Italian Literature of the 19th Century.** Lecture, three hours. Survey of the Romantic age as it expresses values and national aspirations of 19th-century Italy. Emphasis on the innovative approach to poetry as seen in works of Foscolo and Leopardi and to sociohistorical novels of Foscolo, Manzoni, and Verga.

Mr. Betti, Ms. Re

**120. Italian Literature of the 20th Century.** Lecture, three hours. Brief introduction to Italian literature after unification of the country, followed by concentration on selected writers seen in their political, social, and artistic contexts.

Mr. Ballerini, Ms. Re

**121. Italian Cinema.** Lecture, three hours. Comparative study of specific literary works and their translations into films and of different techniques in the two forms of expression. Texts include literary works, screenplays, and works on literary and film theory.

Mrs. Cottino-Jones

**122. Italian Theater.** Lecture, three hours. Emphasis on what is alive today (read and performed) in Italian theater. Texts range from the Renaissance to the present.

Ms. Re

**130. Advanced Grammar and Composition within a Literary Context.** Lecture, three hours. Prerequisite: course 25. Study in depth of idiomatic phenomena of the language from both grammatical and syntactical points of view within a literary context.

Mrs. Cheeseman

**131. Reading and Reciting.** Lecture, three hours. Prerequisite: consent of instructor based on sufficient knowledge of Italian. Emphasis on diction, interpretation, and performance of one-act plays as vehicles for perfection of pronunciation, comprehension, and fluency. May be repeated twice for credit.

**M140. From Boccaccio to Basile (in English).** (Same as Folklore M140.) Lecture, three hours. Study of origins and development of the Italian novella in its themes, structure, historical context, and European ramifications. Designed for students in other departments who wish to become acquainted with either the premises or growth of similar literary genres. Also intended for students majoring in folklore and mythology, who are given insight into Italian popular tales when these (as in the case of Boccaccio) were translated into highly sophisticated literary forms, as well as when (as in the case of Basile) they become embedded into the folk tradition of the Western world.

Mrs. Cottino-Jones

**150. Modern Italian Fiction in Translation.** Lecture, three hours.

Mr. Ballerini, Ms. Re

**M158. Women in Italian Culture.** (Same as Women's Studies M158.) Lecture, three hours. Designed with intent of examining role that women have played in Italian society. Concentration alternatively on the world of medieval and Renaissance "matriarch" and on "liberated" women of our times. Historical and political documents and social and religious taboos presented and discussed, together with other data derived from literature and art. Italian majors required to read texts in Italian and to prepare papers written in Italian.

Mrs. Cottino-Jones, Ms. Re

**190. History of the Italian Language.** Lecture, three hours. Main forces which have shaped literary or standard Italian and specific ways in which the language has evolved. Tracing of its changing relations with other European languages and survey of effects wrought by historical events, changes in taste, and altered social functions.

Mr. Tuttle

**195. Special Fields Research (2 units).** Limited to senior Italian and special fields majors. Unscheduled tutorial in which paper (15 to 20 pages) is to be written in either Italian or English which requires students to unify and synthesize their experience of combining two disciplines of study. Paper graded by ad hoc committee of faculty from department, with the chair in charge.

**199. Special Studies (2 to 4 units).** Prerequisite: consent of instructor. Course of independent studies for advanced undergraduates who wish to pursue a special research project under direction and close supervision of a faculty member.

## Graduate Courses

**200A. Readings in Italian Literature.** Lecture, three hours. Prerequisite: graduate standing. Literature of the generation dominated by the Franciscan movement, proceeding through culture of Frederick II's court to the three classics of the 14th century — Dante, Petrarch, and Boccaccio. Early humanists, post-classic generation, and cultural booming under Lorenzo il Magnifico.

**200B. Readings in Italian Literature.** Lecture, three hours. Prerequisites: course 200A, graduate standing. Literature of the High Renaissance of central Italy in its three most popular genres (lyric poetry, chivalric poem, and theater), proceeding through Counter-Reformist culture, especially of northern and southern Italy. Main Enlightenment figures and cultural evolution stemming from them.

**200C. Readings in Italian Literature.** Lecture, three hours. Prerequisites: course 200B, graduate standing. Literature of the Romantic era, proceeding through study of literary figures of the Italian "Risorgimento." Various "novecentisti" movements, literature between the two wars, and contemporary generation.

**201. Bibliography and Methods of Research.** Lecture, three hours.

**205A-205B-205C. Methods of Literary Criticism.** (Formerly numbered 205A-205B.) Lecture, three hours. **205A.** Brief history of literary criticism. **205B.** Presentation, discussion, and application of basic currents of criticism from stylistics to structuralism. **205C.** Prerequisite: course 205B or consent of instructor. Presentation, discussion, and application of contemporary approaches from structuralism to deconstruction, new historicism, and feminist criticism.

Mrs. Cottino-Jones, Ms. Re

**210A-210B-210C. Early Italian Literature.** Lecture, three hours:

**210A.** Origins of Italian Language and Early Texts.

Mr. Tuttle

**210B.** *Scuola Siciliana* and Early Poetry in Central and Northern Italy.

Mr. Tuttle

**210C.** *Dolce Stil Novo*.

**M211. Traditional Festivals and Festive Events.** (Same as Folklore M211.) Lecture, three hours. Prerequisite: consent of instructor. Analysis of traditional expressive forms and behaviors inherent in selected festivals and festive events (e.g., carnival, community folk festivals, small festive gatherings), with emphasis on their structure and human dynamics.

**212A. Theory of Textual Criticism.** Prerequisite: graduate standing. Presentation and discussion of methods to be employed in preparation of a critical edition of a medieval and/or Renaissance literary text.

**214A-214G. Italian Literature of the 14th Century.** Lecture, three hours:

**214A.** Dante's *Vita Nuova* and *Rime*.

**214B.** *Convivio* and *De Vulgari Eloquentia*.

**214C.** *Commedia* and *Monarchia*.

**214D.** Petrarca.

**214E.** *Decameron*. Mrs. Cottino-Jones

**214F.** Boccaccio's Other Works.

Mrs. Cottino-Jones

**214G.** Sacchetti and Other Prose Writers.

Mrs. Cottino-Jones

**215A-215B-215C. Italian Literature of the 15th Century.** Lecture, three hours:

**215A.** Fiction and Other Prose Texts.

**215B.** Writings of the Humanists.

**215C.** Age of Lorenzo de' Medici and Poliziano.

Mr. Betti

**216A-216E. Italian Literature of the 16th Century.** Lecture, three hours:

**216A.** Machiavelli.

**216B.** Ariosto.

**216C.** Bembo, Folengo, Aretino, and the Theater.

Mrs. Cottino-Jones

**216D.** Prose (Castiglione, Della Casa, Guicciardini, Cellini).

**216E.** Tasso.

**217A-217B-217C. Italian Literature of the 17th Century.** Lecture, three hours:

**217A.** Bruno, Campanella, Galilei, Magalotti.

Mrs. Cottino-Jones

**217B.** *Commedia dell'Arte* and the Theater.

Mrs. Cottino-Jones

**217C.** Marino and Marinisti. Mrs. Cottino-Jones

**218A-218E. Italian Literature of the 18th Century.** Lecture, three hours:

**218A.** Prose from Vico to Cesarotti.

Mr. Betti

**218B.** Essayists and Autobiographical Writers.

Mr. Betti

**218C.** Theater, Especially Metastasio, Goldoni, C. Gozzi.

- 218D. Parini and Poets of Arcadia.  
 218E. Alfieri. Mr. Betti  
 219A-219F. **Italian Literature of the 19th Century.** Lecture, three hours:  
 219A. Foscolo.  
 219B. Leopardi.  
 219C. Manzoni.  
 219D. Trends in Fiction before Verga. Mr. Betti  
 219E. Verga.  
 219F. Italian Literature at Turn of the Century. Ms. Re

220A-220B-220C. **Italian Literature of the 20th Century.** Lecture, three hours:

- 220A. From D'Annunzio to Futurism and the Early Twenties. Mr. Ballerini, Ms. Re  
 220B. Contemporary Italian Poetry. Mr. Ballerini  
 220C. Contemporary Italian Fiction. Mr. Ballerini, Ms. Re

M230A-M230B. **Folk Tradition in Italian Literature.** (Same as Folklore M230A-M230B.) Lecture, two hours.

250A-250D. **Seminars: Dante.** Seminar, three hours.

251. **Seminar: Petrarch.** Seminar, three hours.

252. **Seminar: Boccaccio.** Seminar, three hours. Mrs. Cottino-Jones

253A-253B-253C. **Seminars: Chivalric Poetry in Italy.** Seminar, three hours. Relationship between the genre and its French medieval sources, with study of its evolution in Italy through Pulci, Boiardo, Ariosto, and Tasso. Mrs. Cottino-Jones

254. **Seminar: Machiavelli.** Seminar, three hours.

255A-255B. **Seminars: Baroque.** Seminar, three hours. Mrs. Cottino-Jones

256A-256B. **Seminars: 18th Century.** Seminar, three hours.

257A-257B. **Seminars: Romanticism.** Seminar, three hours.

258A-258B. **Seminars: Contemporary Italian Literature.** Seminar, three hours. Mr. Ballerini, Ms. Re

259A-259B-259C. **Studies in History of Italian Language:**

259A. History of the Italian Language. Prerequisite: graduate standing. Historical survey of development of the language from medieval times to unification of the country (1861). *Questione della lingua*, general acceptance of Florentine speech, and its evolution into the national language. Mr. Tuttle

259B. Structure of Modern Italian. Prerequisite: graduate standing. Various tendencies in modern and contemporary Italian. Foreign influences in today's Italian language. Relationship between national language and the various dialects. Mr. Tuttle

259C. Italian Dialectology. Historical differentiation of Italian dialects considered in its areal dimension. Specific geolinguistic problems and solutions illustrating growth of the discipline up to its present merging with sociolinguistics as Italian dialects become more vertically defined. Mr. Tuttle

298. **Variable Topics in Italian Studies.** Lecture, three hours; discussion, one hour. Prerequisite: graduate standing or consent of instructor. Seminar focusing on themes and issues outside the uniquely Italian literature topics covered in regular departmental graduate courses.

370. **Problems and Methods in Teaching Italian.** Lecture, two hours. Mrs. Cheeseman

375. **Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

495A-495D. **Teaching Italian at College Level (2 to 4 units each).** Prerequisite: consent of instructor.

495A. Techniques in Teaching Italian Literature; 495B. Techniques in Teaching Italian Culture; 495C. Techniques in Teaching Italian Conversation; 495D. Techniques in Teaching Italian Film.

501. **Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

596. **Directed Individual Studies (4 to 8 units).** May be repeated twice. S/U grading.

597. **Preparation for M.A. Comprehensive Examination or Ph.D. Qualifying Examinations (4 to 8 units).** S/U grading.

599. **Ph.D. Research and Writing (4 to 8 units).** May be repeated. S/U grading.

## Labor and Workplace Studies (Interdepartmental)

1001 Gayley Avenue, (310) 825-9603

### Professors

Reginald H. Alleyne, Jr., LL.B., LL.M. (Law)  
 Samuel A. Culbert, Ph.D. (Management)  
 Nancy M. Henley, Ph.D. (Psychology)  
 Sanford M. Jacoby, Ph.D. (Management)  
 Archie Kleingartner, Ph.D. (Management)  
 David Lewin, Ph.D. (Management)  
 John H.M. Laslett, D.Phil. (History)  
 Christine A. Littleton, J.D. (Law)  
 Daniel J.B. Mitchell, Ph.D. (Management)  
 Karen J. Orren, Ph.D. (Political Science)  
 Karen B. Sacks, Ph.D. (Anthropology)  
 Kenneth L. Sokoloff, Ph.D. (Economics)  
 Roger Waldinger, Ph.D. (Sociology)  
 Maurice Zeitlin, Ph.D. (Sociology)

### Associate Professors

Ruth H. Milkman, Ph.D. (Sociology)  
 Michael Wallerstein, Ph.D. (Political Science)

### Assistant Professors

Christopher Erickson, Ph.D. (Management)  
 Miriam A. Golden, Ph.D. (Political Science)  
 Kathleen McGarry, Ph.D. (Economics)

## Scope and Objectives

This special undergraduate program is intended to coordinate and enrich offerings on the workplace's connections to the social, political, and economic forces that surround it. Students become acquainted with institutions of the labor market such as public policies, employment practices, and unions. Faculty members from various disciplines are actively engaged in research on some aspect of employee relations, employee organizations, or workplace concerns in the U.S. or other countries. Administration of the program is coordinated through the Institute of Industrial Relations.

## Special Undergraduate Program

The specialization must be taken in conjunction with a major in the social sciences or in psychology. Students with other majors may be admitted by petition.

### Upper Division

*Required:* Management 150; Political Science 174 or History 155B; three other courses selected from Economics 151, 152, 181B, 183, Geography 155, History 155A, 155B, Political Science 169A, 174, Psychology M137E, Sociology M163, 171, 173, Women's Studies 170. All students take a one-term specialization seminar designed for the exchange of disciplinary perspectives and directed research toward the end of the program.

Courses in the specialization may also be applied toward the requirements of the major where appropriate.

For further information, contact the Institute of Industrial Relations (310-825-9603) or Professor Sanford M. Jacoby (310-825-1658).

## Latin American Studies (Interdepartmental)

10347 Bunche Hall, (310) 206-6571

### Professors

Paul R. Abramson, Ph.D. (Psychology)  
 Rodolfo Alvarez, Ph.D. (Sociology)  
 Shirley L. Arora, Ph.D. (Spanish)  
 Rosina M. Becerra, Ph.D. (Social Welfare)  
 Rubén A. Benítez, Ph.D. (Spanish)  
 C. Rainer Berger, Ph.D. (Anthropology, Geography, Geophysics)  
 Leland S. Burns, Ph.D. (Urban Planning)  
 Alfonso F. Cardenas, Ph.D. (Computer Science)  
 Martin L. Cody, Ph.D. (Biology)  
 Edwin L. Cooper, Ph.D. (Anatomy and Cell Biology)  
 José de la Torre, D.B.A. (Management)  
 Roger Detels, M.D., M.S. (Epidemiology)  
 Christopher B. Donnan, Ph.D. (Anthropology)  
 John A. Dracup, Ph.D. (Civil Engineering)  
 Elsie Dunin, M.A. (Dance)  
 Timothy Earle, Ph.D. (Anthropology)  
 Sebastian Edwards, Ph.D. (Economics, Management)  
 Raiph R. Ferriehs, D.V.M., Dr.P.H. (Epidemiology)  
 Jeffrey A. Frieden, Ph.D. (Political Science)  
 John Friedmann, Ph.D. (Urban Planning)  
 Mario Gerla, Ph.D. (Computer Science)  
 Juan Gómez-Quirónes, Ph.D. (History)  
 Edward Gonzalez, Ph.D. (Political Science)  
 Patricia M. Greenfield, Ph.D. (Psychology; Distinguished Teaching Award)  
 Peter B. Hammond, Ph.D. (Anthropology)  
 Dominique M. Hanssens, Ph.D. (Management)  
 Arnold C. Harberger, Ph.D. (Economics)  
 John N. Hawkins, Ph.D. (Education)  
 Norris C. Hundley, Ph.D. (History)  
 Allen W. Johnson, Ph.D. (Anthropology)  
 Marvin Karno, M.D., in Residence (Psychiatry and Biobehavioral Sciences)

Cecelia F. Klein, Ph.D. (*Art History*)  
 David M. Kunzle, Ph.D. (*Art History*)  
 Axel Leijonhufvud, Ph.D. (*Economics*)  
 James Lockhart, Ph.D. (*History*), *Chair*  
 Gerardo Luzuriaga, Ph.D. (*Spanish*)  
 Henry W. McGee, Jr., J.D., LL.M. (*Law*)  
 Pamela L. Munro, Ph.D. (*Linguistics*)  
 Alfred K. Neumann, M.D. (*Community Health Sciences*)  
 Park S. Nobel, Ph.D. (*Biology*)  
 Antony R. Orme, Ph.D. (*Geography*)  
 C.P. Otero, Ph.D. (*Spanish, Romance Linguistics*)  
 José Pascual-Buxó, Ph.D. (*Spanish*)  
 Jorge R. Preloran, B.A. (*Film and Television*)  
 A. Carlos Quicoli, Ph.D. (*Portuguese, Romance Linguistics*)  
 Dwight Read, Ph.D. (*Anthropology*)  
 Geoffrey B. Saxe, Ph.D. (*Education*)  
 Susan C. Scrimshaw, Ph.D. (*Anthropology, Community Health Sciences*)  
 Edward W. Soja, Ph.D. (*Urban Planning*)  
 Robert M. Stevenson, Ph.D., *Recalled* (*Musicology*)  
 Michael Storper, Ph.D. (*Urban Planning*)  
 Fernando M. Torres-Gil, Ph.D. (*Social Welfare*)  
 Laurie Vitt, Ph.D. (*Biology*)  
 Hartmut Walter, Ph.D. (*Geography*)  
 Louis Jolyon West, M.D. (*Psychiatry and Biobehavioral Sciences*)  
 James W. Wilkie, Ph.D. (*History*)  
 Maurice Zeitlin, Ph.D. (*Sociology*)

### Professors Emeriti

Charles F. Bennett, Ph.D. (*Geography*)  
 Lester Breslow, M.D., M.P.H. (*Health Services*)  
 William O. Bright, Ph.D. (*Linguistics, Anthropology*)  
 Henry J. Bruman, Ph.D. (*Geography*)  
 E. Bradford Burns, Ph.D. (*History; Distinguished Teaching Award*)  
 Robert N. Burr, Ph.D. (*History*)  
 Bertram Bussell, Ph.D. (*Computer Science*)  
 Charlotte A. Crabtree, Ph.D. (*Education*)  
 E. Mayone Dias, Ph.D. (*Spanish and Portuguese*)  
 David K. Eiteman, Ph.D. (*Management*)  
 Walter A. Fogel, Ph.D. (*Management*)  
 Simon González, Ed.D. (*Education*)  
 Thomas R. Howell, Ph.D. (*Biology*)  
 Claude L. Hulet, Ph.D. (*Portuguese*)  
 Isabelle F. Hunt, Dr.P.H. (*Community Health Sciences*)  
 John G. Kennedy, Ph.D. (*Anthropology, Psychiatry and Biobehavioral Sciences*)  
 Frederick C. Kintzer, Ed.D. (*Education*)  
 Lewis L. Langness, Ph.D. (*Anthropology, Psychiatry and Biobehavioral Sciences*)  
 O. Raynal Lunt, Ph.D. (*Biology*)  
 Mildred E. Mathias, Ph.D. (*Biology*)  
 Clement W. Meighan, Ph.D. (*Anthropology*)  
 Henry B. Nicholson, Ph.D. (*Anthropology*)  
 Russell R. O'Neill, Ph.D. (*Mechanical, Aerospace, and Nuclear Engineering*)  
 David O'Shea, Ph.D. (*Education*)  
 Richard L. Perrine, Ph.D. (*Civil Engineering*)  
 Douglass R. Price-Williams, Ph.D. (*Anthropology, Psychiatry and Biobehavioral Sciences*)  
 Stanley L. Robe, Ph.D. (*Spanish and Portuguese*)  
 Milton I. Roemer, M.D., M.P.H. (*Health Services*)  
 Jonathan D. Sauer, Ph.D. (*Geography*)  
 Charles A. Schroeder, Ph.D. (*Biology*)  
 Carol Scothorn, M.A. (*Dance*)  
 Allegra Fuller Snyder, M.A. (*Dance*)  
 Norman J.W. Thrower, Ph.D. (*Geography*)  
 Johannes Wilbert, Ph.D. (*Anthropology; Distinguished Teaching Award*)  
 Robert M. Williams, Ph.D. (*Management*)  
 Telford H. Work, M.D., M.P.H. (*Epidemiology*)

### Associate Professors

Theodore A. Andersen, Ph.D. (*Management*)  
 Carole H. Browner, Ph.D., *in Residence* (*Psychiatry and Biobehavioral Sciences*)  
 Donald G. Buth, Ph.D. (*Biology*)  
 Leonardo Estrada, Ph.D. (*Urban Planning*)  
 Margaret FitzSimmons, Ph.D. (*Urban Planning; Distinguished Teaching Award*)

Teshome H. Gabriel, Ph.D. (*Film and Television*)  
 Barbara Geddes, Ph.D. (*Political Science*)  
 Susanna B. Hecht, Ph.D. (*Urban Planning*)  
 Guillermo Hernández, Ph.D. (*Spanish*)  
 Henry A. Hespeneheide, Ph.D. (*Biology*)  
 Robert A. Hill, M.Sc. (*History*)  
 Richard Leventhal, Ph.D. (*Anthropology*)  
 David E. López, Ph.D. (*Sociology*)  
 Steven J. Loza, Ph.D. (*Ethnomusicology and Systematic Musicology*)  
 Alfred E. Osborne, Jr., Ph.D. (*Management*)  
 Susan Plann, Ph.D. (*Spanish*)  
 Hans Schöllhammer, D.B.A. (*Management*)  
 A. John Skirius, Ph.D. (*Spanish*)  
 Carlos A. Torres, Ph.D. (*Education*)  
 Concepción Valadez, Ph.D. (*Education*)  
 Ruth E. Zambrana, Ph.D. (*Social Welfare*)

### Assistant Professors

Adriana Bergero, Ph.D. (*Spanish*)  
 Judith A. Carney, Ph.D. (*Geography*)  
 Verónica Cortinez, Ph.D. (*Spanish*)  
 Raúl Hinojosa-Ojeda, Ph.D. (*Urban Planning*)  
 José Moya, Ph.D. (*History*)  
 Claudia Parodi, Ph.D. (*Spanish*)  
 Federico Sturzenegger, Ph.D. (*Economics*)  
 Edward E. Telles, Ph.D. (*Sociology*)  
 Mariano Tommasi, Ph.D. (*Economics*)

### Lecturers

José M. Cruz-Salvadores, M.A. (*Spanish*)  
 Ludwig Lauerhass, Ph.D. (*History*)  
 Linda Rodriguez, Ph.D. (*History*)

### Adjunct Associate Professor

Ichak Adizes, Ph.D. (*Management*)

## Scope and Objectives

UCLA has been in the forefront of U.S. universities with significant teaching and research interests in Latin American studies for more than 50 years. More than 100 faculty members from 22 departments and professional schools regularly offer a broad range of courses with an emphasis on Latin America. These course offerings in the humanities, social sciences, fine arts, and professional fields provide students a unique opportunity to focus on Latin America, a region of growing importance.

The Latin American Studies Program, coordinated through UCLA's Latin American Center, offers the Bachelor of Arts and Master of Arts degrees. In the undergraduate major students develop a program combining language and methodological training with interdisciplinary studies in one of three areas: arts and humanities, social sciences, or ecology and environment. At the graduate level, students pursue more specialized coursework and interests, culminating in an interdisciplinary research study. Cooperative degree programs with the UCLA Schools of Architecture and Urban Planning, Education, Engineering and Applied Science, Library and Information Science, Management, and Public Health provide the opportunity to combine the M.A. in Latin American Studies with a master's degree in a professional field.

## Bachelor of Arts Degree

Undergraduate studies of the Latin American region are designed to serve the needs of (1) stu-

dents desiring a general education focused on the Latin American cultural region, (2) students planning to enter business, government, or international agency service, (3) students preparing to teach social sciences or language, and (4) students preparing for advanced academic study of Latin America.

You must complete all preparation courses with a C (2.0) in each course; the courses are applicable toward the Letters and Science lower division general education requirements.

## Foreign Language Requirement

Language requirements are uniform for all students in the major regardless of core area. Proficiency in two languages equivalent to (1) Spanish 25 and Portuguese 3 or (2) Portuguese 25 and Spanish 5 is required. In lieu of Portuguese 1, 2, and 3, you may take Portuguese 102A-102B which are designed for students with a background in Spanish. An indigenous language of Latin America (i.e., Quechua) may be substituted for the minor language.

## Course Limitations

You may not take more than eight units of Latin American Studies 199 for letter-grade credit nor more than eight units in any single term. No course taken on a Passed/Not Passed basis may be applied toward the B.A. degree requirements. In order to register in a 199 course, you must have advanced junior standing and an overall GPA of 3.0, or senior standing.

## Double Majors

Through judicious use of electives, you may find it possible to obtain the B.A. degree with two majors (e.g., Latin American studies and history). Interested students who have achieved junior standing should consult the undergraduate advisers of both departments involved, initiating the appropriate petition with the undergraduate adviser in Latin American Studies.

## Study in Latin America

You are encouraged to spend up to one year in Latin America either (1) to study with an education abroad program, (2) to study in Latin American universities, (3) to conduct research, or (4) to complete an internship in an international or development agency. Full credit is granted according to the individual programs arranged in consultation with the undergraduate adviser. Proposals must be presented in writing to the interdepartmental committee.

## Core Areas

You select one of three core areas as the focus of your major: arts and humanities, social sciences, or ecology and environment. Requirements for each core area are listed below.

## Core I: Arts and Humanities

**Preparation** — Two courses from History 8A, 8B, 8C; Latin American Studies 99 (or 197 with department consent); Spanish and Portu-



guese M44; Art History 55A or 55B or Ethnomusicology and Systematic Musicology 91K and Dance 73B.

**Core Area** — Ten upper division courses from the approved list of Latin American courses distributed as follows:

(1) *Core Concentration* — Five courses from literature and folklore or the arts (art, music, dance, theater arts) or linguistics. Only one course from the electives list may be applied toward the core concentration.

(2) *Theory and Methods* — One course from theory and methods.

(3) *Internal Breadth* — Four additional courses from the arts and humanities core area but outside the core concentration. No more than two of these may be electives.

**External Breadth** — From the approved list, six upper division courses outside the arts and humanities core area distributed as follows: two courses in each of two core concentrations such that at least one core concentration is selected from the social sciences core (e.g., history) and at least one is developed within the ecology and environment core (e.g., public health). No more than three external breadth courses may be electives.

## Approved Undergraduate Course List

### (1) Literature and Folklore

**Folklore and Mythology** M149. Folk Literature of the Hispanic World

**History** 169. Latin American Eliteloze

**Portuguese (Spanish and Portuguese)** 130A-130B. Survey of Brazilian Literature

C131. Colonial Brazilian Literature

C132. Romanticism in Brazilian Literature

C133. Naturalism, Realism, and Symbolism in Brazilian Literature

C134. 20th-Century Brazilian Literature: Poetry and Drama

C135. 20th-Century Brazilian Literature: Novel

**Spanish (Spanish and Portuguese)** 136A-136B. Survey of Spanish-American Literature

137. Literature of Colonial Spanish America

139. Romanticism and Realism in Spanish-American Literature

142. 20th-Century Spanish-American Literature: Fiction and the Essay

143. 20th-Century Spanish-American Literature: Poetry and Drama

144. Mexican Literature

M149. Folk Literature of the Hispanic World

170B. Senior Honors Seminar: Topics in Spanish-American Literature

### Theory and Methods

**Folklore and Mythology** 101. Introduction to Folklore

190. Selected Topics in Folklore and Mythology Studies  
199. Special Studies in Folklore

**Portuguese (Spanish and Portuguese)** 199. Special Studies

**Spanish (Spanish and Portuguese)** 119A. Introduction to Study of Literature: Prose

119B. Introduction to Study of Literature: Poetry

119C. Introduction to Study of Literature: Drama

199. Special Studies

### (2) Fine Arts

**Art History** C117A. Pre-Columbian Art of Mexico

C117B. Pre-Columbian Art of the Maya

C117C. Pre-Columbian Art of the Andes

**Dance** C173B. Dance of Mexico

C180B. Studies in Dance Ethnography

183. Dance in Latino American Cultures

**Ethnomusicology and Systematic Musicology**

108A-108B. Music of Latin America

M110A-M110B. The Afro-American Musical Heritage

113. Music of Brazil

**Film and Television** 106C. History of African, Asian, and Latin American Film

### Theory and Methods

**Anthropology** \*118A, 118B. Museum Studies

\*133R. Aesthetic Systems

\*137. Ethnography on Film

**Art History** \*199. Special Studies in Art

**Dance** \*199. Special Studies in Dance

**Ethnomusicology and Systematic Musicology**

\*M180. Analysis of Traditional Music

\*C190A-C190B. Proseminars: Ethnomusicology

**Film and Television** 199. Special Studies in Film and Television

**Music** \*199. Special Studies in Music

### (3) Linguistics

**Portuguese (Spanish and Portuguese)** 100A. Phonology and Morphology

\*100B. Syntax

\*M118A. History of Portuguese and Spanish: Phonology

\*M118B. History of Portuguese and Spanish: Morphology and Syntax

**Spanish (Spanish and Portuguese)** \*100A. Introduction to Study of Spanish Grammar: Phonology and Morphology

\*100B. Introduction to Study of Spanish Grammar: Syntax

\*115. Applied Linguistics

\*M118A. History of Portuguese and Spanish: Phonology

\*M118B. History of Portuguese and Spanish: Morphology and Syntax

\*119A. Introduction to Study of Literature: Prose

\*119B. Introduction to Study of Literature: Poetry

\*119C. Introduction to Study of Literature: Drama

\*170C. Senior Honors Seminar: Topics in Hispanic Linguistics

### Theory and Methods

**Anthropology** \*143. Field Methods in Linguistic Anthropology

**Linguistics** \*103. Introduction to General Phonetics

\*110. Introduction to Historical Linguistics

\*120A. Phonology I

\*120B. Syntax I

\*165A. Phonology II

\*165B. Syntax II

\*170. Language and Society: Introduction to Sociolinguistics

\*199. Special Studies in Linguistics

**Portuguese (Spanish and Portuguese)** \*199. Special Studies

**Spanish (Spanish and Portuguese)** \*199. Special Studies

### (4) Electives

**Anthropology** \*M140. Language in Culture

**Ethnomusicology and Systematic Musicology** 20A. Musical Cultures of the World

\*M110A-M110B. The Afro-American Musical Heritage  
**Film and Television** 112. Film and Social Change  
**Folklore and Mythology** \*118. Folk Art, Folklife, and Material Culture

\*190. Selected Topics in Folklore and Mythology Studies

**Latin American Studies** 197. Interdisciplinary Topics in Latin American Studies

199. Special Studies in Latin American Studies

\*Special courses which may be applied toward the M.A. degree requirements with advanced departmental approval. These courses do not have any exclusive focus on Latin America but provide an opportunity for students to relate a particular perspective or phenomenon to Latin America.

## Core II: Social Sciences

**Preparation** — Two courses from History 8A, 8B, 8C; Latin American Studies 99 (or 197 with department consent); Economics 1 and 2, or 100; Economics 40 or Sociology 18 or Statistics 50.

**Core Area** — Ten upper division courses from the approved list of Latin American courses distributed as follows:

(1) *Core Concentration* — Five courses from anthropology and sociology or economics or geography or history or political science. Only one course from the electives list may be applied toward the core concentration.

(2) *Theory and Methods* — One course from theory and methods.

(3) *Internal Breadth* — Four additional courses from the social sciences core area but outside the core concentration. No more than two of these may be electives.

**External Breadth** — From the approved list, six upper division courses outside the social sciences core area distributed as follows: two courses in each of two core concentrations such that at least one core concentration is selected from the arts and humanities core (e.g., fine arts) and at least one is developed within the ecology and environment core (e.g., public health). No more than three external breadth courses may be electives.

## Approved Undergraduate Course List

### (1) Anthropology and Sociology

**Anthropology** 114P. Ancient Civilizations of Western Middle America (Nahuatl Sphere)

114Q. Ancient Civilizations of Eastern Middle America (Maya Sphere)

114R. Ancient Civilizations of Andean South America

M172T. Ethnohistory of Hispanic Cultures in the U.S. Southwest

173Q. Latin American Communities

174P. Ethnography of South American Indians

\*174Q. Ethnology of South American Indians

**Sociology** 186. Latin American Societies

### Theory and Methods

**Anthropology** \*115P. Archaeological Field Training  
\*115R. Strategy of Archaeology

\*M116Q. Dating Techniques in Environmental Sciences and Archaeology

\*118A, 118B. Museum Studies

\*M136Q. Laboratory for Naturalistic Observations: Developing Skills and Techniques

\*137. Ethnography on Film

\*138. Methods and Techniques of Ethnohistory

\*139. Field Methods in Cultural Anthropology

\*186A. Quantitative Methods in Anthropology

\*186B. Models and Modeling in Anthropology

\*199. Special Studies in Anthropology

**Sociology** \*104. Introduction to Sociological Research Methods

\*112. Introduction to Mathematical Sociology

\*199. Special Studies

## (2) Economics

**Economics** \*110. Economic Problems of Underdeveloped Countries

\*111. Theories of Economic Growth and Development

\*112. Policies for Economic Development

\*190. International Economics

\*191. International Trade Theory

\*192. International Finance

## Theory and Methods

**Economics** \*103A-103Z. Upper Division Research Seminars: Applications of Economic Theory

\*M135. Economic Models of Public Choice

\*M136. Economic Models of Political Conflict and Conflict Resolution

\*199. Special Studies in Economics

**Management** \*197. Special Topics in Management

## (3) History

**History** 165A. Early Latin America

165C. Indians of Colonial Mexico

166. Latin America in the 19th Century

167A-167D. Latin America in the 20th Century

168. History of Latin American International Relations

169. Latin American Elitology

170A. Latin American Cultural History

170B. Classic Travel Accounts of Latin America since 1735

171. Mexican Revolution since 1910

172. History of Argentina

173. Modern Brazil

174. Brazilian Intellectual History

197. Undergraduate Seminar: Latin America

## Theory and Methods

**History** \*101. Introduction to Historical Practice

\*199. Special Studies in History

**Library and Information Science** 111C. Ethnic Groups and Their Bibliographies: Latino History and Culture

## (4) Political Science

**Political Science** 130. Politics of Latin American Economic Development

131. Latin American International Relations

\*139A-139Z. Special Studies in International Relations: Latin America

\*149A-149Z. Special Studies in Politics: Latin America

163A-163B. Government and Politics in Latin America

\*169A-169Z. Special Studies in Comparative Politics: Latin America

199. Readings in Political Science: Latin America

## Theory and Methods

**Political Science** \*102. Statistical Analysis of Political Data

\*104A-104B. Introduction to Survey Research

\*M105. Economic Models of Public Choice

\*119A-119Z. Special Studies in Political Theory

\*137A-137B. International Relations Theory

\*146. Political Behavior Analysis

\*168. Comparative Political Analysis

## (5) Geography

**Geography** 121. Conservation of Resources: Underdeveloped World

\*128. Global Environment: Problems and Issues

\*142. Population Geography

181. Mexico, Central America, Caribbean

182A. Spanish South America

182B. Brazil

\*199. Special Study

## Theory and Methods

**Geography** \*171. Quantitative Analysis

## (6) Electives

**Anthropology** \*132. Technology and Environment

\*150. Study of Social Systems

\*153. Evolution of Human Societies

\*M154. Women in Culture and Society

\*161. Development Anthropology

\*167. Urban Anthropology

\*M168. Health in Culture and Society

**Economics** \*120. Introduction to Urban and Regional Economics

\*121. Urban Economic Analysis

\*180. Comparative Systems: Transformation of Socialist Economies

**Geography** \*108. World Vegetation

\*129. Seminar: Environmental Studies

\*140. Political Geography

\*148. Economic Geography

\*150. Urban Geography

**History** M159A, M159B. History of the Chicano Peoples

**Latin American Studies** 197. Interdisciplinary Topics in Latin American Studies

199. Special Studies in Latin American Studies

**Political Science** \*124. International Political Economy

\*167. Ideology and Development in World Politics

\*181. Comparative and Development Administration

\*183C. Subnational Institutions: Comparative Urban Government

**Sociology** \*116. Social Demography

\*157. Social Stratification

\*182. Political Sociology

\*184. Social Change

\*Special courses which may be applied toward the M.A. degree requirements with advanced departmental approval. These courses do not have any exclusive focus on Latin America but provide an opportunity for students to relate a particular perspective or phenomenon to Latin America.

## Core III: Ecology and Environment

**Preparation** — Two courses from History 8A, 8B, 8C; Latin American Studies 99; Geography 5; Statistics 50.

**Core Area** — Ten upper division courses from the approved list of Latin American courses distributed as follows:

(1) *Core Concentration* — Five courses from the core area. Only one course from the electives list may be applied toward the core concentration.

(2) *Theory and Methods* — One course from theory and methods.

(3) *Internal Breadth* — Four additional courses from the ecology and environment core area to be selected from theory and methods core courses or electives.

**External Breadth** — From the approved list, six upper division courses outside the ecology and environment core area distributed as follows: two courses in each of two core concentrations such that at least one core concentration is selected from the arts and humanities core (e.g., fine arts) and at least one is developed within the social sciences core (e.g., history). No more than three external breadth courses may be electives.

## Approved Undergraduate Course List

**Community Health Sciences** 132. Health, Disease, and Health Services in Latin America

**Geography** 121. Conservation of Resources: Underdeveloped World

\*M128. Global Environment: Problems and Issues

\*142. Population Geography

181. Mexico, Central America, Caribbean

182A. Spanish South America

182B. Brazil

\*199. Special Studies

## Theory and Methods

**Anthropology** \*186A. Quantitative Methods in Anthropology

\*186B. Models and Modeling in Anthropology

**Biostatistics** 100A, 100B, 100C. Introduction to Biostatistics

**Geography** \*171. Quantitative Analysis

## Electives

**Anthropology** \*132. Technology and Environment

\*153. Evolution of Human Societies

\*167. Urban Anthropology

M168. Health in Culture and Society

**Community Health Sciences** \*130. Nutrition and Health

**Economics** \*120. Introduction to Urban and Regional Economics

**Geography** \*108. World Vegetation

\*129. Seminar: Environmental Studies

\*140. Political Geography

\*148. Economic Geography

\*150. Urban Geography

**Latin American Studies** 197. Interdisciplinary Topics in Latin American Studies

199. Special Studies in Latin American Studies

**Sociology** \*116. Social Demography

\*Special courses which may be applied toward the M.A. degree requirements with advanced departmental approval. These courses do not have any exclusive focus on Latin America but provide an opportunity for students to relate a particular perspective or phenomenon to Latin America.

## Master of Arts Degree

### Admission

In addition to University minimum requirements, the B.A. degree in Latin American Studies constitutes the normal basis for admission. Applicants with a degree in another field can be admitted but must complete certain undergraduate prerequisites subsequent to admission. Applicants with Latin American field experience or special methodological studies are given special consideration. All applicants should meet minimum requirements in at least one language of Latin America. The following items are required:

(1) Three academic letters of recommendation, unless you have been away from school for some time, in which case one of the letters may be from an employer.

(2) A minimum of a 3.0 or B average in the junior/senior years of college.

(3) A statement of purpose discussing your background in Latin American studies, proposed program of study, and future career plans.

(4) A minimum score of 1,000 on the General Test (combined verbal and quantitative sections) of the Graduate Record Examination (GRE).

(5) A résumé or curriculum vitae describing academic and Latin American experience.

Students are admitted each term. Application deadlines are November 1 for Winter Quarter, February 1 for Spring Quarter, and December 15 (to be considered for financial assistance) or May 15 for Fall Quarter.

Fellowship applications for the academic year are due on January 8 prior to the Fall Quarter for which application is made. Prospective students may write for departmental brochures to the Academic Programs Office, Latin American Center, 10347 Bunche Hall, UCLA, Los Angeles, CA 90024-1483.

### Major Fields or Subdisciplines

You are expected to develop and integrate three fields in Latin American studies, to be selected from the following: anthropology, art, economics, education, engineering, folklore, geography, history, law, library science, linguistics, management, music, political science, Portuguese, public health, sociology, Spanish, theater arts, and urban planning. At least one of the selected fields must be a social science.

### Foreign Language Requirement

Proficiency equivalent to 24 quarter units of university-level Spanish and 12 quarter units of university-level Portuguese or 16 quarter units of university-level Portuguese and 20 units of university-level Spanish is required. Only coursework taken within five years of the award of the M.A. degree may be used to demonstrate current proficiency. Since these courses may not be applied toward the M.A. degree, you are encouraged to pass these proficiency levels by examination. A major Indian language of Latin America (i.e., Quechua) may be substituted for either Spanish or Portuguese. You must fulfill the foreign language requirement by examination or petition for a waiver of the examination if you have gained competency in another manner (i.e., native speaker, upper division coursework, Peace Corps service).

### Course Requirements

Two plans are available. For the comprehensive examination plan, a minimum of nine courses is required, including a one-term core course (Latin American Studies 205) and eight additional courses to be distributed among three fields or

disciplines on a 3-3-2 basis. Of the nine courses, five must be at the graduate level, with at least one in each of the three fields.

For the thesis plan (which requires prior approval), a minimum of 10 courses is required, including a one-term core course and nine additional courses to be distributed on a 4-3-2 basis among three fields. Three graduate-level courses are required in the first field, with one each in the two minor fields.

All courses must be selected from the department-approved list of courses. Other courses must be petitioned in advance.

Courses numbered in the 300 and 400 series are not applicable toward the M.A. degree.

No more than eight units of 500-series courses may be applied toward the total course requirement for the M.A. degree; no more than four units may be applied toward the five graduate courses required for the degree.

Graduate courses may be repeated unless they are lecture courses.

### Comprehensive Examination Plan

In addition to course requirements, you must submit three research papers written for at least two of your three fields of study. At least two of the papers must have been submitted for graduate courses in the 200 series. A three-member faculty committee representing your three fields evaluates the papers and grades them pass, pass subject to revision of one or more of the research papers, or fail. No reexamination is permitted. The M.A. degree is awarded on recommendation of the faculty committee. Copies of your papers must be filed in the Academic Programs Office of the Latin American Center.

### Thesis Plan

Although you are generally expected to follow the M.A. comprehensive examination plan, in special cases you may be allowed to follow the M.A. thesis plan. You must develop a carefully prepared proposal that provides sound justification for the thesis plan, including provisions for funding any planned field research.

Once the thesis plan option has been approved, you select a three-member faculty thesis committee to work with you in the development of the thesis and to read, evaluate, and approve the drafts and final version. Once the final version is approved, the thesis committee recommends the award of the M.A. degree. By the end of the term before graduation, you must file for advancement to candidacy with the Graduate Division.

### Cooperative Degree Programs

Several options are available to combine the M.A. in Latin American Studies with a professional degree. After acceptance by both the Latin American Studies Program and the re-

spective professional school, you may pursue both degrees simultaneously. Articulated degree programs are currently available with the Schools of Education (M.Ed. in Curriculum), Engineering and Applied Science (M.S. in Engineering), Library and Information Science (M.L.S.), and Public Health (M.P.H.); articulated programs do not allow course credit to be applied toward more than one degree. Concurrent degree programs are available with the Graduate Schools of Architecture and Urban Planning (M.A. in Urban Planning) and Management (M.B.A.).

### Lower Division Course

**99. Introduction to Latin American Problems.** Limited to 15 students. Interdisciplinary seminar for lower division students. May be repeated for credit with topic change.

### Upper Division Courses

**197. Interdisciplinary Topics in Latin American Studies.** Advanced interdisciplinary course for upper division students. May be repeated for credit with topic change.

**199. Special Studies in Latin American Studies (4 or 8 units).** Prerequisite: upper division standing. Intensive directed research program in which students conduct interdisciplinary research or complete internship with an international agency or program dealing with Latin America. Faculty sponsorship and written reports required.

### Graduate Courses

**M200. Latin American Research Resources.** (Same as History M265 and Library and Information Science M225.) Seminar, three hours. General and specialized materials in fields concerned with Latin American studies. Library research techniques provide experience and competency required for future bibliographic and research sophistication as basis for enhanced research results. Mr. Lauerhass

**201. Statistical Resources for Latin American Research.** Contemporary statistical materials important for research in Latin American studies. Discussion on qualitative and interpretative aspects of the material, especially as it relates to data developed for publication in Latin American Center's *Statistical Abstract of Latin America* and its Supplement Series.

**205. Latin Americanist Scholarship.** Lecture, three hours. Prerequisite: consent of instructor. Panoramic introduction to methods and issues in various disciplines that study Latin America, with guest lecturers from various fields. (Latin American Studies core course.) Mr. Lockhart

**M225. Computer Methodologies in Latin American Studies and Anthropology.** (Same as Anthropology M289.) Lecture, three hours. Prerequisite: consent of instructor. Basic principles of computing and information processing, along with their potential application in Latin American research. Examination of impact that computers are having in Latin American society. Mr. Behrens

**M250A. Indians of South America.** (Same as Anthropology M272.) Lecture, three hours. Prerequisite: consent of instructor. Survey of literature and research topics related to Indian cultures of South America. May be repeated for credit.

**250B. Interdisciplinary Seminar: Latin American Studies.** Lecture, three hours. Prerequisite: consent of instructor. Problem-oriented seminar on critical areas stressed in University's cooperative programs in Latin America.

**250C. Interdisciplinary Topics in Latin American Studies.** Prerequisite: consent of instructor. Reading knowledge of Spanish or Portuguese normally required. Seminar devoted to selected topics of an interdisciplinary nature.

**M268A-M268B. Seminars: Recent Latin American History.** (Same as History M268A-M268B.) Seminar, three hours. Prerequisite: consent of instructor. Reading knowledge of Spanish and Portuguese normally required. Seminar devoted to selected topics of an interdisciplinary nature. In Progress grading.

Mr. Wilkie

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study or Research (2 to 8 units).** May be repeated, but only four units may be applied toward the minimum graduate course requirement. S/U or letter grading.

**597. Preparation for M.A. Comprehensive Examination.** Ordinarily taken only during term in which student is being examined. S/U grading.

**598. Research for and Preparation of M.A. Thesis.** Only four units may be applied toward the minimum graduate course requirement. S/U grading.

## Approved Graduate Course List

Refer to the Latin American Studies undergraduate section for the lists of approved undergraduate courses.

### Fine Arts

**Art History** \*201. Topics in Historiography of Art History

C218A. Pre-Columbian Art of Mexico

C218B. Pre-Columbian Art of the Maya

C218C. Pre-Columbian Art of the Andes

219B. Pre-Columbian Art

220. Oceanic, Pre-Columbian, African, and Native North American Art

596. Directed Individual Study or Research

**Dance** \*280A-280B. Advanced Studies in Dance Ethnology

**Ethnomusicology and Systematic Musicology** \*290. Seminar: Ethnomusicology

596. Directed Individual Studies

**Film and Television** \*M209C. Ethnographic Film

\*298A-298B. Special Studies in Film and Television

### Languages

**Indigenous Languages of the Americas (Linguistics)** \*18A-18B-18C. Elementary Quechua

**Portuguese (Spanish and Portuguese)** \*1. Elementary Portuguese

2. Elementary Portuguese

3. Intermediate Portuguese

25. Advanced Portuguese

\*101A. Advanced Reading and Conversation

102A-102B. Intensive Portuguese

\*105. Advanced Composition and Style

**Spanish (Spanish and Portuguese)** \*1. Elementary Spanish

\*1G. Reading Course for Graduate Students

2. Elementary Spanish

2G. Reading Course for Graduate Students

3. Elementary Spanish

4. Intermediate Spanish

5. Intermediate Spanish

25. Advanced Spanish

\*105. Spanish Composition

### Linguistics

**Anthropology** 204. Core Seminar: Linguistic Anthropology

**Linguistics** \*210A. Field Methods I

\*210B. Field Methods II

\*220. Linguistic Areas

\*225. Linguistic Structures

M246C. Topics in Linguistic Anthropology

**Portuguese (Spanish and Portuguese)** \*202. Synchronic Morphology and Phonology

\*204A-204B. Generative Grammar

\*M205A-M205B. Development of Portuguese and Spanish Languages

**Spanish (Spanish and Portuguese)** \*202A. Phonology

\*202B. Morphology

\*204A-204B. Generative Syntax and Semantics

\*M205A-M205B. Development of Portuguese and Spanish Languages

\*209. Dialectology

\*256A-256B. Studies in Spanish Linguistics

\*257. Studies in Dialectology

### Literature

**Portuguese (Spanish and Portuguese)** \*M200. Research Resources

C231. Colonial Brazilian Literature

C232. Romanticism in Brazilian Literature

C233. Naturalism, Realism, and Symbolism in Brazilian Literature

C234. 20th-Century Brazilian Literature: Poetry and Drama

C235. 20th-Century Brazilian Literature: Novel

M249. Folk Literature of the Spanish and Portuguese Worlds

254. Studies in Early Brazilian Literature

255. Studies in Modern Brazilian Literature

**Spanish (Spanish and Portuguese)** \*M200. Research Resources

237. Literature of the Spanish Conquest

239. Romanticism and Realism in Spanish-American Literature

240. Major Currents in Modern Spanish-American Literature

243A-243B. Contemporary Spanish-American Poetry

244A-244B. Contemporary Spanish-American Novel

245. Contemporary Spanish-American Essay

246. Contemporary Spanish-American Drama

M249. Folk Literature of the Spanish and Portuguese Worlds

277A-277B. Studies in Colonial Spanish-American Literature

278A-278B. Studies in 19th-Century Spanish-American Literature

280A-280B. Studies in Contemporary Spanish-American Literature

\*M286A-M286B. Studies in Hispanic Folk Literature

### Professional

**Architecture and Urban Planning** \*232A. Introduction to Regional Planning: Evolution of Regional Planning Doctrines

\*232B. Spatial Planning: Regional and International Development

\*235A-235B. Urbanization and Rural Development in Third World Countries

\*236A. Urban and Regional Economic Development I

\*236B. Urban and Regional Economic Development II

\*236C. Urban and Regional Economic Development III

239. Special Topics in Urban and Regional Development Policy

246. Housing in Social and Economic Development Policy

266. City and Countryside in the Third World

267A. Resource-Based Development Planning

267B. Rural Development Issues

**Community Health Sciences** \*231. Maternal and Child Nutrition

\*M232. Medical Anthropology in Public Health

\*233. Seminar: Current Issues in Maternal and Child Health

\*M240. Culture and Human Reproduction

**Education** \*C203. Educational Anthropology

\*204B. Introduction to Comparative Education

\*204C. Education and National Development

\*204D. Minority Education in Cross-Cultural Perspective

\*204E. International Efforts in Education

204F. Nonformal Education in Comparative Perspective

\*C207. Politics of Education

\*238. Cross-National Analysis of Higher Education

\*252B. Seminar: Education and Social Change

\*253A. Seminar: Current Problems in Comparative Education

253D. Seminar: Latin American Education

\*253F. Seminar: Education in Revolutionary Societies

\*253H. Seminar: The Chicano/Hispanic and Education

\*596. Directed Independent Study

\*597. Preparation for Master's Comprehensive Examinations or Doctoral Qualifying Examinations

\*598. Thesis Research

**Engineering** \*596. Directed Individual or Tutorial Studies (selected from any of the engineering departments)

\*597A. Preparation for M.S. Comprehensive Examination (selected from any of the engineering departments)

**Epidemiology** \*290. Seminar: Epidemiology — Infectious and Tropical Disease

\*291. Seminar: Epidemiology — Methodology

**Health Services** \*240. Health Care Issues in International Perspective

**Law** \*270. International Law

\*271. International Business Transactions

**Library and Information Science** \*207. International Issues and Comparative Research in Library and Information Science

\*223. Literature of the Social Sciences

\*224. Literature of the Humanities and Fine Arts

M225. Latin American Research Resources

\*596. Directed Individual Study or Research

**Management** \*205A. International Business Economics

\*205B. Comparative Market Structure and Competition

\*205C. Business Forecasting for Foreign Economies

\*209. Selected Topics in Business Economics

\*234A. International Financial Markets

\*234B. Financial Management of Multinational Corporations

\*261B. Global Marketing Management

\*296A. International Business Management

\*297A. Comparative and International Management

\*297B. International Business Policy

\*297C. International Business Law

\*297D. International Business Negotiations

\*298B. Special Topics in International and Comparative Management

**Public Health** \*596. Directed Individual Study or Research (selected from any of the public health departments)

## Social Science

**Anthropology** 204. Core Seminar: Linguistic Anthropology

\*212P. Selected Topics in Hunter/Gatherer Archaeology

\*214. Selected Topics in Prehistoric Civilizations of the New World

\*M216. Dating Techniques in Environmental Sciences and Archaeology

\*230P. Ethnology

\*232Q. Myth and Ritual

\*M232R. South American Folklore and Mythology Studies

\*M241. Topics in Linguistic Anthropology

\*253. Economic Anthropology

\*M267B. Ethnographic Film Direction

M272. Indians of South America

\*282. Research Design in Cultural Anthropology

\*M288. Ethnographic Film

M289. Computer Methodologies in Latin American Studies and Anthropology

**Archaeology** \*200. Archaeology Colloquium

\*259. Fieldwork in Archaeology

**Economics** \*281A. International Trade Theory

\*281B. International Finance

\*285A-285B-285C. Workshops: International Economics

\*286A. Economic Development

\*286B. Analysis and Appraisal of Development Projects

287A. Economic Problems of Latin America

\*291A-291B. Urban Economics

**Folklore and Mythology** \*200C. Folklore Collecting and Field Research

248. Theory and Method in Latin American Folklore Studies

\*M249. Folk Literature of the Spanish and Portuguese Worlds

\*M286A-M286B. Studies in Hispanic Folk Literature

**Geography** \*251. Seminar: Urban Geography

\*M278. Dating Techniques in Environmental Sciences and Archaeology

281. Middle America

282. South America

\*292. Advanced Regional Geography: Selected Regions

**History** 200I. Advanced Historiography: Latin America

201I. Topics in History: Latin America

M265. Latin American Research Resources

266A-266B. Seminars: Colonial Latin American History

267A-267B. Seminars: Latin American History, 19th and 20th Centuries

M268A-M268B. Seminars: Recent Latin American History

**Latin American Studies** M200. Latin American Research Resources

M225. Computer Methodologies in Latin American Studies and Anthropology

M250A. Indians of South America

250B. Interdisciplinary Seminar: Latin American Studies

250C. Interdisciplinary Topics in Latin American Studies

**Political Science** 200A. Statistical Methods I

\*C221. Advanced International Relations Theory

\*231. Markets, States, and International Political Economy

\*C239. Selected Topics in International Relations

C244. Latin American Studies

\*259. Selected Topics in Comparative Politics

\*265. Politics and Economy

**Sociology** \*235. Theories of Ethnicity

\*259. Social Structure and Economic Change: Historical and Comparative Perspectives

\*263. Social Stratification

\*Special courses which may be applied toward the M.A. degree requirements with advanced departmental approval. These courses do not have any exclusive focus on Latin America but provide an opportunity for students to relate a particular perspective or phenomenon to Latin America.

## Linguistics

3125 Campbell Hall, (310) 825-0634

### Professors

Raimo A. Anttila, Ph.D. (*Indo-European and General Linguistics*)

Susan R. Curtiss, Ph.D.

Bruce P. Hayes, Ph.D.

Thomas J. Hinnebusch, Ph.D. (*Linguistics, African Languages*)

Patricia A. Keating, Ph.D. (*Distinguished Teaching Award*)

Edward L. Keenan, Ph.D.

Pamela L. Munro, Ph.D.

Russell G. Schuh, Ph.D. (*Linguistics, African Languages*, Chair)

Robert P. Stockwell, Ph.D. (*Distinguished Teaching Award*)

William O. Bright, Ph.D., *Emeritus*

Victoria A. Fromkin, Ph.D., *Emerita* (*Distinguished Teaching Award*)

Mazisi R. Kunene, Ph.D., *Emeritus*

Peter N. Ladefoged, Ph.D., *Emeritus* (*Distinguished Teaching Award*)

Paul M. Schachter, Ph.D., *Emeritus* (*Distinguished Teaching Award*)

### Associate Professors

George D. Bedell, Ph.D.

Nina M. Hyams, Ph.D.

Hilda J. Koopman, Ph.D. (*Linguistics, African Languages*)

Dominique L. Sportiche, Ph.D. (*French, General Linguistics*)

Edward P. Stabler, Ph.D.

Donca Steriade, Ph.D.

Timothy A. Stowell, Ph.D.

Anna Szabolcsi, Ph.D., *Acting*

### Assistant Professor

Anoop Mahajan, Ph.D.

### Adjunct Professor

Ian Maddieson, Ph.D.

## Scope and Objectives

The goal of linguistics is the enrichment of knowledge about the nature, grammar, and history of human language. Linguistics is a theoretical discipline, akin to philosophy, anthropology, and cognitive psychology. It is important for prospective students to understand that studying linguistics is not a matter of learning to speak

many languages. Linguistics courses draw examples from the grammars of a wide variety of languages, and the more languages linguists know about in depth (as distinct from possessing fluency in the use of them), the more likely they are to discover universal properties. It is also possible to pursue these universal aspects of human language through the intensive in-depth study of a single language. This accounts for the high proportion of examples from English and familiar European languages found in linguistics courses and research publications.

The core areas of linguistic theory are phonology (with its roots in phonetics), morphology, syntax, and semantics. A grammar is a system of rules which characterize the phonology, morphology, syntax, and semantics of a natural language. The properties of grammars are the central focus of linguistic theory.

Because language is central to all humanistic disciplines, as well as to several social science areas, it is studied from many points of view. Linguistics itself cannot be said to recognize a single optimal approach to the subject. Hence, the courses provide a variety of approaches which reflect the diversity of the field.

In a recent survey conducted by the Conference Board of the Associated Research Councils, UCLA's Linguistics Department was judged second best in the nation in the quality of its faculty. It offers programs leading to the Bachelor of Arts, Master of Arts, and Ph.D. degrees.

## Undergraduate Study

The majors described below are of three types: (1) a major which concentrates entirely on general linguistics, (2) several majors which combine the basic courses of the general program with a language concentration or other related fields, and (3) a major which concentrates entirely on an African language area. The combined majors in conjunction with instructional certification programs are especially appropriate for students who have nonuniversity teaching careers as goals, and the African major is for students with specific African interests.

A 2.0 grade-point average in linguistics courses is required for all Linguistics Department majors.

## Bachelor of Arts in Linguistics

This major is designed for students with an exceptional interest in and aptitude for the study of languages and linguistics. It enables the undergraduate to gain substantial familiarity with several languages and types of linguistic structure and to become conversant with the historical study of language and formal theories of linguistics.

### Preparation for the Major

*Required:* Linguistics 20; two of the following: Philosophy 31, Psychology 10, one cultural anthropology course; completion of the equivalent of the sixth term in each of two foreign languages or the sixth term in one foreign language and the third term in each of two other foreign languages.

If you complete an advanced language course, you are considered to have completed the equivalent of whatever courses are prerequisite to that one (e.g., if you complete French 100, you have automatically satisfied the requirement of the sixth term of work in one language). You are required to complete at least the equivalent of the third term in a language other than those in the Romance, Slavic, or Germanic families. This requirement may be satisfied either as part of or in addition to the language requirement described in the preceding paragraph.

### The Major

*Required:* A minimum of 13 upper division or graduate courses, including Linguistics 103, 110, 120A, 120B, and two courses from 125, 165A, 165B (you may substitute courses 200A and 200B for 165A and 165B respectively if you receive grades of A in 120A and 120B respectively and have consent of instructor). Both courses 165A and 165B, or 200A and 200B, are recommended for students planning linguistics graduate work. The remaining seven courses are electives, three of which must be linguistics courses. The other four may be in linguistics or in certain other fields as listed below. Electives have generally been selected from the following list (courses not on the list may be used as electives only in consultation with an adviser): Linguistics 104, 114, M115, 125, 127, 130, C135, 140, M146, M150, 160, 165A (or 200A for qualified students), 165B (or 200B for qualified students), 170, 175, M176A, C180, C185A, C185B, 195, 196A, 196B, 199 (if four units), African Languages M190, Anthropology 143, English 121, 122, Philosophy 127A, 127B, 172, Psychology 122, 123, or upper division courses in a foreign language beyond the sixth term. Not all of these elective courses are necessarily given every year; consult an adviser regarding electives to be offered in a given year.

Linguistics 195 or 196A/196B are recommended for students planning to pursue graduate work in linguistics, since they provide an opportunity to engage in independent research and to write a paper which can be submitted to graduate admissions committees. To enroll in the courses, you must consult with the department's senior essay and honors counselor.

### Specialization in Computing

Students in any of the linguistics majors (except linguistics and computer science) may select a specialization in computing by (1) satisfying all the requirements for a bachelor's degree in the specified major and (2) completing Program in Computing 10A, 10B, 10C, 60, Linguistics C180,

C185A. You graduate with a bachelor's degree in your major and a specialization in computing.

### Honors Program

Honors in linguistics are awarded at graduation to those students who have a grade-point average of 3.6 or better in their junior and senior years and who have received a grade of A in Linguistics 195 or 196A/196B. Qualified students may be proposed by any member of the faculty to the faculty as a whole for the award of highest honors on the basis of a piece of research in linguistics completed at UCLA.

### Bachelor of Arts in Linguistics and Anthropology

#### Preparation for the Major

*Required:* Linguistics 20, completion of the sixth term in each of two foreign languages or the sixth term in one foreign language and the third term in each of two other foreign languages (at least three terms must be in a language other than those in the Romance, Slavic, and Germanic families). Anthropology 33 is strongly recommended, when offered.

#### The Major

*Required:* Thirteen upper division courses as follows: Linguistics 103, 110, 120A, 120B or 127, 125, 170, one other upper division linguistics course (recommended: 114), Anthropology M140, 144 or 145, one course from Anthropology 141, 142A, 143, or Sociology CM124A, and three upper division electives from Anthropology 141, 142A, 143, 144, 145, the 130 series (one course only), the 170 series (one course only), Sociology CM124A, CM124B. Linguistics 165A and 165B (or 200A and 200B with grades of A in 120A and 120B respectively and consent of instructor) are recommended for students planning to pursue graduate work in linguistics.

### Bachelor of Arts in Linguistics and Computer Science

#### Premajor in Linguistics and Computer Science

Admission to the major is contingent on passing the following courses, which constitute the linguistics and computer science premajor, with a grade-point average of 3.3 or better and no grade lower than a C: Linguistics 20, Philosophy 31, Program in Computing 10A, 10B, 10C.

#### Preparation for the Major

*Required:* Linguistics 20, Mathematics 31A, 31B, Philosophy 31, Program in Computing 10A, 10B, 10C, 30, completion of the sixth term in one foreign language and the third term in a second foreign language. Mathematics 31A and 31B must be passed with grades of C or better. Mathematics 61 is strongly recommended.

### The Major

*Required:* Fourteen upper division courses as follows: Linguistics 103, 104, 120A, 120B, 125, 165A or 165B (or 200A or 200B with a grade of A in 120A or 120B respectively and consent of instructor; 165B/200B are most strongly recommended for this major), C180, C185A, C185B, Computer Science 131, 132, 141, 161 or 163, 181.

### Bachelor of Arts in Linguistics and East Asian Languages and Cultures

#### Preparation for the Major

*Required:* Completion of the sixth term in either Chinese or Japanese; Linguistics 20, Philosophy 31; one cultural anthropology course; either Chinese 50 or Japanese 50, as appropriate; completion of the sixth term in one other foreign language or the third term in each of two other foreign languages.

#### The Major

*Required:* Linguistics 103, 110, 120A, 120B, 165A or 165B (or 200A or 200B with a grade of A in 120A or 120B respectively and consent of instructor), one upper division elective in linguistics; for the classical Japanese track: Japanese 100A-100B, CM122, 140A-140B-140C, 149; for the modern Japanese track: Japanese 100A-100B-100C, 120, CM122, 130B; for the classical Chinese track: Chinese 110A-110B-110C, four courses from 140A, 140B, 140C, 143A, 143B; for the modern Chinese track: Chinese 100A-100B-100C, four courses from 101A, 101B, 101C, 130A, 130B, 145A, 145B.

### Bachelor of Arts in Linguistics and English

#### Preparation for the Major

*Required:* Linguistics 20, English 3, 10A, 10B, 10C, Philosophy 31, completion of the sixth term in each of two foreign languages or the sixth term in one foreign language and the third term in each of two other foreign languages.

#### The Major

*Required:* Fourteen upper division courses as follows: Linguistics 103, 110, 120A, 120B, 165A or 165B (or 200A or 200B with a grade of A in 120A or 120B respectively and consent of instructor), two upper division electives in linguistics, English 121, 122, 140A, and four electives from 141A, 141B, 142A, 142B, 143, the 150 series (one course only), the 160 series (one course only), the 170 series (one course only).

## Bachelor of Arts in Linguistics and French

### Preparation for the Major

*Required:* Linguistics 20, French 1, 2, 3, 4, 5, 6, 12, 15, completion of the sixth term in one other foreign language or the third term in each of two other foreign languages.

### The Major

*Required:* Fifteen upper division courses as follows: Linguistics 103, 110, 120A, 120B, 165A or 165B (or 200A or 200B with a grade of A in 120A or 120B respectively and consent of instructor), two upper division electives in linguistics, French 100, 101, 102, 103, 105, 107, and two elective upper division French literature courses.

## Bachelor of Arts in Linguistics and Italian

### Preparation for the Major

*Required:* Linguistics 20, Italian 1, 2, 3, 4, 5, 25, Latin 1, 2, 3, completion of the third term in one other foreign language or the sixth term in Latin, Philosophy 31, one cultural anthropology course.

### The Major

*Required:* Twelve upper division courses as follows: Linguistics 103, 110, 120A, 120B, 165A or 165B (or 200A or 200B with a grade of A in 120A or 120B respectively and consent of instructor), two upper division electives in linguistics, Italian 102A, 190, and three upper division electives in Italian.

## Bachelor of Arts in Linguistics and Philosophy

### Preparation for the Major

*Required:* Linguistics 20, Philosophy 31, 32, and two courses from 1, 6, 7, 21; completion of the sixth term in each of two foreign languages or the sixth term in one foreign language and the third term in each of two other foreign languages.

### The Major

*Required:* Thirteen upper division courses as follows: Linguistics 103, 120A, 120B, 165B (or 200B with a grade of A in 120B and consent of instructor), three upper division electives in linguistics; six upper division courses in philosophy, including at least five from Philosophy 126A through 135B, 170, 172, 184, 186, 187, 188, of which at least two must be from 127A, 127B, 172.

## Bachelor of Arts in Linguistics and Psychology

### Preparation for the Major

*Required:* Linguistics 20, Psychology 10, 41, 42, completion of the sixth term in one foreign

language and the third term in a second foreign language. Program in Computing 10A is strongly recommended.

### The Major

*Required:* Twelve upper division courses as follows: Linguistics 103, 120A, 120B, 130, two upper division electives in linguistics, Psychology 110, 120, 121, 123, 130, and an elective to be selected from 112A, 112B, 112C, 115, 116, 124B, 135. Linguistics 165A or 165B (or 200A or 200B with a grade of A in 120A or 120B respectively and consent of instructor) and Psychology 115 are strongly recommended.

## Bachelor of Arts in Linguistics and Scandinavian Languages

### Preparation for the Major

*Required:* Linguistics 20, Scandinavian 1, 2, 3, 4, and 5, or 11, 12, 13, 14, and 15, or 21, 22, 23, 24, and 25, 30, completion of the sixth term in one other foreign language or the third term in each of two other foreign languages.

### The Major

*Required:* Thirteen upper division courses as follows: Linguistics 103, 110, 120A, 120B, 165A or 165B (or 200A or 200B with a grade of A in 120A or 120B respectively and consent of instructor), two upper division electives in linguistics, Scandinavian 105 and 106, or 110 twice, 199 (in a topic related to Scandinavian linguistics, under the direction of a Scandinavian or Linguistics faculty member), and three upper division electives in Scandinavian.

## Bachelor of Arts in Linguistics and Spanish

### Preparation for the Major

*Required:* Linguistics 20, Spanish 1, 2, 3, 4, 5, 25, M42, M44, completion of the sixth term in one other foreign language or the third term in each of two other foreign languages.

### The Major

*Required:* Fourteen upper division courses as follows: Linguistics 103, 110, 120A, 120B, 165A or 165B (or 200A or 200B with a grade of A in 120A or 120B respectively and consent of instructor), two additional upper division courses in linguistics (preferably 130 and 170), Spanish 100A-100B, 115 or M118A, 119A, 119B, and two additional upper division Spanish courses.

## Bachelor of Arts in African Languages

### Preparation for the Major

*Required:* Linguistics 20, nine courses from African Languages 1A through 42C and 199 (six in one language and three in another).

## The Major

*Required:* A minimum of 13 upper division courses, including three courses in an African language; African Languages 150A-150B, M190, Linguistics 103; three courses selected from English 114, Ethnomusicology and Systematic Musicology 136A, 136B, Geography 189, History 125A, 125B, 125C, 126A, 126B, 127A, 127B, 128A, 128B, Linguistics 110, 120A, 120B or 127, 140, M146, 170, Political Science 166A, 166B, 166C. Linguistics 165A or 165B (or 200A or 200B with a grade of A in 120A or 120B respectively and consent of instructor) and completion of the sixth term in one of the following non-African languages are strongly recommended: Afrikaans, Arabic, Dutch, French, German, Portuguese.

## Graduate Study

The programs leading to the M.A. and Ph.D. degrees in Linguistics are open to qualified graduate students who are interested in descriptive, theoretical, and historical linguistics. Preparation for graduate study in linguistics should be equivalent in as many respects as possible to the undergraduate curriculum in linguistics.

There is also a graduate program leading to a Ph.D. in Applied Linguistics. It is administered by an interdepartmental committee, not by the Department of Linguistics. The requirements of the program are stated earlier in this chapter.

## Master of Arts Degree

### Admission

Students are normally admitted to begin residence in Fall Quarter only (exceptions may be made by the chair). The deadline for submission of applications for Fall Quarter is December 15 of the previous year. This deadline may occasionally be extended for applicants who do not wish to be considered for fellowship support.

Applicants are asked to submit a statement of purpose, which should include their background for graduate study in linguistics and their immediate and long-range goals in the field. They should also have three scholars under whom they have studied submit letters to the department about their qualifications. Scores on the verbal, quantitative, and analytical sections of the Graduate Record Examination (GRE) must be submitted with the application. There is no minimum score requirement. In addition, applicants must submit a copy of some research paper or other piece of writing in linguistics or a closely related field.

While not required for admission, Linguistics 103, 110, 120A, 120B, 165A, 165B are prerequisites to graduate courses in their respective areas. At the time of admission, students are notified which, if any, of the above courses are required due to deficiencies. However, if there is any question of whether courses taken elsewhere are equivalent to the above courses, students must discuss this with their advisers.

Prospective students may request an information brochure from the Administrative Analyst, Department of Linguistics, 3125 Campbell Hall, UCLA, Los Angeles, CA 90024-1543. This brochure explains, in particular, advising methods and procedures for the formation of M.A. and Ph.D. guidance committees.

### Specialization

At the M.A. level, three survey courses in phonology, syntax, and language change are required. You must also select four additional survey courses from a list of 11. These choices allow for a certain amount of specialization. The remaining two courses (of the nine graduate courses required) may be in any area of linguistics and provide additional opportunities for specialization.

### Foreign Language Requirement

You must demonstrate knowledge of one research language before receiving the M.A. and a second research language before advancement to candidacy. Knowledge can be demonstrated by one of four methods: (1) a reading examination administered by the department, (2) a research paper based on extensive sources in the language, (3) a conversation examination showing knowledge in depth, (4) a Graduate School Foreign Language Test (GSFLT) with a score of 650 or better. One of the languages must have substantial literature on linguistics; the other may serve as a contact language for field research. The latter option must be approved by the departmental language committee. Native speakers of languages other than English may use English to meet one of the foreign language requirements. If this is done, the second language must be other than the native language. The departmental brochure provides details about the departmentally administered language examinations.

### Course Requirements

The M.A. degree requires the completion, with a B average or better, of nine graduate courses in linguistics. All students, regardless of prior background, are required to take Linguistics 200A, 200B, 201, 202, and 206. The remaining four survey courses must be selected from Linguistics 203 through 218. All first-year graduate students must take courses 411A-411B, and all second-year students who have not yet been admitted to the Ph.D. program must take course 444.

The following undergraduate courses or the equivalent are prerequisite to graduate courses in the corresponding areas: Linguistics 103, 110, 120A, 120B, 165A, 165B. Course 103, or an examination in practical phonetics, must be passed with a grade of B or better as a prerequisite to course 210A, a required course for the Ph.D. that may be taken at the pre-M.A. level. A proficiency examination in elementary logic, which may be waived on the basis of appropriate coursework, is prerequisite to course 206.

No more than two courses (with grades of B or better) from institutions outside the University of California may be applied toward the M.A.

You must complete all degree requirements in a maximum of seven regular academic terms.

### Thesis Plan

After completing the required courses and the foreign language examination, students selecting this plan submit a thesis based on original research to a thesis committee for approval. All students intending to proceed to the Ph.D. must adopt this plan.

If you wish to be considered for advancement into the doctoral program, a copy of the thesis, complete and clearly legible, but not necessarily in final typed form, must be in the hands of the committee at least two weeks before the last day of classes in the term. Limits on the length of the thesis are stipulated in the departmental brochure.

Requirements for receiving an M.A. include the filing of a Petition for Advancement to Candidacy form early in the term during which you expect to take the degree. The thesis must be typed according to regulations set by the University. Information on these regulations and procedures is available from the Graduate Division.

### Comprehensive Examination Plan

After completing the required courses and the foreign language examination, you must pass a comprehensive examination administered by a four-member committee of the faculty, appointed by the chair. This is normally an oral examination, general in scope, and results in a terminal M.A. degree.

### Ph.D. Degree

#### Admission

General admission requirements are the same as those listed for the M.A. Students who have done their earlier graduate work at UCLA are considered for admission into the Ph.D. program on the basis of the following: (1) completion of all requirements for the M.A. and (2) the faculty's evaluation of the quality of the M.A. thesis and of the student's overall work and promise.

If you have already received an M.A. in Linguistics from another department or institution, you must fulfill all the requirements expected of an M.A. candidate, including the coursework, unless work elsewhere is equivalent and satisfies the course requirements. Then there are two possible procedures: (1) you may submit a master's thesis written at another institution or department or (2) if you have not written a thesis elsewhere, you must submit a paper equal in depth and scope to a thesis. In either case an evaluation committee is appointed and, once the committee has approved the thesis or paper, it is submitted to the entire faculty who evaluates its quality and your accomplishments and promise.

### Major Fields or Subdisciplines

You may specialize in syntax, semantics, phonology, phonetics, language change, morphology, typology, sociolinguistics, neurolinguistics, psycholinguistics, computational linguistics, and many language areas, notably African languages and American Indian languages. Other specializations may be possible, depending on the availability of faculty expertise.

### Foreign Language Requirement

A doctoral committee cannot be officially appointed until the foreign language requirement has been met. Details are given above under the "Foreign Language Requirement" for the M.A. degree.

### Course Requirements

Candidates for the Ph.D. are required to have taken 36 units of graduate coursework beyond the M.A. requirements. These units must include Linguistics 210A, 210B, and eight units in an area distinct from that of your major area of concentration. The 36 units may not include courses 275, 597, or 599. Of the 36 units, no more than 12 units may be in course 596A. A maximum of four two-unit seminars may be included in the 36 units. At some time, you are expected to present some of the results of your research at a meeting of the Linguistics Department Colloquium. This is a requirement for the degree.

### Qualifying Examinations

In order to be advanced to candidacy, you are required to prepare two original research papers in different areas or fields of linguistics. These papers are to be submitted to and approved by a doctoral guidance committee. A written prospectus of the dissertation must be submitted to the guidance committee, with a copy for the department file, one month prior to the oral examination. At this time, provided the language requirement has been met, an official doctoral committee must be established.

The University Oral Qualifying Examination is administered by the doctoral committee, based primarily on the topic of the dissertation research. The examination deals with the background necessary for you to pursue research on the specific topic. Reexamination is possible on recommendation of the committee. You are expected to take the examination and be advanced to candidacy no later than six terms after being admitted to the doctoral program.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Final Oral Examination

A final defense of the dissertation is required. The defense is not restricted to the doctoral committee and is scheduled at a time, and with advance notice, that will enable a substantial number of students and faculty to attend.



## General Linguistics

### Lower Division Courses

**1. Introduction to Study of Language.** Summary, for general undergraduates, of what is known about human language; unique nature of human language, its structure, its universality, and its diversity; language in its social and cultural setting; language in relation to other aspects of human inquiry and knowledge.

(F,W,Sp)

**10. Structure of English Words.** Lecture, three to four hours. Introduction to structure of English words of classical origin, including most common base forms and rules by which alternate forms are derived. Students may expect to achieve substantial enrichment of their vocabulary while learning about etymology, semantic change, and abstract rules of English word formation.

Mr. Stockwell (W)

**20. Introduction to Linguistics.** (Formerly numbered 100.) Lecture, four hours; discussion, one hour. Introduction to theory and methods of linguistics: universal properties of human language; phonetic, phonological, morphological, syntactic, and semantic structures and analysis; nature and form of grammar.

(F,W,Sp)

**88. Lower Division Seminar.** Seminar, three hours. Limited to freshmen. Variable topics; consult *Schedule of Classes*, College of Letters and Science, or department for topics to be offered in a specific term. May be repeated for credit.

**99. Special Studies in Linguistics (2 to 4 units).** Prerequisite: consent of instructor. Supervised research or training. May be repeated for credit. P/NP or letter grading.

### Upper Division Courses

**103. Introduction to General Phonetics.** Lecture, three hours; laboratory, two hours. Prerequisite: one prior linguistics course or course 20 concurrently. Phonetics of a variety of languages and phonetic phenomena that occur in languages of the world. Extensive practice in perception and production of such phenomena.

Ms. Keating (F,W)

**104. Experimental Phonetics.** Lecture, four hours; discussion, one hour. Prerequisite: course 103. Survey of principal techniques of experimental phonetics. Use of laboratory equipment for recording and measuring phonetic phenomena.

Ms. Keating

**110. Introduction to Historical Linguistics.** Prerequisites: courses 20, 103, 120A. Methods and theories appropriate to historical study of language, such as comparative method and method of internal reconstruction. Sound change, grammatical change, semantic change.

Mr. Anttila, Mr. Bedell, Ms. Munro (F,Sp)

**114. American Indian Linguistics.** Strongly recommended (but not prerequisite): course 20. Survey of genetic, areal, and typological classifications of American Indian languages; writing systems for American Indian languages; American Indian languages in social and historical context. One or more languages may be investigated in detail.

Ms. Munro (W or Sp)

**M115. Survey of African Languages.** (Same as African Languages M190.) Prerequisite: course 20. Introduction to languages of Africa, their distribution and classification, and their phonological and grammatical structures; elementary practice in several languages.

Ms. Koopman, Mr. Schuh

**120A. Phonology I.** Prerequisites: courses 20, 103. Introduction to phonological theory and analysis. Rules, representations, underlying forms, derivations. Justification of phonological analyses. Emphasis on practical skills with problem sets.

Mr. Hayes, Ms. Steriade (W,Sp)

**120B. Syntax I.** Prerequisite: course 20. Course 120A is not prerequisite to 120B. Descriptive analysis of morphological and syntactic structures in natural languages; emphasis on insight into nature of such structures rather than linguistics formalization.

Mr. Sportiche, Mr. Stowell (F,W)

**125. Semantics.** Lecture, four hours; discussion, one hour. Prerequisite: course 120B. Survey of most important theoretical and descriptive claims about the nature of meaning.

Mr. Keenan, Ms. Szabolcsi

**127. Syntactic Typology and Universals.** Prerequisite: course 20. Study of essential similarities and differences among languages in grammatical devices they use to signal the following kinds of concepts: relations between nouns and verbs (case and word order), negation, comparison, existence/location/possession, causation, interrogation, reflexivization, relativization, attribution (adjectives), time (tense and aspect), and backgrounding (subordination). Data from a range of languages presented and analyzed.

Mr. Keenan

**130. Child Language Acquisition: Introduction.** Prerequisites: courses 20, 120A, and 120B, or consent of instructor. Survey of contemporary research and theoretical perspectives in acquisition of language. Emphasis on linguistic interpretation of existing data, with some attention to relationship with second language learning, cognitive development, and other topics. Discussion of acquisition of English and other languages and universals of linguistic development.

Ms. Curtiss, Ms. Hyams

**132. Introduction to Psycholinguistics.** Prerequisites: courses 20, 120A, 120B. Central issues in language comprehension and production, with emphasis on how theories in linguistics inform processing models. Topics include word understanding (with emphasis on spoken language), parsing, anaphora and inferencing, speech error models of sentence production, and computation of syntactic structure during production.

**C135. Theoretical Issues in Disorders of Language Development.** Prerequisites: courses 1 or 20, and 130, or consent of instructor. Introduction to the field of language disorders of children. Some clinical syndromes which are associated with delayed or deviant language acquisition: aphasia, autism, mental retardation. Theories regarding etiology and relationship of these disorders to each other. Such questions as relationship of cognition to linguistic ability. Concurrently scheduled with course C235.

Ms. Curtiss

**140. Linguistics in Relation to Language Teaching.** Prerequisites: courses 120A, 120B. Aspects of linguistics in relation to teaching of language, with particular focus on special problems entailed in teaching non-European languages.

Mr. Schuh, Mr. Stockwell

**M146. Language in Culture.** (Same as Anthropology M140.) Prerequisite: upper division standing or consent of instructor. Study of language as an aspect of culture; relation of habitual thought and behavior to language; and language and the classification of experience. Holistic approach to study of language, with emphasis on relationship of linguistic anthropology to fields of biological, cultural, and social anthropology, as well as archaeology.

Mr. Kroskrity

**M150. Introduction to Indo-European Linguistics.** (Same as Indo-European Studies M150.) Prerequisites: one year of college-level study (course 3 or better, eight units minimum) of either Greek or Latin and either German or Russian. Survey of Indo-European languages from ancient to modern times; their relationships and chief characteristics.

Mr. Anttila (Sp)

**160. Field Methods (6 units).** Discussion, four hours; individual or group sessions, one to two hours. Prerequisites: courses 103, 120A, 120B. Analysis of a language unknown to members of class from data elicited from a native speaker of the language.

Ms. Koopman, Ms. Munro

**165A. Phonology II.** (Formerly numbered C165A.) Prerequisite: course 120A (undergraduates with grade of A in course 120A may replace course 165A with 200A, with consent of instructor). Further study in phonological theory and analysis: autosegmental theory, syllable structure, metrical theory, interface of phonology and grammar.

Mr. Hayes, Ms. Steriade (Sp)

**165B. Syntax II.** (Formerly numbered C165B.) Prerequisite: course 120B. Recommended for students who plan to do graduate work in linguistics. Form of grammar, word formation, formal and substantive universals in syntax, relation between syntax and semantics.

Ms. Koopman, Mr. Sportiche, Mr. Stowell (Sp)

**170. Language and Society: Introduction to Sociolinguistics.** Prerequisite: course 20 or consent of instructor. Study of patterned covariation of language and society; social dialects and social styles in language; problems of multilingual societies.

Mr. Stockwell

**175. Linguistic Change in English.** Prerequisites: courses 110, 120A, 120B. Principles of linguistic change as exemplified through detailed study of history of English pronunciation, lexicon, and syntax.

Mr. Stockwell

**M176A. Structure of Japanese I.** (Formerly numbered M176.) (Same as Japanese CM122.) Lecture, three hours. Prerequisites: Japanese 120 or equivalent or consent of instructor, two years of Japanese. Discussion of many seemingly idiosyncratic characteristics of Japanese syntax and semantics in light of word-order typology and universal grammar, often in form of a contrastive analysis of Japanese and English.

Ms. Akatsuka

**M176B. Structure of Japanese II.** (Same as Japanese CM123.) Lecture, three hours. Prerequisite: two or more years of Japanese language study or consent of instructor. Survey of Japanese language at three different levels of organization: (1) word level — word class, verbal morphology and semantics; (2) clause/sentence level — tense, aspect, modality; (3) discourse level — point of view, ellipsis, topicalization.

Mr. Iwasaki

**M177. Structure of Korean.** (Same as Korean CM120.) Lecture, three hours. Prerequisites: two years of Korean, or one year of Korean and some knowledge of linguistics. Discussion of major syntactic, semantic, and pragmatic characteristics of Korean in light of linguistic universals, with brief introduction to formation, typological features, and phonological structure of Korean.

Ms. Sohn

**M178. Contrastive Analysis of Japanese and Korean.** (Same as Japanese CM127 and Korean CM127.) Lecture, three hours. Prerequisites: two years of Japanese or Korean, one introductory linguistics course. Critical reading and discussion of selected current research papers in syntax, pragmatics, discourse, and sociolinguistics from perspective of contrastive study of Japanese and Korean. May be repeated for credit with consent of instructor.

Ms. Akatsuka, Ms. Sohn

**C180. Mathematical Linguistics I.** Prerequisites: courses 120A, 120B, 165B/200B (may be taken concurrently). Prior mathematics knowledge not assumed. Introduction to selected topics in set theory, logic and formal systems, modern algebra, and automata theory, with elementary applications to linguistics. Topics vary each term. Concurrently scheduled with course C208.

Mr. Keenan (F)

**C185A. Natural Language Processing I.** (Formerly numbered 185.) Prerequisites: courses 120B, C180, Program in Computing 10B. Recommended: course 165B or 200B, Program in Computing 60. Survey of recent work on natural language processing, including basic syntactic parsing strategies, with brief glimpses of semantic representation, reasoning, and response generation. Concurrently scheduled with course C209A.

Mr. Stabler (W)

**C185B. Natural Language Processing II.** Prerequisite: course C185A/C209A or consent of instructor. Extensions of basic language processing techniques to natural language processing. Recent models of syntactic, semantic, and discourse analysis, with particular attention to their linguistic sophistication and psychological plausibility. Concurrently scheduled with course C209B.

Mr. Stabler (Sp)

**195. Senior Essay.** Prerequisite: consent of instructor. Limited to senior linguistics majors. Extended piece of writing is undertaken on a linguistic topic selected by the student to be completed under supervision of a faculty member. Consult professor in charge to enroll.

**196A. Honors Essay.** Prerequisites: 3.5 GPA, course 165A/200A or 165B/200B (may be taken concurrently). Recommended (but not required): completion of both courses 165A and 165B (or 200A and 200B) before or during term in which course 196A is taken. Draft of extended piece of writing on a linguistic topic selected by the student is prepared under supervision of a faculty member. Consult professor in charge to enroll. In Progress grading (credit to be given only on completion of course 196B). (Sp)

**196B. Honors Essay (2 units).** Prerequisite: course 196A. Piece of writing drafted in course 196A is presented in a seminar, revised, and put into final form under supervision of a faculty member. Consult professor in charge to enroll. (F)

**197. Special Topics in Linguistics.** Prerequisite: course 1 or 20 or consent of instructor. Variable topics selected from any undergraduate linguistics course area in which students desire greater in-depth knowledge. May be repeated for credit with topic change.

**199. Special Studies in Linguistics (2 to 4 units).** Prerequisites: courses 120A, 120B, consent of instructor. May be repeated for credit.

## Graduate Courses

**200A. Phonological Theory I.** (Formerly numbered C200A.) Prerequisite: graduate standing in linguistics or grade of A in course 120A or equivalent course in phonology. Courses 200A and 201 form two-course survey of current research in phonological theory. Interaction of phonology with morphology and syntax, syllable structure, stress.

Mr. Hayes, Ms. Steriade (F)

**200B. Syntactic Theory I.** (Formerly numbered C200B.) Prerequisite: graduate standing in linguistics or grade of A in course 120B or equivalent course in syntax. In-depth introduction to selected topics in theory of constituent structure and syntax of predicates, arguments, and grammatical relations. Topics include levels of representation, X-bar theory, case theory, thematic roles, the lexicon, grammatical function-changing rules, head-complement relations.

Ms. Koopman, Mr. Sportiche, Mr. Stowell (F)

**201. Phonological Theory II.** Prerequisite: course 200A. Continuation of course 200A. Second course in two-course survey of current research in phonological theory. Topics include autosegmentalism (tone, tiers, segment structure), feature theory, underspecification, prosodic morphology.

Mr. Hayes, Ms. Steriade (W)

**202. Language Change.** Prerequisites: courses 110, 200A, 200B. Survey of current theories and research problems in language change.

Mr. Anttila, Mr. Stockwell (Sp)

**203. Phonetic Theory.** Prerequisite: course 120A. Preliminaries to speech analysis. Functional anatomy of vocal organs; fundamental principles of acoustics and of acoustic theory of speech production; issues in perception of speech; nature and design of feature systems for phonetic and phonological analysis.

Ms. Keating

**204. Experimental Phonetics.** Prerequisite: course 103 or equivalent. Use of laboratory equipment to investigate articulatory, acoustic, and perceptual properties of speech. Topics include experimental design and statistics; theoretical basis of acoustic structure of speech sounds; computer-based speech processing, analysis, and modeling; perceptual and acoustic evaluation of synthetic speech.

Ms. Keating

**205. Morphological Theory.** Prerequisites: courses 200A, 200B. Survey of current theories and research problems in morphology. Nature of morphological structure; derivational and inflectional morphology; relation of morphology to phonology, syntax, and the lexicon.

Mr. Hayes, Ms. Steriade

**206. Syntactic Theory II.** Prerequisite: course 200B or consent of instructor. In-depth introduction to selected topics in theory of movement processes and topics selected from following areas: WH-movement and related rules, subadjacency and other constraints on movement; ECP and related conditions on distribution of empty categories; resumptive pronoun constructions; parametric variation in movement constructions; LF WH-movement; filters; reconstruction; parasitic gaps; barriers theory; control theory; null subject parameter.

Ms. Koopman, Mr. Sportiche, Mr. Stowell (W)

**207. Formal Semantics.** Prerequisite: course C180/C208 or equivalent. Survey of current approaches to model-theoretic semantics and its relation to current linguistic theory. Approaches include generalized categorial grammars, Montague grammar, Boolean-based systems, generalized quantifier theory, logical form.

Mr. Keenan

**C208. Mathematical Linguistics I.** Prerequisites: courses 120A, 120B, 165B/200B (may be taken concurrently). Prior mathematics knowledge not assumed. Introduction to selected topics in set theory, logic and formal systems, modern algebra, and automata theory, with elementary applications to linguistics. Topics vary each term. Concurrently scheduled with course C180. Graduate students expected to complete additional problem sets.

Mr. Keenan (F)

**C209A. Natural Language Processing I.** (Formerly numbered 209.) Prerequisites: courses 120B, C180, Program in Computing 10B. Recommended: course 165B or 200B, Program in Computing 60. Survey of recent work on natural language processing, including basic syntactic parsing strategies, with brief glimpses of semantic representation, reasoning, and response generation. Concurrently scheduled with course C185A.

Mr. Stabler (W)

**C209B. Natural Language Processing II.** (Formerly numbered 209.) Prerequisite: course C185A/C209A or consent of instructor. Extensions of basic language processing techniques to natural language processing. Recent models of syntactic, semantic, and discourse analysis, with particular attention to their linguistic sophistication and psychological plausibility. Concurrently scheduled with course C185B.

Mr. Stabler (Sp)

**210A. Field Methods I (6 units).** Prerequisites: courses 200A, 200B, grade of B or better in course 103 or in examination on practical phonetics. Analysis of a language unknown to members of class from data elicited from a native speaker of the language. Term papers to be relatively full descriptive sketches of the language. May be repeated for credit with topic change.

Ms. Koopman, Ms. Munro

**210B. Field Methods II (6 units).** Prerequisite: course 210A in preceding term. Because different languages are investigated in different years, course 210B can only be taken as direct continuation of 210A in same year. When there are multiple sections, continuation must be in same section. May be repeated for credit with topic change.

Ms. Koopman, Ms. Munro

**212. Learnability Theory.** (Not the same as course 212 prior to Fall Quarter 1990.) Prerequisite: course C180/C208 or consent of instructor. Survey of some of most significant results on capabilities of learners, given precise assumptions about their memory, time, and computational power, and precise assumptions about information provided by the environment.

Ms. Hyams, Mr. Stabler

**213. Psycholinguistics.** Prerequisites: courses 200A, 200B. Survey of recent empirical and theoretical research in several subareas of psycholinguistics, including grammatical and lexical development in first language acquisition; psycholinguistic models of grammatical processing, especially syntactic parsing; brain bases for language acquisition; language breakdown.

Ms. Hyams

**214. Survey of Current Syntactic Theories.** Prerequisite: course 206. Survey of several current syntactic theories, compared with one another and with theory discussed in course 206, from point of view of theories' relative descriptive and explanatory power.

Mr. Stowell

**215. Syntactic Typology.** Prerequisite: course 200B. Current results in word-order universals; genetic classification of the world's languages; cross-language properties of specific construction types, including relative clauses, passives, positive and negative conference systems, agreement systems, deixis systems, and types of sentence complements.

Mr. Keenan

**216. Syntactic Theory III.** Prerequisite: course 206 or consent of instructor. Selected topics on syntactic theories of anaphora and quantification from the following areas: typology of binding categories (pronouns, anaphors, etc.); theory of locality conditions in binding theory; parametric variation in binding; quantifier movement; existential quantification and unselective binding; strong and weak crossover; superiority; scope interactions; complex quantifier structures.

Ms. Koopman, Mr. Sportiche, Mr. Stowell (Sp)

**218. Mathematical Linguistics II.** Prerequisite: course C180/C208 or consent of instructor. Applications of automata and formal language theory to natural language: Chomsky hierarchy; whether natural languages are finite state, context free, context sensitive; categorial grammar, indexed grammar, ID/LP grammar, tree adjoining grammar, feature systems, languages as models of first-order theories.

Mr. Keenan, Mr. Stabler

**220. Linguistic Areas.** Prerequisites: courses 120A, and 120B or 127. Recommended: courses 165A/200A, 165B/200B. Analysis and classification of languages spoken in a particular area (e.g., Africa, the Balkans, South Asia, Southeast Asia, Australia, Aboriginal North America, Aboriginal South America, Far East, etc.). May be repeated for credit with topic change.

**225. Linguistic Structures.** Prerequisites: courses 120A, and 120B or 127. Recommended: courses 165A/200A, 165B/200B. Phonological and grammatical structure of a selected language and its genetic relationships to others of its family. May be repeated for credit with topic change.

**230. History of Linguistics.** Prerequisites: courses 200A, 200B. Aspects of history of linguistics. Different course offerings may deal with different areas of linguistics (e.g., phonology, syntax) or with different historical periods. May be repeated for credit with topic change.

**C235. Theoretical Issues in Disorders of Language Development.** Prerequisites: courses 1 or 20, and 130, or consent of instructor. Introduction to the field of language disorders of children. Some clinical syndromes which are associated with delayed or deviant language acquisition: aphasia, autism, mental retardation. Theories regarding etiology and relationship of these disorders to each other. Such questions as relationship of cognition to linguistic ability. Concurrently scheduled with course C135. Graduate students expected to apply more sophisticated knowledge and produce research paper of greater depth.

Ms. Curtiss

**M246C. Topics in Linguistic Anthropology.** (Same as Anthropology M241.) Prerequisite: consent of instructor. Problems in relations of language, culture, and society. May be repeated for credit.

Proseminars numbered 251 through 254 may be taken for either two or four units. If a proseminar is taken for four units, a paper is required. Proseminars and seminars numbered 251 and above may be repeated for credit, having been approved by the Graduate Council as nonrepetitive in content.

**251. Topics in Phonetics and Phonology I: Proseminar (2 or 4 units).** Lecture, four hours. Prerequisite: course 200A. Course 201, 203, or 204 may be required. Specialized topics in phonetics and phonology. May not be applied toward M.A. or Ph.D. degree requirements when taken for two units. Meets with course 256A. May be repeated for credit. S/U (two-unit course) or letter (four-unit course) grading.

**252. Topics in Syntax and Semantics I: Proseminar (2 or 4 units).** Lecture, four hours. Prerequisite: course 200B. Course 206, 207, 214, 215, or 216 may be required. Specialized topics in syntax and semantics. May not be applied toward M.A. or Ph.D. degree requirements when taken for two units. Meets with course 257A. May be repeated for credit. S/U (two-unit course) or letter (four-unit course) grading.

**253. Topics in Language Variation I: Proseminar (2 or 4 units).** Prerequisite: course 110. Course 202 may be required. Specialized topics in language variation. May not be applied toward M.A. or Ph.D. degree requirements when taken for two units. Meets with course 258A. May be repeated for credit. S/U (two-unit course) or letter (four-unit course) grading.

**254. Topics in Linguistics I: Proseminar (2 or 4 units).** Lecture, four hours. Prerequisites: courses 200A, 200B, consent of instructor. Course 201, 202, 203, 204, 205, 206, 207, C208, C209A, C209B, 212, 213, 214, 215, 216, or 218 may be required. Individual proseminars on topics such as child language, sociolinguistics, neurolinguistics, computational linguistics, psycholinguistics, etc. May not be applied toward M.A. or Ph.D. degree requirements when taken for two units. Meets with course 259A. May be repeated for credit. S/U (two-unit course) or letter (four-unit course) grading.

**256A. Topics in Phonetics and Phonology II: Proseminar.** Prerequisite: course 200A. Course 201, 203, or 204 may be required. Specialized topics in phonetics and phonology. May be repeated for credit. Meets with course 251. In Progress grading (credit to be given only on completion of course 256B).

**256B. Topics in Phonetics and Phonology II: Proseminar (2 units).** Prerequisite: course 256A. Specialized topics in phonetics and phonology. May be repeated for credit.

**257A. Topics in Syntax and Semantics II: Proseminar.** Prerequisite: course 200B. Course 206, 207, 214, 215, or 216 may be required. Specialized topics in syntax and semantics. May be repeated for credit. Meets with course 252. In Progress grading (credit to be given only on completion of course 257B).

**257B. Topics in Syntax and Semantics II: Proseminar (2 units).** Prerequisite: course 257A. Specialized topics in syntax and semantics. May be repeated for credit.

**258A. Topics in Language Variation II: Proseminar.** Prerequisite: course 110. Course 202 may be required. Specialized topics in language variation. May be repeated for credit. Meets with course 253. In Progress grading (credit to be given only on completion of course 258B).

**258B. Topics in Language Variation II: Proseminar (2 units).** Prerequisite: course 258A. Specialized topics in language variation. May be repeated for credit.

**259A. Topics in Linguistics II: Proseminar.** Prerequisites: courses 200A, 200B, consent of instructor. Course 201, 202, 203, 204, 205, 206, 207, C208, C209A, C209B, 212, 213, 214, 215, 216, or 218 may be required. Individual proseminars on topics such as child language, sociolinguistics, neurolinguistics, computational linguistics, psycholinguistics, etc. May be repeated for credit. Meets with course 254. In Progress grading (credit to be given only on completion of course 259B).

**259B. Topics in Linguistics II: Proseminar (2 units).** Prerequisite: course 259A. Individual proseminars on topics such as child language, sociolinguistics, history of linguistic theory, neurolinguistics, languages of the world, psycholinguistics, etc. May be repeated for credit.

Seminars numbered 260A through 264C may be taken for either two or four units. If a seminar is taken for four units, an oral presentation is required. Seminars may be taken for two units credit only by students who have been formally admitted to the doctoral program. All others must enroll for four units.

**260A-260B-260C. Seminars: Phonetics (2 or 4 units each).** Discussion, three hours. Prerequisite: consent of instructor. Each course may be taken independently for credit. May not be applied toward M.A. or Ph.D. degree requirements when taken for two units. May be repeated for credit. S/U grading.

**261A-261B-261C. Seminars: Phonology (2 or 4 units each).** Discussion, three hours. Prerequisite: consent of instructor. Each course may be taken independently for credit. May not be applied toward M.A. or Ph.D. degree requirements when taken for two units. May be repeated for credit. S/U grading.

**262A-262B-262C. Seminars: Syntax and Semantics (2 or 4 units each).** Discussion, three hours. Prerequisite: consent of instructor. Each course may be taken independently for credit. May not be applied toward M.A. or Ph.D. degree requirements when taken for two units. May be repeated for credit. S/U grading.

**263A-263B-263C. Seminars: Language Variation (2 or 4 units each).** Discussion, three hours. Prerequisite: consent of instructor. Each course may be taken independently for credit. May not be applied toward M.A. or Ph.D. degree requirements when taken for two units. May be repeated for credit. S/U grading.

**264A-264B-264C. Seminars: Special Topics in Linguistic Theory (2 or 4 units each).** Discussion, three hours. Prerequisite: consent of instructor. Each course may be taken independently for credit. Special topics may include child language, neurolinguistics, psycholinguistics, sociolinguistics, etc. May not be applied toward M.A. or Ph.D. degree requirements when taken for two units. May be repeated for credit. S/U grading.

**275. Linguistics Colloquium.** Prerequisite: completion of M.A. requirements. Varied linguistic topics, generally presentations of new research by students, faculty, and visiting scholars. S/U grading.

**276. Linguistics Colloquium (No credit).** Prerequisite: graduate standing. Same as course 275, but taken without credit by students not presenting a colloquium. S/U grading.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**403. Practical Phonetics Training (1 unit).** Extensive practice in production, perception, and transcription of sounds from a wide range of languages. Concurrently scheduled with practical sections of course 103. S/U grading. Ms. Keating

**411A-411B. Research Orientation (2 units each).** (Formerly numbered 411A-411B-411C, 433.) Prerequisite: graduate standing. Sequence of lectures by department faculty to acquaint new graduate students with research directions and resources of department and elsewhere on campus. May not be applied toward M.A. or Ph.D. degree requirements. S/U grading. (F,W)

**422. Practicum: Phonetic Data Analysis (2 units).** Prerequisite: graduate standing. Workshop in examination of phonetic data, such as sound spectrograms, oscillographic records, and computer output. May not be applied toward M.A. or Ph.D. degree requirements. S/U grading. Ms. Keating (F,W,Sp)

**444. M.A. Thesis Preparation Seminar.** Student presentations, two hours. Student presentations of proposed topics for M.A. theses, with discussion and criticism by other students and faculty. May not be applied toward M.A. or Ph.D. degree requirements. S/U grading. (F)

**495. College Teaching of Linguistics (2 units).** Prerequisite: graduate standing. Required of all new teaching assistants. Seminars, workshops, and apprentice teaching. Selected topics, including curriculum development, various teaching strategies and their effects, teaching evaluation, and other topics on college teaching. Students receive unit credit toward full-time equivalence but not toward any degree requirements. S/U grading. (Sp)

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596A. Directed Studies (1 to 8 units).** Prerequisite: completion of all undergraduate deficiency courses. Directed individual study or research. May be applied toward M.A. course requirements. May be repeated for credit. S/U grading.

**596B. Directed Linguistic Analysis (1 to 8 units).** Prerequisite: completion of M.A. degree requirements. Intensive work with native speakers by students individually. May be repeated for credit. S/U grading.

**597. Preparation for M.A. Comprehensive and Ph.D. Qualifying Examinations (1 to 8 units).** Prerequisite: at least six graduate courses in linguistics. May be taken only in terms in which students expect to take comprehensive or qualifying examinations. May not be applied toward M.A. course requirements. May be repeated for credit. S/U grading.

**598. Research for M.A. Thesis (1 to 8 units).** Prerequisite: consent of guidance committee chair. Research and preparation of M.A. thesis. May not be applied toward M.A. course requirements. May be repeated for a maximum of eight units. S/U grading.

**599. Research for Ph.D. Dissertation (1 to 16 units).** Prerequisite: advancement to Ph.D. candidacy. May not be applied toward Ph.D. course requirements. May be repeated for credit. S/U grading.

## African Languages

### Lower Division Courses

**1A-1B-1C. Elementary Swahili.** Lecture, five hours. Major language of East Africa, particularly Tanzania. Mr. Hinnebusch

**2A-2B-2C. Intermediate Swahili.** Prerequisites: courses 1A-1B-1C or consent of instructor. Mr. Hinnebusch

**7A-7B-7C. Elementary Zulu.** Lecture, five hours. Most widely spoken of the Nguni languages of South Africa, mutually intelligible with other members of this group.

**8A-8B-8C. Intermediate Zulu.** Prerequisites: courses 7A-7B-7C or consent of instructor.

**11A-11B-11C. Elementary Yoruba.** Lecture, five hours. Prerequisite: consent of instructor. Major language of Western Nigeria.

**12A-12B-12C. Intermediate Yoruba.** Prerequisites: courses 11A-11B-11C or consent of instructor.

**31A-31B-31C. Elementary Bambara.** Lecture, five hours. Prerequisite: consent of instructor. Major language of Mali; also widely spoken in adjacent parts of West Africa; includes Maninka (Malinke), Dyula, and other mutually intelligible dialects. Ms. Koopman

**32A-32B-32C. Intermediate Bambara.** Prerequisites: courses 31A-31B-31C or consent of instructor. Ms. Koopman

**41A-41B-41C. Elementary Hausa.** Lecture, five hours. Major language of Northern Nigeria and adjacent areas. Mr. Schuh

**42A-42B-42C. Intermediate Hausa.** Prerequisites: courses 41A-41B-41C or consent of instructor. Mr. Schuh

**51A-51B-51C. Elementary Amharic.** Lecture, five hours (15 hours for intensive course). Major language of Ethiopia. P/NP (undergraduates), S/U (graduates), or letter grading.

**52A-52B-52C. Intermediate Amharic.** Lecture, five hours (15 hours for intensive course). Prerequisites: courses 51A-51B-51C or consent of instructor. P/NP (undergraduates), S/U (graduates), or letter grading.

**61A-61B-61C. Elementary Wolof.** Lecture, five hours. Major language of Senegambia.

Mr. Schuh

**62A-62B-62C. Intermediate Wolof.** Prerequisites: courses 61A-61B-61C or consent of instructor. P/NP or letter grading.

Mr. Schuh

**97. Elementary and Intermediate Studies in African Languages (1 to 6 units).** Prerequisite: consent of instructor. Instruction at elementary or intermediate level, based on needs of students, in any language for which appropriate facilities are available. Those taught in past included Akan, Efik, Ewe, Fula, Igbo, Lingala, Luganda, and Xhosa.

## Upper Division Courses

**103A-103B-103C. Advanced Swahili.** Prerequisites: courses 2A-2B-2C or consent of instructor. Readings in Swahili literature and the contemporary press. Discussions mainly in Swahili.

Mr. Hinnebusch

**123A-123B-123C. Advanced Yoruba.** Prerequisites: courses 12A-12B-12C or consent of instructor. Readings in Yoruba literature and the contemporary press. Discussions mainly in Yoruba.

**133A-133B-133C. Advanced Bambara.** Prerequisites: courses 32A-32B-32C or consent of instructor. Readings in Bambara literature and the contemporary press. Discussions mainly in Bambara.

Ms. Koopman

**143A-143B-143C. Advanced Hausa.** Prerequisites: courses 42A-42B-42C or consent of instructor. Readings in Hausa literature and the contemporary press. Discussions mainly in Hausa.

Mr. Schuh

**153A-153B-153C. Advanced Amharic.** Lecture, five hours (15 hours for intensive course). Prerequisites: courses 52A-52B-52C or consent of instructor. Readings in Amharic literature and the contemporary press. Discussions mainly in Amharic. P/NP (undergraduates), S/U (graduates), or letter grading.

**M190. Survey of African Languages.** (Formerly numbered 190.) (Same as Linguistics M115.) Prerequisite: Linguistics 20. Introduction to languages of Africa, their distribution and classification, and their phonological and grammatical structures; elementary practice in several languages.

Ms. Koopman, Mr. Schuh

**199. Special Studies in African Languages (1 to 6 units).** Prerequisite: consent of instructor. Instruction at advanced level or supervised research, based on needs of individual students, in any language or group of languages for which appropriate facilities are available.

## Graduate Courses

**202A-202B-202C. Comparative Bantu.** Prerequisites: Linguistics 110, 165A, 165B. Recommended: three quarter courses in one Bantu language selected from courses 1A through 8C, 199. Investigation of relationships among the Bantu languages; extent and external relationships of Bantu.

Mr. Hinnebusch

**596. Directed Studies (1 to 8 units).** Directed individual study or research. Four units may be applied toward M.A. course requirements. May be repeated for credit. S/U grading.

## Indigenous Languages of the Americas

### Lower Division Courses

**18A-18B-18C. Elementary Quechua.** Lecture, five hours. Language of the Incas and its present-day dialects, as spoken in Andean South America.

## Upper Division Courses

**119A-119B-119C. Advanced Quechua.** Prerequisites: courses 18A-18B-18C or consent of instructor. Readings in Quechua. Dialectal and stylistic variation. Discussions mainly in Quechua.

Mr. Bedell

## Graduate Course

**596. Directed Studies in Quechua (1 to 8 units).** Prerequisites: courses 119A-119B-119C or consent of instructor. Directed individual study or research in Quechua. Four units may be applied toward M.A. course requirements. May be repeated for credit. S/U grading.

## Related Courses in Other Departments (Other than Language Courses)

**Anthropology 143.** Field Methods in Linguistic Anthropology

**Armenian (Near Eastern Languages) 210.** History of the Armenian Language

**English 121.** History of the English Language

122. Introduction to Structure of Present-Day English

210. History of the English Language

218. Celtic Linguistics

240. Studies in History of the English Language

241. Studies in Structure of the English Language

**Folklore and Mythology 217.** Folk Speech

**French 210A.** Phonology and Morphology from Vulgar Latin to French Classicism

210B. Syntax and Semantics from Vulgar Latin to French Classicism

**German (Germanic Languages) 129.** Language and Linguistics

217. History of the German Language

230. Survey of Germanic Philology

C238. Linguistic Theory and Grammatical Description

251. Seminar: Syntax and Phonology of German

252. Seminar: Historical and Comparative Germanic Linguistics

**Hebrew (Near Eastern Languages) 190A-190B.** Survey of Hebrew Grammar

210. History of the Hebrew Language

**Indo-European Studies 210.** Indo-European Linguistics: Advanced Course

280A-280B. Seminar: Indo-European Linguistics

**Italian 259A.** History of the Italian Language

259B. Structure of Modern Italian

259C. Italian Dialectology

**Japanese (East Asian Languages) CM122.** Structure of Japanese I

225A-225B. Seminars: Linguistic Analysis of Japanese Narratives

**Latin (Classics) 240.** History of the Latin Language

**Philosophy 127A, 127B.** Philosophy of Language

172. Philosophy of Language and Communication

287. Seminar: Philosophy of Language

**Portuguese (Spanish and Portuguese) 100A.** Phonology and Morphology

100B. Syntax

M118A. History of Portuguese and Spanish: Phonology

M118B. History of Portuguese and Spanish: Morphology and Syntax

M205A-M205B. Development of Portuguese and Spanish Languages

M251A-M251B. Studies in Galegan-Portuguese and Old Spanish

**Psychiatry 257A-257B-257C.** Communication Disorders Associated with Developmental Disabilities and Psychiatric Disorders

**Psychology 123.** Psycholinguistics

260A-260B-260C. Proseminars: Cognitive Psychology

**Russian (Slavic Languages) 123.** Historical Commentary on Modern Russian

204. Introduction to History of the Russian Literary Language

241. Topics in Russian Phonology

242. Topics in Russian Morphology

243. Topics in Historical Russian Grammar

263. Russian Dialectology

264. History of the Russian Literary Language

265. Advanced Russian Syntax

266. Russian Lexicology

**Semitics (Near Eastern Languages) 280A-280B-280C.** Seminars: Comparative Semitics

**Slavic (Slavic Languages) 202.** Introduction to Comparative Slavic Linguistics

242. Comparative Slavic Linguistics

251. Introduction to Baltic Linguistics

262A-262B. West Slavic Linguistics

263A-263B. South Slavic Linguistics

281. Seminar: Slavic Linguistics

282. Seminar: Structural Analysis

**Slovak (Slavic Languages) 222.** Structure of Slovak

**Sociology CM124A.** Conversational Structures I

266. Selected Problems in Analysis of Conversation

267. Selected Problems in Communication

**Spanish (Spanish and Portuguese) 100A.** Introduction to Study of Spanish Grammar: Phonology and Morphology

100B. Introduction to Study of Spanish Grammar: Syntax

115. Applied Linguistics

M118A. History of Portuguese and Spanish: Phonology

M118B. History of Portuguese and Spanish: Morphology and Syntax

202A. Phonology

202B. Morphology

204A-204B. Generative Syntax and Semantics

M205A-M205B. Development of Portuguese and Spanish Languages

209. Dialectology

M251A-M251B. Studies in Galegan-Portuguese and Old Spanish

256A-256B. Studies in Spanish Linguistics

257. Studies in Dialectology

**Teaching English as a Second Language and Applied Linguistics 241.** Interlanguage Analysis

260. Psycholinguistics and Language Teaching

**Turkic Languages (Near Eastern Languages) 230A-230B-230C.** Historical and Comparative Survey of Turkic Languages

## Mathematics

6363 Math Sciences, (310) 825-4701

### Professors

Christopher R. Anderson, Ph.D.

Donald G. Babbitt, Ph.D.

Kirby A. Baker, Ph.D. (*Distinguished Teaching Award*)

Don M. Blasius, Ph.D.

Robert J. Blattner, Ph.D.

Robert F. Brown, Ph.D.

Russel Cafilisch, Ph.D.  
 Lennart Carleson, Ph.D.  
 Tony F.C. Chan, Ph.D.  
 S.Y. Alice Chang, Ph.D.  
 Jennifer T. Chayes, Ph.D.  
 Lincoln Chayes, Ph.D.  
 S.Y. Cheng, Ph.D.  
 F. Michael Christ, Ph.D., *Graduate Vice Chair*  
 Philip C. Curtis, Jr., Ph.D.  
 Jan de Leeuw, Ph.D.  
 Robert D. Edwards, Ph.D.  
 Edward G. Effros, Ph.D.  
 Richard S. Elman, Ph.D.  
 Bjorn E. Engquist, Ph.D.  
 Gregory I. Eskin, Ph.D.  
 Hector O. Fattorini, Ph.D.  
 Thomas S. Ferguson, Ph.D.  
 Theodore W. Gamelin, Ph.D.  
 John B. Garnett, Ph.D. (*Distinguished Teaching Award*)  
 David A. Giesecker, Ph.D.  
 David Gillman, Ph.D.  
 Basil Gordon, Ph.D. (*Distinguished Teaching Award*)  
 Mark L. Green, Ph.D., *Administrative Vice Chair*  
 Robert E. Greene, Ph.D.  
 Nathaniel Grossman, Ph.D.  
 Alfred W. Hales, Ph.D.  
 Haruzo Hida, Ph.D.  
 Robert I. Jennrich, Ph.D.  
 Heinz-Otto Kreiss, Ph.D.  
 Robert K. Lazarsfeld, Ph.D.  
 Ker-Chau Li, Ph.D.  
 Thomas M. Liggett, Ph.D., *Chair*  
 D. Anthony Martin  
 Ronald J. Mieh, Ph.D.  
 Yiannis N. Moschovakis, Ph.D.  
 William I. Newman, Ph.D.  
 Stanley J. Osher, Ph.D.  
 Sorin T. Popa, Ph.D.  
 Sidney C. Port, Ph.D.  
 James V. Ralston, Jr., Ph.D.  
 Paul H. Roberts, Ph.D., D.Sc.  
 Jonathan D. Rogawski, Ph.D.  
 Bruce L. Rothschild, Ph.D., *Program in Computing Director*  
 Murray M. Schacher, Ph.D.  
 Roberto Schonmann, Ph.D.  
 Lloyd S. Shapley, Ph.D.  
 Christopher Sogge, Ph.D.  
 John R. Steel, Ph.D.  
 Masamichi Takesaki, Ph.D.  
 V.S. Varadarajan, Ph.D., *Undergraduate Vice Chair*  
 James H. White, Ph.D. (*Distinguished Teaching Award*)  
 N. Donald Ylvisaker, Ph.D., *Statistics Division Director*  
 Lai-Sang Young, Ph.D.

### Professors Emeriti

Richard F. Arens, Ph.D.  
 David G. Cantor, Ph.D.  
 C.C. Chang, Ph.D.  
 John W. Green, Ph.D.  
 Paul G. Hoel, Ph.D.  
 Alfred Horn, Ph.D.  
 S.T. Hu, Ph.D., D.Sc.  
 Paul B. Johnson, Ph.D.  
 Barrett O'Neill, Ph.D.  
 Lowell J. Paige, Ph.D.  
 William T. Puckett, Ph.D.  
 Raymond M. Redheffer, Ph.D. (*Distinguished Teaching Award*)  
 Leo R. Sario, Ph.D.  
 Robert H. Sorgenfrey, Ph.D. (*Distinguished Teaching Award*)  
 Robert Steinberg, Ph.D.  
 Angus E. Taylor, Ph.D.  
 Frederick A. Valentine, Ph.D.

### Associate Professors

Mladen Bestvina, Ph.D.  
 Rodolfo De Sapio, Ph.D.  
 Geoffrey Mess, Ph.D.  
 Thomas Mountford, Ph.D.  
 Peter Petersen, Ph.D.

### Lecturers

David Cohen, M.A. (*Distinguished Teaching Award*)  
 Philippe Goodman, B.S. (*Program in Computing*)  
 Kathleen Neumann, Ph.D. (*Program in Computing*)

### Adjunct Professor

Herbert Endernton, Ph.D.

### Adjunct Assistant Professors

Marie Dahleh, Ph.D.  
 Douglas Jungreis, Ph.D. (*Hedrick*)  
 Rachel Lunnon, Ph.D. (*Program in Computing*)  
 Atsushi Moriwaki, Ph.D. (*Hedrick*)  
 Ying Shen, Ph.D.  
 Ivan Soskov, Ph.D. (*Program in Computing*)  
 Alex Stolboushkin, Ph.D. (*Program in Computing*)  
 Shanshuang Yang, Ph.D. (*Hedrick*)

## Scope and Objectives

Gauss has called mathematics the "Queen of the Sciences." It has provided powerful intellectual tools that have made possible tremendous advances in modern science and technology. The Department of Mathematics provides courses of study that introduce students to the fundamentals of mathematics and allow them to master the most important parts of the subject, both pure and applied. It leads doctoral students to the frontiers of mathematical research, where they can begin to push back those frontiers.

## Undergraduate Study

### Preliminary Examination in Mathematics

If you wish to enroll in Mathematics 1, 3A, or 31A, you must pass the Mathematics Diagnostic Test.

This examination may be taken at any one of several times, including all sessions of the summer Orientation Program. It will also be given on Monday, September 27, 1993, for Fall Quarter 1993; Wednesday, November 17, 1993, for Winter Quarter 1994; and Wednesday, March 2, 1994, for Spring Quarter 1994. For information, contact the Mathematics Student Services Office, 6356 Math Sciences.

### Advanced Placement in Calculus

Students who have taken the Advanced Placement (AP) Calculus AB Test and obtained a score of 4 or 5 receive four units of credit and Mathematics 31A equivalency; those with a score of 3 receive four units of calculus and analytic geometry credit. You may petition for 31A equivalency, or you may take course 31A at UCLA. Students who take the BC Test and obtain a score of 4 or 5 receive eight units of credit and Mathematics 31A, 31B equivalency; those with a score of 3 receive eight units of calculus and analytic geometry credit. You

may petition for 31A, 31B equivalency, or you may take courses 31A, 31B at UCLA.

If you received a score of 3 on the AB or BC examination, you should consult the undergraduate mathematics counselor prior to enrolling in a calculus course at UCLA. If you had calculus in high school but do not have Advanced Placement Test credit, you may take beginning calculus (Mathematics 3A or 31A), or you may seek advanced placement by passing examinations in the subject. Consult the Student Services Office for further details.

### Credit Limitations

Credit is given for at most one course in each of the following groups: (1) 3A, 31A, 31AH, 31AQ; (2) 3B, 31B, 31BH, 31BQ, 31E; (3) 3C, 32A, 32AH, 32AQ; (4) 110A, 117; (5) 132, 132H; (6) 140A, 141A; (7) M150A, Statistics M152A, 154A.

Mathematics 2, 38A, 38B, and Statistics 50 are not open for credit to students with credit for any course from Mathematics 110A through 199.

Mathematics 140A-140B-140C and 141A-141B are not open for credit to students with credit for Electrical Engineering 103.

Mathematics M150A and Statistics M152A are not open for credit to students with credit for Electrical Engineering 131A.

You may not take a mathematics course for credit if you have credit for a more advanced course which has the first course as a prerequisite. This applies in particular to the repetition of courses (e.g., if you wish to repeat Mathematics 31B, you must do so before completing course 32A).

### Premathematics Major

All students who wish to enter one of the majors offered by the Mathematics Department must first register as premathematics majors. After completing all required preparation courses for the major of your choice and before accumulating a total of 135 quarter units, you should apply for admission to the major by filing a change of major petition in the Student Services Office, 6356 Math Sciences. Transfer students must have completed a minimum of three preparation for the major and major courses at UCLA before petitioning to enter the major.

**Admission Requirements** — Students entering UCLA directly from high school who declare themselves as premathematics majors at the time they apply for admission are automatically admitted as such.

UCLA students who wish to enter the premathematics major must have a minimum grade of C- in each preparation for the major course completed and a combined grade-point average of at least 2.0 in those courses. Grades in any completed major courses must also average at least 2.0. Students with 60 or more units of credit must have completed at least 12 units of calculus to enter the premathematics major.

Transfer students must have a minimum grade of C in the equivalent of each preparation for the major course completed. Those transferring with 60 or more quarter units of credit must have completed at least 12 quarter units of calculus to enter the premathematics major.

### Undergraduate Majors

The Mathematics Department offers five majors: mathematics, applied mathematics, mathematics of computation, mathematics/applied science, and general mathematics.

The mathematics major is designed for students whose basic interest is mathematics; the applied mathematics major for those interested in the classical relationship between mathematics, the physical sciences, and engineering; the mathematics of computation major for individuals interested in the mathematical theory and the applications of computing; the mathematics/applied science major for those with substantial interest in the applications of mathematics to a particular outside field of interest; and the general mathematics major for students planning to teach mathematics at the high school level. As part of the mathematics/applied science major, the department offers programs for students interested in the fields of actuarial science and operations research.

Courses taken to fulfill any of the requirements for any of the mathematics majors must be taken for a letter grade.

If you plan to pursue graduate study in mathematics, you are strongly encouraged to take a three-term sequence of graduate-level courses during your senior year.

## Bachelor of Science in Mathematics

### Preparation for the Major

*Required:* Mathematics 31A, 31B, 32A, 32B, 33A, 33B, Program in Computing 10A, Physics 8A, 8C, and two additional courses from Biology 6, Chemistry and Biochemistry 11A, 11B, Economics 11, Philosophy 31, 32, Physics 6B, 6C, 8B, 8D, 8E. Each course must be passed with a minimum grade of C-, and you must have a minimum overall GPA of 2.0 for the courses.

### The Major

*Required:* Mathematics 110A-110B, 115A, 131A-131B, 132, one course from 120A, 121, 123, and at least five additional courses from 106 through 199 and Statistics M152A through 154B. The 12 courses must be passed with a minimum overall GPA of 2.0.

## Bachelor of Science in Applied Mathematics

### Preparation for the Major

*Required:* Mathematics 31A, 31B, 32A, 32B, 33A, 33B, Program in Computing 10A, Physics 8A, 8C, and one additional course from Physics 8B, 8D, 8E, Chemistry and Biochemistry 11A, 11B. Each course must be passed with a minimum grade of C-, and you must have a minimum overall GPA of 2.0 for the courses.

### The Major

*Required:* Mathematics 115A, 131A, either 131B or 132, 142; two two-term sequences from two of the following categories: *numerical analysis* — courses 140A-140B or 141A-141B, *probability and statistics* — courses M150A-150B or Statistics M152A and 152B or 154A-154B, *differential equations* — courses 135A-135B; four additional courses from 110A through 199 and Statistics M152A through 154B (appropriate courses from other departments may be substituted for some of the additional courses provided departmental consent is given before such courses are taken). The 12 courses must be passed with a minimum overall GPA of 2.0.

## Bachelor of Science in Mathematics of Computation

### Preparation for the Major

*Required:* Mathematics 31A, 31B, 32A, 32B, 33A, 33B, 61, Program in Computing 10A, 10B, 10C or 30, Physics 8A, 8C, and one additional course from Physics 8B, 8D, 8E, Chemistry and Biochemistry 11A, 11B. Each course must be passed with a minimum grade of C-, and you must have a minimum overall GPA of 2.0 for the courses.

### The Major

*Required:* Eleven Mathematics Department courses, including Mathematics 115A, 117, 131A, two additional courses from 110A through 199 and Statistics M152A through 154B, and six courses from *Plan A (scientific computing)* — courses 131B or 132, 140A-140B-140C, and 135A-135B or 145/146, or *Plan B (computation theory)* — courses 114A-114B-114C and 118A-118B-118C, or *Plan C (computational statistics)* — courses 140A or 141A, M150A or Statistics M152A, Statistics 152B-152C, and M153A-M153B; three upper division computer science courses (12 units).

If you plan to pursue this major, see the undergraduate adviser in 6356 Math Sciences. There is a chance that courses 114A-114B-114C and 118A-118B-118C will be offered in alternating years.

## Bachelor of Science in Mathematics/Applied Science

The major is designed for students with a substantial interest in mathematics and its applications to a particular field. It is an individual major in that students, in consultation with a faculty adviser, design their own program. You may also select one of the established programs: the actuarial plan, the mathematics/economics plan, or the operations research plan. In the past, mathematics/applied science majors have combined the study of mathematics with fields such as physics, biology, chemistry, biochemistry, economics, and geography.

If you are interested in designing an individual program, you should meet with the undergraduate adviser, 6356 Math Sciences, during your sophomore year. A proposed program is drawn up, then forwarded to the mathematics/applied science curriculum committee for approval. All programs must include the following preparation for the major and major courses.

### Preparation for the Major

*Required:* Mathematics 31A, 31B, 32A, 32B, 33A, 33B, Program in Computing 10A. Each course must be passed with a minimum grade of C-, and you must have a minimum overall GPA of 2.0 for the courses. Additional preparation, varying with the individual program, may be required.

### The Major

*Required:* Fourteen courses, seven in the Mathematics Department selected from Mathematics 110A through 199 and Statistics M152A through 154B and seven upper division courses in a related field selected from one or two other departments. The seven Mathematics Department courses must be passed with an overall GPA of 2.0, as must the seven courses outside mathematics.

At least five of the courses from the related discipline must be taken after the program has been approved. If you will have 135 or more units by the end of the term in which you plan to enter the program, you will not be admitted to the major.

### Actuarial Plan

**Preparation for the Major:** Mathematics 31A, 31B, 32A, 32B, 33A, 33B, Program in Computing 10A, Economics 1 and 2 (or 100), 11. Economics 100 may not be applied as one of the upper division courses for the major. You must have a minimum overall 2.5 GPA in the six calculus courses.

**The Major:** Seven Mathematics Department courses, including Mathematics 115A, 140A or 141A, 144, M150A-150B or Statistics M152A and 152B or 154A-154B, and two courses from 113, 140B or 141B, 151, Statistics 152C, M153A; six outside courses, including Econom-

ics 101, 102, 147A, 160, and two additional courses from Management 130A, 130B, 190, English 131A through 131J, Economics 145 through 199.

### Mathematics/Economics Plan

**Preparation for the Major:** Mathematics 31A, 31B, 32A, 32B, 33A, 33B, Economics 1, 2, 11, Program in Computing 10A.

**The Major:** Seven Mathematics Department courses, including Mathematics 110A or 117, 115A, 131A, 144, M150A or Statistics M152A or 154A, Statistics 152B or 154B, and one additional course from 110A through 199 and Statistics M153A, M153B; six economics courses, including Economics 101, 102, and four additional upper division courses, with at least three from 105AH, 105BH, and 141 through 148.

### Operations Research Plan

**Preparation for the Major:** Mathematics 31A, 31B, 32A, 32B, 33A, 33B, Economics 1 and 2 (or 100), 11, Management 1A, Program in Computing 10A, 10B, and two courses from 10C, 15, 30, 60.

**The Major:** Seven courses in the Mathematics Department and six in economics and management. Consult the department for recommended courses. Programs are designed so that students in this plan qualify for a specialization in computing.

### Bachelor of Science in General Mathematics

The major is designed primarily for students planning to teach mathematics at the high school level. It provides exposure to a broad range of mathematical topics, especially those appropriate for the prospective teacher. Students planning to pursue graduate studies in mathematics or related fields are encouraged to enter the mathematics, applied mathematics, or mathematics of computation major.

#### Preparation for the Major

**Required:** Mathematics 31A, 31B, 32A, 32B, 33A, 33B, 61, Program in Computing 10A, and three courses from the Physics 6 or 8 sequence, the Chemistry and Biochemistry 11 sequence, or Program in Computing 10B, 10C, 30, 60. Each course must be passed with a minimum grade of C-, and you must have a minimum overall GPA of 2.0 for the courses.

#### The Major

**Required:** Mathematics 110A or 117, 115A, 123, M150A or Statistics M152A or 154A, one course from 131A through 136, one course from 140A through 147, and six additional courses from 106 through 199, 370, and Statistics M152A through 154B.

### Specialization in Computing

Majors in mathematics, applied mathematics, mathematics/applied science, or general mathematics may select a specialization in computing by (1) satisfying all the requirements for a bachelor's degree in the specified major, (2) completing Mathematics 61 or 113, Program in Computing 10A, 10B, and two courses from 10C, 15, 30, 60, with a minimum grade of C- in each course and a combined GPA of at least 2.0, and (3) completing at least two courses from Mathematics 141A, 141B, 149, 149HS. You must petition for admission to this program and are advised to do so after you complete Program in Computing 10B (petitions should be filed in the Student Services Office). You graduate with a bachelor's degree in your major and a specialization in computing.

### Honors

#### Honors Courses

The department offers a lower division honors sequence in calculus and upper division honors sequences in algebra and analysis. The sequences are intended for students (not necessarily mathematics majors) who desire a broad, comprehensive introduction to these topics. Call the department (310-206-1286) for further details.

#### Honors Program

Students majoring in mathematics, applied mathematics, and mathematics of computation who wish to graduate with departmental honors should apply for admission to the honors program in the Student Services Office. You may apply any time after completing four courses from the calculus sequence or from upper division mathematics courses with an overall GPA of 3.6 or better. The program entails taking a specified sequence of courses as part of your major requirements, completing an approved seminar offered by the Mathematics Department or submitting an original research project, and earning an overall GPA of at least 3.6 in approved upper division and graduate mathematics courses.

If you complete the program, you are awarded honors at graduation; if you demonstrate exceptional achievement (i.e., at least a 3.8 GPA in upper division mathematics courses taken for the major), you are awarded highest honors. Consult the department for further information.

### Graduate Study

#### Admission

Prospective graduate students in mathematics need not have an undergraduate mathematics major, but they should have completed at least 12 quarter courses (or eight semester courses) in substantial upper division mathematics — particularly algebra, differential equations, analysis, and differential or projective geometry. For

admission to a master's degree program, you must have earned in those upper division mathematics courses a cumulative grade-point average of at least 3.2; for direct admission to the doctoral program, at least 3.5.

If you have already obtained a master's degree, you must have maintained an average of better than 3.6 in graduate study.

You must take the Graduate Record Examination (GRE) General Test and Subject Test in Mathematics and must submit three letters of recommendation from mathematicians who know your recent work.

Applications are available from the Graduate Adviser, Department of Mathematics, 6356 Math Sciences, UCLA, Los Angeles, CA 90024-1555.

### Master of Arts Degree

You may earn the M.A. degree in Mathematics under the comprehensive examination plan, either in the basic (*pure mathematics*) program, in an interdisciplinary program in *applied mathematics*, or in *statistics*.

#### Foreign Language Requirement

There is no foreign language requirement for master's students.

#### Course Requirements

Eleven courses are required for the M.A. degree, of which at least eight must be graduate courses, while the remaining three may be approved upper division courses. Each course must be passed with a grade of B or better. With consent of the graduate vice chair, students in the applied mathematics and statistics programs may take up to five of the required 11 courses in other departments, provided that these courses are in professional or scientific fields closely related to research in applied mathematics or statistics respectively.

You may enroll in Mathematics 596 any number of times and may apply up to two 596 courses toward the 11-course requirement for the M.A., provided you receive a B or better in these courses (not the grade S).

#### Comprehensive Examination Plan

You must pass two written qualifying examinations at the M.A. level within seven terms of full-time study. By program, the following examinations are required: (1) *pure mathematics* — algebra and either real analysis or complex analysis; (2) *applied mathematics* — one in real analysis or complex analysis and one in numerical analysis or applied differential equations; (3) *statistics* — two from probability, theoretical statistics, or applied statistics.

These examinations are offered early in Fall Quarter and toward the end of Spring Quarter. You may take one or both of the examinations at one sitting and may retake them any number of times until you pass them.

## Master of Arts in Teaching

The M.A.T. program serves the needs of present and prospective mathematics teachers in high school and junior college.

### Foreign Language Requirement

There is no foreign language requirement for M.A.T. students.

### Course Requirements

Eleven courses are required, as follows.

**Core Courses** — You must take Mathematics 201A-201B-201C and 202A-202B. Normally, you also take one term of course 596 while fulfilling the essay requirement described below.

**Credential Requirements** — If you plan to teach in secondary schools and do not already have valid credentials for such teaching, you should enroll in the single subject instructional credential program in the Graduate School of Education. Of the courses required by this program, you may receive M.A.T. credit only for the following: Education 100, 112, 312, 330A, 330B. Actual receipt of the credential is not a degree requirement. You should check with the Graduate School of Education for a full and up-to-date description of credential requirements and should submit a Graduate School of Education application for admission to the credential program.

**Additional Courses** — Besides the six core courses described above, you must take a seventh upper division or graduate course in mathematics. Particularly recommended are Mathematics 106, 110B, 110C, 111A, 111B, 131B, 135A, and Statistics 152B. Candidates on the junior college track normally take five 100- or 200-level courses in mathematics in addition to the six core courses. However, with prior approval of the graduate vice chair, such students may present for degree credit one course of a predominantly mathematical nature taken in another department.

You may not receive degree credit for Mathematics 104 or 370. In addition, you may not receive degree credit for more than two terms of course 596 or for more than two terms of any 300-series courses.

**Essay Requirement** — You must prepare a master's essay on some subject in mathematics related to your prospective teaching. You write this under the direction of a faculty member while enrolled in Mathematics 596.

### Teaching Experience

Teaching experience is not a formal requirement for the M.A.T. degree, although students working for a secondary credential must take the supervised teaching course. M.A.T. students are eligible for teaching assistantships.

### Comprehensive Examination Plan

In the M.A.T. program, you take one examination in mathematical subject matter and one in

content and philosophy of secondary school mathematics. Ordinarily, these are administered in conjunction with Mathematics 201A-201B-201C and 202A-202B. Reexamination after failure is allowed.

## Ph.D. Degree

Students may earn the Ph.D. degree in Mathematics at UCLA either in the classical (*pure mathematics*) program, in an interdisciplinary program in *applied mathematics*, or in *statistics*. There are many possible choices of fields within these programs, and you are urged to read the booklet, *Graduate Studies in Mathematics at UCLA*, where the specialties of the faculty and the active research areas in the department are described in some detail.

### Language Requirement

Prior to advancement to candidacy, you must fulfill one of the following requirements:

(1) Foreign Language Requirement — You must pass two written departmental language examinations, at least one of which must be in French, German, or Russian. In order to take an alternate non-English examination such as Italian, you must petition to the graduate vice chair. International students whose principal language of instruction in elementary and secondary education was not English may substitute English for one of the foreign languages.

(2) Foreign Language/Computer Project Requirement (for students in the applied mathematics and statistics programs only) — You must pass one written departmental language examination in either French, German, or Russian and complete a computer language project approved by the computing committee chair and graduate vice chair.

The foreign language examinations, offered each term, require the translation of material in some basic field of mathematics (a dictionary may be used). They may be retaken any number of times until passed. One of the examinations must be passed within seven terms of registered full-time study, the second within 13 terms. In any event, one language examination must be passed before you take the first oral qualifying examination.

### Course Requirements

In the pure mathematics and statistics programs, you must pass (with a grade of A or B) at least 12 courses from Mathematics 205A through 285L, but excluding the basic courses 210A-210B, 245A-245B, and 246A-246B. At most, three of these courses may be in the 285 series. You must also satisfy a *seminar participation requirement* by participating actively in at least two advanced seminars (normally you lecture twice for a total of 90 minutes). Credit for one seminar must be obtained within three registered terms after passing the written qualifying examinations, the other within five terms.

In the applied mathematics program, you must pass (with a grade of A or B) at least 18 approved graduate courses, including at least 12 courses from Mathematics 205A through 285L. At most, three of these may be in the 285 series.

### Qualifying Examinations

You must pass four written qualifying examinations, at least two of which must be passed at the Ph.D. level. One examination (any level) must be passed within three terms of full-time study, three examinations must be passed within six terms of full-time study, and all four examinations must be passed within seven terms of full-time study. Students in the applied mathematics program are allowed to substitute an outside examination (at the M.A. level) for one of the regular departmental examinations. By program, the following examinations are required: (1) *pure mathematics* — algebra and real analysis (either one or both may be passed at the M.A. level, subject to the above restriction on the number of M.A. passes); (2) *applied mathematics* — real analysis and either numerical analysis or applied differential equations; (3) *statistics* — real analysis and probability at the M.A. level; theoretical statistics and applied statistics at the Ph.D. level. These examinations are offered early in Fall Quarter and toward the end of Spring Quarter.

After passing the four qualifying examinations, you may set up the doctoral committee which administers the University Oral Qualifying Examination for advancement to candidacy.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Final Oral Examination

The final oral examination may be waived by the doctoral committee, with the approval of the graduate vice chair.

## Mathematics

### Lower Division Courses

**A. Intermediate Algebra (No credit).** Lecture, five hours. Mathematics A displaces four units on student's Study List but yields no credit toward degree. May not be applied toward Letters and Science general education requirements. Not open to students with credit for other mathematics courses. Designed for students requiring review of intermediate algebra. Polynomials, rational exponents, linear and quadratic equations and inequalities, coordinate geometry, systems of equations, theory of equations. (F,W,Sp)

**1. Precalculus.** Lecture, three hours; discussion, one hour. Prerequisites: course A with a grade of C or better, or two and one-half years of high school mathematics. Function concept. Linear and polynomial functions and their graphs, applications to optimization. Inverse, exponential, and logarithmic functions. Trigonometric functions. P/NP or letter grading.

**2. Finite Mathematics.** Lecture, three hours; discussion, one hour. Prerequisite: course 1 or three years of high school mathematics or consent of instructor. Finite mathematics consisting of matrices, Gauss/Jordan method, combinatorics, probability, Bayes theorem, and Markov chains.



**3A. Calculus for Life Sciences Students.** Lecture, three hours; discussion, one hour. Prerequisites: three and one-half years of high school mathematics (including trigonometry) and successful completion of Mathematics Diagnostic Test, or completion of course 1 with a grade of C- or better. Not open for credit to students with credit in another calculus sequence. Students with credit for course 5 will receive only two units of credit for this course. Techniques and applications of differential calculus. Introduction to the integral. P/NP or letter grading.

**3B. Calculus for Life Sciences Students.** Lecture, three hours; discussion, one hour. Prerequisite: course 3A with a grade of C- or better. Techniques and applications of integral calculus, logarithmic and exponential functions, introduction to differential equations. P/NP or letter grading.

**3C. Calculus for Life Sciences Students.** Lecture, three hours; discussion, one hour. Prerequisite: course 3B with a grade of C- or better. Functions of several variables, vectors, partial differentiation, and vector-valued functions. P/NP or letter grading.

**5. Calculus for Liberal Arts Students.** Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 3A, 3B, 3C, 31A through 33B, or 110A through 199. Brief look at concepts, techniques, and applications of both differential and integral calculus. Emphasis on intuitive ideas in place of mathematical proofs.

**9. Mathematics: A First View (1 unit).** Introductory course to acquaint freshmen with nature of mathematics, its larger vistas, and its increasingly dominant role in understanding and advancing the world around us. P/NP or letter grading. (F,W,Sp)

**31A. Calculus and Analytic Geometry.** Lecture, three hours; discussion, one hour. Prerequisites: at least three and one-half years of high school mathematics (including some coordinate geometry and trigonometry) and successful completion of Mathematics Diagnostic Test, or completion of course 1 with a grade of C- or better. Students with credit for course 5 will receive only two units of credit for this course. Differential calculus and applications; introduction to integration.

**31AH-31BH. Calculus and Analytic Geometry (Honors).** Lecture, three hours; discussion, one hour. Prerequisites: successful completion of Mathematics Diagnostic Test or additional honors placement examination, consent of instructor. Honors sequence parallel to courses 31A, 31B.

**31AQ. Calculus and Analytic Geometry with Computer Laboratory (5 units).** (Formerly numbered 31A/PC.) Lecture, three hours; discussion, one hour; laboratory, one hour. Prerequisites: at least three and one-half years of high school mathematics (including some coordinate geometry and trigonometry) and successful completion of Mathematics Diagnostic Test, or completion of course 1 with a grade of C- or better. Same material as course 31A with one additional computer laboratory hour. P/NP or letter grading.

**31B. Calculus and Analytic Geometry.** Lecture, three hours; discussion, one hour. Prerequisite: course 31A with a grade of C- or better. Transcendental functions; methods and applications of integration.

**31BQ. Calculus and Analytic Geometry with Computer Laboratory (5 units).** (Formerly numbered 31B/PC.) Lecture, three hours; discussion, one hour; laboratory, one hour. Prerequisite: course 31AQ, or 31A with a grade of C- or better. Same material as course 31B with one additional computer laboratory hour. P/NP or letter grading.

**31E. Calculus for Economics Students.** (Formerly numbered 3E.) Lecture, three hours; discussion, one hour. Prerequisite: course 31A with a grade of C- or better. Not open for credit to students with credit for course 3B, 3C, 31B, 31BH, or 31BQ. Calculus with applications to economics. Partial differentiation, differentials, implicit functions; exponential and logarithmic functions, extrema, optimization, constrained extrema, first-order linear differential equations with constant coefficients. P/NP or letter grading.

**32A. Calculus of Several Variables.** Lecture, three hours; discussion, one hour. Prerequisite: course 31B with a grade of C- or better. Introduction to differential calculus of several variables.

**32AH-32BH. Calculus of Several Variables (Honors).** Prerequisites: course 31BH, or 31B with a grade of A and consent of instructor. Honors sequence parallel to courses 32A, 32B.

**32AQ. Calculus of Several Variables with Computer Laboratory (5 units).** (Formerly numbered 32A/PC.) Lecture, three hours; discussion, one hour; laboratory, one hour. Prerequisite: course 31B or 31BQ with a grade of C- or better. Same material as course 32A with one additional computer laboratory hour. P/NP or letter grading.

**32B. Calculus of Several Variables.** Lecture, three hours; discussion, one hour. Prerequisite: course 32A with a grade of C- or better. Introduction to integral calculus of several variables, vector field theory, line and surface integrals. P/NP or letter grading.

**32BQ. Calculus of Several Variables with Computer Laboratory (5 units).** Lecture, three hours; discussion, one hour; laboratory, one hour. Prerequisite: course 32A or 32AQ with a grade of C- or better. Same material as course 32B with one additional computer laboratory hour. P/NP or letter grading.

**33A. Matrices and Differential Equations.** Lecture, three hours; discussion, one hour. Prerequisite: course 32A or 32AH or 32AQ. Introduction to matrix theory, differential equations, and systems of differential equations.

**33AH-33BH. Matrices, Differential Equations, and Infinite Series (Honors).** Lecture, three hours; discussion, one hour. Prerequisites: course 32AH, or 32A with a grade of A and consent of instructor. Honors sequence parallel to courses 33A, 33B. P/NP or letter grading.

**33B. Infinite Series.** Lecture, three hours; discussion, one hour. Prerequisite: course 33A or consent of instructor. Infinite sequences and series; applications.

**38A. Fundamentals of Mathematics for Elementary Teachers.** Lecture, three hours; discussion, one hour. Prerequisite: sophomore standing. Not open for credit to students with credit for any course from Mathematics 110A through 199. May not be applied toward Letters and Science general education requirements. Courses 38A, 38B, and 104 form one-year sequence for prospective elementary teachers in Diversified Liberal Arts Program. Counting numbers and other subsystems of real numbers; sets; operations, relations, algorithms; applications and problem solving. Emphasis on understanding arithmetic procedures. P/NP or letter grading.

**38B. Fundamentals of Mathematics for Elementary Teachers.** Lecture, three hours; discussion, one hour; laboratory, one hour. Prerequisite: course 38A. Not open for credit to students with credit for any course from Mathematics 110A through 199. May not be applied toward Letters and Science general education requirements. Continuation of course 38A. Elementary number theory; probability and statistics; the micro-computer and simple instructional programs; measurement and approximation; coordinate geometry. Other topics appropriate for elementary classroom. P/NP or letter grading.

**61. Introduction to Discrete Structures.** Lecture, three hours; discussion, one hour. Prerequisites: courses 31A, 31B, and Program in Computing 10A or 3 or equivalent. Not open for credit to students with credit for course 113. Discrete structures commonly used in computer science and mathematics, including sets and relations, permutations and combinations, graphs and trees, induction, Boolean algebras.

**70. Theory of Interest.** Lecture, three hours; discussion, one hour. Prerequisites: two calculus courses. Measurement of interest, annuities, amortization, sinking funds, bonds, and other securities.

**88. Lower Division Seminar.** Seminar, three hours. Prerequisite: freshman standing. Limited to 15-20 students. Freshman seminar course on mathematics as a vital intellectual activity influencing all aspects of life. Substantial student participation. P/NP or letter grading.

## Upper Division Courses

Mathematics 113, 115A, 117, 131A, 132, 141A, 142, 144, 147, and Statistics 154A-154B are offered each term. The remaining upper division courses are usually offered once or twice each year. The tentative class schedule for the forthcoming academic year is posted in the Student Services Office in February.

## General and Teacher Training

**104. Fundamental Concepts of Geometry.** Lecture, three hours; discussion, one hour. Prerequisites: courses 38A and 38B or equivalent, or consent of instructor. Designed for prospective elementary teachers. Informal geometry and topology, motion geometry, measurement of geometric figures, LOGO computer language, models and constructions appropriate for elementary classrooms.

**106. History of Mathematics.** Prerequisite: course 32A. Topics in history of mathematics, with emphasis on development of modern mathematics.

## Algebra, Number Theory, and Logic

**109. Transition to Upper Division Mathematics.** Lecture, three hours; discussion, one hour. Prerequisite: course 33B or consent of instructor. Not open for credit to students with credit for course 131A or 131AH. Introduction to mathematical proof. Principle of mathematical induction. Proof by contradiction. Developing and writing mathematical proofs. Proofs of basic theorems for limits and infinite series. Completeness property of the real number system. P/NP or letter grading.

**110A-110B-110C. Algebra.** Lecture, three hours; discussion, one hour. Prerequisite: course 115A or consent of instructor. **110A.** Not open for credit to students with credit for course 117. Ring of integers, integral domains, fields, polynomial domains, unique factorization. **110B.** Groups, structure of finite groups. **110C.** Further topics in rings and modules; field extensions, Galois theory, applications to geometric constructions, and solvability by radicals.

**110AH-110BH-110CH. Algebra (Honors).** Prerequisite: consent of instructor. Honors sequence parallel to courses 110A-110B-110C.

**111A-111B-111C. Theory of Numbers.** Lecture, three hours; discussion, one hour. Prerequisites: courses 110A or 117, and 115A, or consent of instructor. Divisibility, congruences, Diophantine analysis, selected topics in theory of primes, algebraic number theory, Diophantine equations.

**M112A. Introduction to Set Theory.** (Formerly numbered 112A.) (Same as Philosophy M134.) Lecture, three hours; discussion, one hour. Prerequisite: course 31B or Philosophy 32 or consent of instructor. Axiomatic set theory as framework for mathematical concepts; relations and functions, numbers, cardinality, axiom of choice, transfinite numbers. P/NP or letter grading.

**112B-112C. Logic.** Lecture, three hours; discussion, one hour. Prerequisites: courses 32B, 33B. Predicate logic, formalized theories; Gödel completeness and incompleteness theorems. P/NP or letter grading.

**113. Combinatorics.** Lecture, three hours; discussion, one hour. Prerequisites: courses 32B, 33B. Permutations and combinations, counting principles, recurrence relations and generating functions, combinatorial designs, graphs and trees, with applications including games of complete information. Combinatorial existence theorems, Ramsey theorem.

**114A-114B-114C. Computation Theory and Logic.** Lecture, three hours; discussion, one hour. Prerequisite: course 61. Turing machines and other models of computation; recursive functions; thesis of Church; Gödel numbering of computations; universal machines; unsolvability results. Recursive and recursively enumerable sets; reducibilities; relative recursiveness. Propositional and predicate logic; syntax and semantics; formal deductions; completeness and compactness; effective enumerability of valid sentences. Formal number theory; representation of recursive functions; incompleteness and undecidability; theorems of Gödel, Tarski, Church. Complexity of computations; time and space limitations; nondeterministic machines; polynomial classes P and NP; complete problems; measures of complexity; speed-up and gap theorems; lengths of proofs. P/NP or letter grading.

**115A-115B. Linear Algebra.** Lecture, three hours; discussion, one hour. P/NP or letter grading. **115A.** Prerequisite: course 33A. Abstract vector spaces, linear transformations, and matrices; determinants; inner product spaces; eigenvector theory. **115B.** Prerequisite: course 115A. Linear transformations, conjugate spaces, duality; theory of a single linear transformation, Jordan normal form; bilinear forms, quadratic forms; Euclidean and unitary spaces, symmetric skew and orthogonal linear transformations, polar decomposition.

**117. Algebra for Applications.** Lecture, three hours; discussion, one hour. Prerequisite: course 115A. Not open for credit to students with credit for course 110A. Integers, congruences; fields, applications of finite fields; polynomials; permutations, introduction to groups.

**118A-118B-118C. Combinatorial Algorithms.** Lecture, three hours; discussion, one hour. Prerequisites: courses 33B, 61, 115A, 117 (latter may be taken concurrently with course 118A). Introduction to discrete mathematics and algorithms as used in computer science and related fields. Topics include asymptotic analysis, arithmetic algorithms, computer-oriented algorithms, graphs and matroids, coding theory and designs.

## Geometry and Topology

**120A-120B. Differential Geometry.** Lecture, three hours; discussion, one hour. Prerequisites: courses 32B, 33B, 115A, 131A. Curves in 3-space, Frenet formulas, surfaces in 3-space, normal curvature. Gaussian curvature. Congruence of curves and surfaces. Intrinsic geometry of surfaces, isometrics, geodesics, Gauss-Bonnet theorem.

**121. Introduction to Topology.** Prerequisite: course 131A. Metric and topological spaces, topological properties, completeness, mappings and homeomorphisms, metrization problem.

**122. Projective Geometry.** Lecture, three hours; discussion, one hour. Prerequisites: courses 110A-110B, 115A. Projective spaces, especially lines and planes; homogeneous coordinates; principles of duality; projectivities, fundamental theorem, and theorems of Desargues, Pappus, Steiner, and Pascal.

**123. Foundations of Geometry.** Lecture, three hours; discussion, one hour. Prerequisite: course 115A. Axioms and models, Euclid geometry, Hilbert axioms, neutral (absolute) geometry, hyperbolic geometry, Poincaré model, independence of parallel postulate.

## Analysis

**131A-131B. Analysis.** (Formerly numbered 131A-131B-131C.) Lecture, three hours; discussion, one hour. **131A.** Prerequisite: course 33B. Rigorous introduction to foundations of real analysis; real numbers, point set topology in euclidean space, functions, continuity. **131B.** Prerequisites: courses 33B, 115A, 131A. Derivatives, Riemann integral, sequences and series of functions, power series, Fourier series.

**131AH-131BH. Analysis (Honors).** Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Honors sequence parallel to courses 131A-131B. Courses 131AH-131BH and 132H form a full honors sequence in analysis.

**132. Complex Analysis for Applications.** Lecture, three hours; discussion, one hour. Prerequisites: courses 32B, 33B. Introduction to basic formulas and calculation procedures of complex analysis of one variable relevant to applications. Topics include Cauchy/Riemann equations, Cauchy integral formula, power series expansion, contour integrals, residue calculus.

**132H. Complex Analysis (Honors).** Lecture, three hours; discussion, one hour. Prerequisite: course 131A. Honors course parallel to course 132. Courses 131AH-131BH and 132H form a full honors sequence in analysis.

**133. Integration on Manifolds.** Prerequisite: course 131B. Integration theory for functions of several variables, multilinear algebra, differential forms, Stokes' theorem on manifolds.

**134. Measure and Integration.** Prerequisite: course 131B or consent of instructor. Introduction to Lebesgue measure and integration.

**135A-135B. Ordinary Differential Equations.** Lecture, three hours; discussion, one hour. Prerequisites: courses 33A, 33B, 115A. Systems of differential equations; linear systems with constant coefficients, analytic coefficients, periodic coefficients, and linear systems with regular singular points; existence and uniqueness results; linear boundary and eigenvalue problems; two-dimensional autonomous systems, phase/plane analysis; stability and asymptotic behavior of solutions.

**136. Partial Differential Equations.** Lecture, three hours; discussion, one hour. Prerequisites: courses 33A, 33B. Linear partial differential equations, particularly of the second order: wave equation, heat equation, and Laplace equation; appropriate boundary, initial value problems, and eigenvalue problems.

## Applied Mathematics

**140A-140B-140C. Numerical Analysis.** Lecture, three hours; discussion, one hour. Prerequisites: courses 32B, 33B, 115A, and Program in Computing 3 or 10A or equivalent. Not normally open for credit to students with credit for course 141A, 141B, or Electrical Engineering 103. Emphasis on both theory, with error analysis, and applications. Analysis of numerical methods for following areas: **140A.** Nonlinear equations, systems of linear equations, and eigenvalue problems. **140B.** Interpolation, approximation, fast Fourier transforms, differentiation, and integration. **140C.** Differential equations, systems of nonlinear equations, and optimization.

**141A-141B. Applied Numerical Methods.** Lecture, three hours; discussion, one hour. Prerequisites: courses 32A, 32B, 33A, 33B, 115A, and Program in Computing 3 or 10A or equivalent. Not open for credit to students with credit for course 140A, 140B, or Electrical Engineering 103. Introduction to scientific computing, with emphasis on programming, algorithms, and applications. Case studies. Numerical methods and computer implementation for following areas: **141A.** Nonlinear equations, systems of linear equations, optimization, interpolation, differentiation, and integration. **141B.** Differential equations, least-squares approximation, and Monte Carlo methods.

**142. Mathematical Modeling.** Lecture, three hours; discussion, one hour. Prerequisites: courses 32B and 33B, or consent of instructor. Introduction to fundamental principles and spirit of applied mathematics. Emphasis on manner in which mathematical models are constructed for physical problems. Illustrations from many fields of endeavor (e.g., physical sciences, biology, economics, traffic dynamics, etc.).

**143. Analytic Mechanics.** Lecture, three hours; discussion, one hour. Prerequisites: courses 32B, 33B. Foundations of Newtonian mechanics, kinematics and dynamics of a rigid body, variational principles and Lagrange equations; calculus of variations, variable mass; related topics in applied mathematics.

**144. Linear Programming.** Lecture, three hours; discussion, one hour. Prerequisite: course 115A or consent of instructor. Not open for credit to students with credit for Electrical Engineering 136. Principles of linear programming, duality theorem, simplex methods; applications to industrial and business problems. Additional topics such as sensitivity analysis, integer programming, distribution and transportation algorithms, and applications to game theory.

**145. Fourier Methods for Differential Equations.** Lecture, three hours; discussion, one hour. Prerequisite: course 33B. Fourier series and integral transforms, separation of variables, eigenfunction expansions. Applications from such areas as mechanical vibrations, fluid dynamics, heat conduction, and electromagnetics.

**146. Methods of Applied Mathematics.** Lecture, three hours; discussion, one hour. Prerequisite: course 33B. Integral equations, Green's function, and calculus of variations. Selected applications from control theory, optics, dynamical systems, and other engineering problems.

**147. Game Theory.** Lecture, three hours; discussion, one hour. Prerequisite: course 115A or consent of instructor. Games in extensive form, strategic equilibrium, matrix games and minimax theorem, cooperative and noncooperative solutions of bimatrix games and Lemke/Howson algorithm. Possible additional topics include combinatorial games, stochastic games, coalitional games and the core, marriage problem, and cost allocation. P/NP or letter grading.

**148A. Numerical Methods for Partial Differential Equations.** Lecture, three hours; discussion, one hour. Prerequisites: courses 141A-141B or equivalent. Introduction to first- and second-order linear partial differential equations. Finite difference and finite element solution of elliptic, hyperbolic, and parabolic equations. Method of lines and Rayleigh/Ritz procedures. Concepts of stability and accuracy. P/NP or letter grading.

**149. Mathematics of Computer Graphics.** Lecture, three hours; discussion, one hour. Prerequisites: course 115A, and Program in Computing 10A or equivalent knowledge of programming in either PASCAL or C language. Study of homogeneous coordinates, projective transformations, interpolating and approximating curves, representation of surfaces, and other mathematical topics useful for computer graphics.

**149HS. Honors Seminar: Mathematics of Computer Graphics.** Lecture, three hours. Prerequisites: course 149, consent of instructor. Limited enrollment (admission to be based on performance in course 149; participants need not be in an honors program). Participating seminar on topics not covered in course 149. Each student prepares substantial course project and presents it to class.

## Probability

**M150A-150B. Probability Theory.** Lecture, three hours; discussion, one hour. **M150A.** (Same as Statistics M152A.) Prerequisites: courses 32B, 33B. Not open to students with credit for Statistics M152A, 154A, or Electrical Engineering 131A. Probability distributions, random variables and vectors, expectation, normal approximations. P/NP or letter grading. **150B.** Prerequisite: course M150A or Statistics M152A. Convergence in distribution, laws of large numbers, Poisson processes, random walks.

**151. Stochastic Processes.** Lecture, three hours; discussion, one hour. Prerequisites: course M150A or Statistics M152A, and consent of instructor. Discrete Markov chains, continuous-time Markov chains and semi-Markov processes, renewal theory, Brownian motion.

**172A-172B. Actuarial Mathematics.** Lecture, three hours; discussion, one hour. **172A.** Prerequisite: course 70. Survival distributions and life tables, life insurance, life annuities, net premiums, net premium reserves. **172B.** Prerequisites: course 172A, Statistics 154A-154B. Multiple life functions, multiple decrement models, valuation theory for pension plans, insurance models, nonforfeiture benefits and dividends.

## Special Studies

**190. Honors Mathematics Seminar.** Lecture, three hours. Prerequisite: consent of instructor. Participating seminar on advanced topics in mathematics. Content varies from year to year. May be repeated for credit by petition.

**191. Upper Division Seminar (2 to 4 units).** Prerequisites: courses 32A, 32B, 33A, 33B, consent of instructor. Limited to 15 students. Each term department offers a limited number of seminars in various branches of mathematics. Substantial student participation. May be repeated for credit.

**199. Special Studies in Mathematics (1 to 4 units).** Prerequisite: consent of department chair and instructor. At discretion of chair and subject to availability of staff, individuals or groups may study topics suitable for undergraduate course credit but not specifically offered as separate courses. May be repeated for credit, but no more than one 199 course may be applied toward upper division courses required for a major offered by Mathematics Department.

## Graduate Courses

### Teacher Preparation

**201A-201B-201C. Topics in Algebra and Analysis.** Prerequisite: bachelor's degree in mathematics or equivalent. Designed for students in mathematics/education program. Important ideas of algebra, geometry, and calculus leading effectively from elementary to modern mathematics. Approaches to number system, point sets, geometric interpretations of algebra and analysis, integration, differentiation, series and analytic functions. May not be applied toward M.A. degree requirements.

**202A-202B. Mathematical Models and Applications.** Prerequisite: bachelor's degree in mathematics or equivalent. Designed for students in mathematics/education program. Development of mathematical theories describing various empirical situations. Basic characterizing postulates; development of a logical structure of theorems. Modern topics such as operations research, linear programming, game theory, learning models, models in social and life sciences. May not be applied toward M.A. degree requirements.

### Number Theory

**205A-205B-205C. Number Theory.** Prerequisites: courses 210A and 246A, or consent of instructor. Topics from analytic algebraic and geometric number theory, including distribution of primes and factorization in algebraic number fields. Selected topics from additive number theory, Diophantine approximation, partitions, class-field theory, lattice point problems, valuation theory, etc.

**206A-206B. Combinatorial Theory.** Prerequisite: consent of instructor. Generating functions. Probabilistic methods. Polya theorem. Enumerative graph theory. Partition theory. Number theoretical applications. Structure of graphs, matching theory, duality theorems. Packings, pavings, coverings, statistical designs, difference sets, triple systems, finite planes. Configurations, polyhedra. Ramsey theory, finite and transfinite, and applications.

### Algebra

**210A-210B-210C. Algebra.** Prerequisites: courses 110A-110B-110C or consent of instructor. Students with credit for courses 110B and/or 110C will not receive M.A. degree credit for courses 210B and/or 210C. Group theory, including theorems of Sylow and Jordan/Holder/Schreier; rings and ideals, factorization theory in integral domains, modules over principal ideal rings, Galois theory of fields, multilinear algebra, structure of algebras.

**211. Structure of Rings.** Prerequisite: course 210A or consent of instructor. Radical, irreducible modules and primitive rings, rings and algebras with minimum condition.

**212. Homological Algebra.** Prerequisite: course 210A or consent of instructor. Modules over a ring, homomorphisms and tensor products of modules, functors and derived functors, homological dimension of rings and modules.

**213A-213B. Theory of Groups.** Prerequisite: course 210A or consent of instructor. Topics include representation theory, transfer theory, infinite Abelian groups, free products and presentations of groups, solvable and nilpotent groups, classical groups, algebraic groups.

**214A-214B. Introduction to Algebraic Geometry.** Prerequisite: course 210A or consent of instructor. Basic definitions and first properties of algebraic varieties in affine and projective space: irreducibility, dimension, singular and smooth points. More advanced topics, such as sheaves and their cohomology, or introduction to theory of Riemann surfaces, as time permits.

**215A-215B. Commutative Algebra.** Prerequisite: course 210A or consent of instructor. Topics from commutative ring theory, including techniques of localization, prime ideal structure in commutative Noetherian rings, principal ideal theorem, Dedekind rings, modules, projective modules, Serre conjecture, regular local rings.

**216. Further Topics in Algebraic Geometry.** Prerequisites: courses 214A-214B or consent of instructor. Closer examination of areas of current research in algebraic geometry. Variable content may include algebraic surfaces, Abelian varieties, invariant theory, Hodge theory, or geometry over finite fields. May be repeated for credit by petition.

### Logic and Foundations

**220A-220B-220C. Mathematical Logic and Set Theory.** Prerequisites: courses M112A, 112B-112C, or equivalent. Model theory: compactness theorem; Lowenheim/Skolem theorems; definability; ultraproducts; preservation theorems; interpolation theorems. Recursion function theory: thesis of Church; recursively enumerable sets; hierarchies; degrees. Formal proofs: completeness and incompleteness theorems; decidable and undecidable theories; quantifier elimination. Set theory: Zermelo/Fraenkel and von Neumann/Gödel axioms; cardinal and ordinal numbers; continuum hypothesis; constructible sets; independence results and forcing.

**222A-222B. Lattice Theory and Algebraic Systems.** Lecture, three hours. Prerequisite: course 210A or consent of instructor. Partially ordered sets, lattices, distributivity, modularity; completeness, interaction with combinatorics, topology, and logic; algebraic systems, congruence lattices, subdirect decomposition, congruence laws, equational bases, applications to lattices.

**223A. Model Theory.** Prerequisites: courses 220A-220B-220C. Topics include ultraproducts, preservation theorems, interpolation theorems, saturated models, omitting types, categoricity, two cardinal theorems, enriched languages, soft model theory, and applied model theory.

**223B. Set Theory.** Prerequisites: courses 220A-220B-220C. Topics include constructibility theory, Cohen extensions, large cardinals, and combinatorial set theory.

**223C. Recursion Theory.** Prerequisites: courses 220A-220B-220C. Topics include degrees of unsolvability, recursively enumerable sets, undecidable theories, inductive definitions, admissible sets and ordinals, and recursion in higher types.

**223D. Descriptive Set Theory.** Prerequisites: courses 220A-220B-220C. Classical descriptive set theory: Borel and projective sets. Effective descriptive set theory. Consequences of strong set-theoretic hypotheses.

## Geometry and Topology

**225A. Differentiable Manifolds.** Lecture, three hours. Prerequisites: courses 121 and 131A-131B, or consent of instructor. Smooth manifolds and maps, basic examples and properties, orientability, tangent and cotangent spaces, embeddings and immersions, Sard theorem and transversality, vector fields and integral curves, Lie brackets and Frobenius theorem, Lie derivative, tensors, differential forms and exterior derivative, Stokes theorem on manifolds.

**225B. Introduction to Algebraic Topology.** Lecture, three hours. Prerequisite: course 225A or consent of instructor. Elementary concepts of homotopy theory; covering spaces and fundamental group. Singular homology theory, axioms of homology, Mayer-Vietoris sequence, calculation of homology of standard spaces, applications, Betti numbers and Euler characteristic, cell complexes and cellular homology.

**225C. Further Topics in Geometry and Topology.** Lecture, three hours. Prerequisites: courses 225A and 225B, or consent of instructor. Topics may include cohomology (singular, cellular, de Rham), duality theorems, de Rham theorem, degree theory, cup products, higher homotopy groups, transversality theory, Morse theory, Riemannian metric.

**226A-226B-226C. Differential Geometry.** Lecture, three hours. Prerequisite: course 225A or consent of instructor. Manifold theory; connections, curvature, torsion, and parallelism. Riemannian manifolds; completeness, submanifolds, constant curvature. Geodesics; conjugate points, variational methods, Myers theorem, nonpositive curvature. Further topics such as pinched manifolds, integral geometry, Kahler manifolds, symmetric spaces.

**227A-227B. Algebraic Topology.** Lecture, three hours. Prerequisite: course 225B or consent of instructor. CW complexes, fiber bundles, homotopy theory, cohomology theory, spectral sequences.

**229A-229B-229C. Lie Groups and Lie Algebras.** Prerequisite: knowledge of basic theory of topological groups and differentiable manifolds. Lie groups, Lie algebras, subgroups, subalgebras. Exponential map. Universal enveloping algebra. Campbell/Hausdorff formula. Nilpotent and solvable Lie algebras. Cohomology of Lie algebras. Theorems of Weyl, Levi-Mal'cev. Semi-simple Lie algebras. Classification of simple Lie algebras. Representations. Compact groups. Weyl character formula.

**233. Partial Differential Equations on Manifolds.** Lecture, three hours. Prerequisites: courses 226A and 251A, or consent of instructor. Topics may include Laplacian operator on a Riemannian manifold, eigenvalues, Atiyah/Singer index theorem, isoperimetric inequalities, elliptic estimates, harmonic functions, function theory on manifolds, Green's function, heat equation, minimal hypersurfaces, prescribed curvature equations, harmonic maps, Yang-Mills equation, Monge/Ampere equations.

**234. Topics in Differential Geometry.** Lecture, three hours. Prerequisites: courses 226A-226B or consent of instructor. Complex and Kahler geometry, Hodge theory, homogeneous manifolds and symmetric spaces, finiteness and convergence theorems for Riemannian manifolds, almost flat manifolds, closed geodesics, manifolds of positive scalar curvature, manifolds of constant curvature. Topics vary from year to year. May be repeated for credit by petition.

**235. Topics in Manifold Theory.** Lecture, three hours. Prerequisites: courses 225A and 225B, or consent of instructor. Emphasis on low-dimensional manifolds. Structure and classification of manifolds, automorphisms of manifolds, submanifolds (e.g., knots and links). Topics vary from year to year. May be repeated for credit by petition.

**236. Topics in Geometric Topology.** Lecture, three hours. Prerequisites: courses 225A and 225B, or consent of instructor. Decomposition spaces, surgery theory, group actions, dimension theory, infinite dimensional topology. Topics vary from year to year. May be repeated for credit by petition.

**237. Topics in Algebraic Topology.** Lecture, three hours. Prerequisites: courses 227A-227B or consent of instructor. Fixed-point theory, fiber spaces and classifying spaces, characteristic classes, generalized homology and cohomology theories. Topics vary from year to year. May be repeated for credit by petition.

## Analysis and Differential Equations

**240. Methods of Set Theory.** Lecture, three hours. Prerequisites: courses 110A-110B, 121 or equivalent, 131A-131B. Naive, axiomatic set theory, axiom of choice and its equivalents, well-orderings, transfinite induction, ordinal and cardinal arithmetic. Applications to algebra: Hamel bases, Stone representation theorem. Applications to analysis and topology: Cantor/Bendixson theorem, counterexamples in measure theory, Borel and analytic sets, Choquet theorem.

**245A-245B-245C. Real Analysis.** Lecture, three hours. Prerequisites: courses 121, 131A-131B, or equivalent. Students with credit for course 134 will not receive M.A. degree credit for course 245A. Basic measure theory. Measure theory on locally compact spaces. Fubini theorem. Elementary aspects of Banach and Hilbert spaces and linear operators. Function spaces. Radon/Nikodym theorem. Fourier transform and Plancherel on  $\mathbb{R}^n$  and  $\mathbb{T}^n$ .

**246A-246B-246C. Complex Analysis.** Prerequisites: courses 131A-131B. Students with credit for course 132 will not receive M.A. degree credit for course 246A. Cauchy/Riemann equations. Cauchy theorem. Cauchy integral formula and residue calculus. Power series. Normal families. Harmonic functions. Linear fractional transformations. Conformal mappings. Analytic continuation. Examples of Riemann surfaces. Infinite products. Partial fractions. Classical transcendental functions. Elliptic functions.

**247A-247B. Classical Fourier Analysis.** Lecture, three hours. Prerequisites: courses 245A-245B, 246A. Distribution on  $\mathbb{R}^n$  and  $\mathbb{T}^n$ . Principal values; other examples. Distributions with submanifolds as supports. Kernel theorem. Convolution; examples of singular integrals. Tempered distributions and Fourier transform theory on  $\mathbb{R}^n$ . Distributions with compact or one-sided supports and their complex Fourier transforms.

**250A. Ordinary Differential Equations.** Prerequisite: course 246A or consent of instructor. Basic theory of ordinary differential equations. Existence and uniqueness of solutions. Continuity with respect to initial conditions and parameters. Linear systems and  $n$ th order equations. Analytic systems with isolated singularities. Self-adjoint boundary value problems on finite intervals.

**250B. Nonlinear Ordinary Differential Equations.** Prerequisite: course 250A. Asymptotic behavior of nonlinear systems. Stability. Existence of periodic solutions. Perturbation theory of two-dimensional real autonomous systems. Poincaré/Bendixson theory.

**250C. Advanced Topics in Ordinary Differential Equations.** Prerequisites: courses 250A, 250B. Selected topics, such as spectral theory or ordinary differential operators, nonlinear boundary value problems, celestial mechanics, approximation of solutions, and Volterra equations.

**251A. Introductory Partial Differential Equations.** Prerequisite: consent of instructor. Classical theory of heat, wave, and potential equations; fundamental solutions, characteristics and Huygens principle, properties of harmonic functions. Classification of second-order differential operators. Maximum principles, energy methods, uniqueness theorems. Additional topics as time permits.

**251B-251C. Topics in Partial Differential Equations.** Prerequisite: consent of instructor. In-depth introduction to topics of current interest in partial differential equations or their applications.

**252A-252B-252C. Topics in Complex Analysis.** Lecture, three hours. Prerequisites: courses 245A-245B-245C and 246A-246B-246C, or consent of instructor. Potential theory, subharmonic functions, harmonic measure; Hardy spaces; entire functions; univalent functions; Riemann surfaces; extremal length, variational methods, quasi-conformal mappings. Topics vary from year to year.

**253A-253B. Several Complex Variables.** Prerequisites: courses 245A-245B-245C and 246A-246B-246C, or consent of instructor. Introduction to analytic functions of several complex variables. The  $\bar{\partial}$  problem, Cousin problems, domains of holomorphy, complex manifolds.

**254A-254B. Topics in Real Analysis.** Prerequisites: courses 245A-245B-245C, 246A-246B-246C. Selected topics in analysis and its applications to geometry and differential equations. Topics may vary from year to year. May be repeated for credit by petition.

## Functional Analysis

**255A. Functional Analysis.** Prerequisites: courses 245A-245B or 265A-265B, and 246A, or consent of instructor. Banach spaces, basic principles. Weak topologies. Compact operators. Fredholm operators. Special spaces including Hilbert spaces and  $C(X)$ .

**255B-255C. Topics in Functional Analysis.** Prerequisite: course 255A. Topics include Banach algebras, operators on Banach spaces and Hilbert space, semigroups of operators, linear topological vector spaces, and other related areas.

**256A-256B-256C. Topological Groups and Their Representations.** Lecture, three hours. Prerequisite: course 255A or consent of instructor. Topological groups and their basic properties. Haar measure. Compact groups and their representations. Duality and Fourier analysis on locally compact abelian groups. Induced representations, Frobenius reciprocity. Representations of special groups (Lorentz, Galilean, etc.). Projective representations. Representations of totally disconnected groups.

**258A-258B. Commutative Banach Algebras.** Lecture, three hours. Prerequisites: courses 246A, 255A, 255B. Gelfand theory of commutative Banach algebras. Applications to harmonic analysis on locally compact abelian groups. Algebras of holomorphic functions. Special topics.

**259A-259B. Operator Algebras in Hilbert Space.** Prerequisites: courses 255A, 255B-255C. Selected topics from theories of  $C^*$  and von Neumann algebras. Applications.

## Applied Mathematics

**260. Introduction to Applied Mathematics.** Prerequisite: course 142 or consent of instructor. Construction, analysis, and interpretation of mathematical models of problems which arise outside of mathematics.

**261. Multiperson Game Theory.** Lecture, three hours. Prerequisite: graduate standing in mathematics or consent of instructor. Nonadditive set functions; games in characteristic function form; imputations and domination; von Neumann/Morgenstern solutions; the core; totally balanced games; kernel and nucleolus; multi-linear extension and Shapley value; fixed-point theorems; Nash equilibrium; nontransferable utility; lambda-transfer method. Applications to markets, cost allocation, assignment and marriage problems, voting power.

**264. Applied Complex Analysis.** Prerequisite: course 246A or consent of instructor. Topics include contour integration conformal mapping, differential equations in complex plane, special functions, asymptotic series, Fourier and Laplace transforms, singular integral equations.

**265A-265B. Real Analysis for Applications.** Prerequisites: courses 131A-131B or consent of instructor. Not open for credit to students with credit for courses 245A-245B-245C. Lebesgue measure and integration on real line, absolutely continuous functions, functions of bounded variation,  $L^2$  and  $L^p$  spaces. Fourier series. General measure and integrations, Fubini and Radon/Nikodym theorems, representation of functionals, Fourier integrals.

**266A. Applied Ordinary Differential Equations.** Prerequisites: courses 131A-131B, 132, and 135A-135B or 145 and 146. Spectral theory of regular boundary value problems and examples of singular Sturm/Liouville problems, related integral equations, phase/plane analysis of nonlinear equations.

**266B-266C. Applied Partial Differential Equations.** Prerequisite: course 266A or consent of instructor. Classification of equations, classical potential theory, Dirichlet and Neumann problems. Green's functions, spectral theory of Laplace equation in bounded domains, first-order equations, wave equations, Cauchy problem, energy conservation, heat equation, fundamental solution, equations of fluid mechanics and magnetohydrodynamics.

**266D-266E. Applied Differential Equations.** Prerequisites: courses 266A, 266B-266C. Advanced topics in linear and nonlinear partial differential equations, with emphasis on energy estimates, numerical methods, and applications to fluid mechanics. Additional topics include dispersive waves, systems with multiple time scales, and applications to fluid mechanics.

**267A-267B. Applied Algebra.** Prerequisite: course 110A or equivalent. Students with credit for course 210A will not receive M.A. degree credit for course 267A. Linear algebra, eigenvalues, and quadratic forms; linear inequalities, finite fields, and combinatorial analysis. Group theory, with emphasis on representations. Application to physical problems.

**268A. Applied Functional Analysis.** Lecture, three hours. Prerequisites: courses 115A-115B, 131A-131B, and 132, or consent of instructor. Topics may include Hilbert spaces, distributions, Fourier transforms,  $L^2$  space, the Laplacian, linear operators, spectrum and resolvent, self-adjoint and unitary operators, problems of evolution in Banach spaces, well-posed initial value problems, semigroups, applications to applied problems.

**268B-268C. Topics in Applied Functional Analysis.** Prerequisite: course 255A. Topics include spectral theory with applications to ordinary differential operators, eigenvalue problems for differential equations, generalized functions, and partial differential equations.

**269A-269B-269C. Advanced Numerical Analysis.** Prerequisites: courses 115A, 135A, and 140A-140B-140C, or consent of instructor. Numerical solution for systems of ordinary differential equations; initial and boundary value problems. Numerical solution for elliptic, parabolic, and hyperbolic partial differential equations. Topics in computational linear algebra.

**270A-270F. Mathematical Aspects of Scientific Computing.** (Formerly numbered 270A-270E.) Lecture, three hours. Prerequisites: courses 115A, 140A or 141A-141B, and Program in Computing 10A or equivalent, or consent of instructor:

**270A.** Techniques of Scientific Computing. Mathematical modeling for computer applications, scientific programming languages, software development, graphics, implementation of numerical algorithms on different architectures, case studies.

**270B-270C.** Computational Linear Algebra. Direct, fast, and iterative algorithms, overdetermined systems; singular value decomposition, regularization, sparse systems, algebraic eigenvalue problem.

**270D-270E.** Computational Fluid Dynamics. Basic equations, finite difference, finite element, pseudo-spectral, and vortex methods; stability, accuracy, shock capturing, and boundary approximations.

**270F. Parallel Numerical Algorithms.** Prerequisites: courses 270B-270C. Recommended: courses 270A, 270D-270E. Design, analysis, and implementation of numerical algorithms on modern vector and parallel computers. Discussion of classical numerical algorithms and novel parallel algorithms. Emphasis on applications to PDEs.

**271A. Tensor Analysis.** Prerequisite: course 131A or consent of instructor. Algebra and calculus of tensors on  $n$ -dimensional manifolds. Curvilinear coordinates and coordinate-free methods. Covariant differentiation. Green/Stokes theorem for differential forms. Applications to topics such as continuum and particle mechanics.

**271B. Analytical Mechanics.** Prerequisites: course 271A, prior knowledge of mechanics. Newtonian and Lagrangian equations. Hamilton principle. Principle of least action. Holonomic and nonholonomic systems. Hamilton canonical equations, contact transformations, applications.

**271C. Introduction to Relativity.** Prerequisites: course 271A, prior knowledge of mechanics. Restricted theory of relativity. Extensions to general theory. Relativistic theory of gravitation.

**271D. Wave Mechanics.** (Formerly numbered 273.) Prerequisite: consent of instructor. General concepts of mechanical systems (states, space-time, "logics," etc.). Classical and quantum examples. Correspondence principle. Spinors.

**272A. Foundations of Continuum Mechanics.** Lecture, three hours. Prerequisite: consent of instructor. Kinematic preliminaries, conservation laws for mass, momentum and energy, entropy production, constitutive laws. Linear elasticity, inviscid fluid, viscous fluid. Basic theorems of fluid mechanics. Simple solutions. Low Reynolds number flow, Stokes drag. High Reynolds number flow, boundary layers. Two-dimensional potential flow, simple aerofoil. Compressible flow, shocks.

**272B. Mathematical Aspects of Fluid Mechanics.** Lecture, three hours. Prerequisite: course 272A or consent of instructor. Review of basic theory of moving continua, fluid equations, integral theorems. Simple solutions, flow created by slowly moving bodies, flows where viscosity is negligible, vortices, boundary layers and their separation, water waves, ship waves, compressional waves, shock waves, turbulence theory (overview).

**272C. Magnetohydrodynamics.** Lecture, three hours. Prerequisites: course 272A, consent of instructor. Basic electromagnetism. Steady flows, Hartmann layers. Alfvén theorem and waves. Compressible media. Magnetostatic equilibria and stability.

**272D. Rotating Fluids and Geophysical Fluid Dynamics.** Lecture, three hours. Prerequisite: consent of instructor. Effects of Coriolis forces on fluid behavior. Inviscid flows, Taylor/Proudman theorem, Taylor columns, motions of bodies, inertial waves in spheres and spherical shells, Rossby waves. Ekman layers, spin-up. Shallow-water theory, wind-driven ocean circulation. Effects of stratification, Benard convection. Baroclinic instability, Eady model. S/U or letter grading.

**273. Optimization, Calculus of Variations, and Control Theory.** Prerequisite: consent of instructor. Application of abstract mathematical theory to optimization problems of calculus of variations and control theory. Abstract nonlinear programming and applications to control systems described by ordinary differential equations, partial differential equations, and functional differential equations. Dynamic programming.

**274A. Asymptotic Methods.** (Formerly numbered M274A.) Lecture, three hours. Prerequisites: course 132, Mechanical, Aerospace, and Nuclear Engineering 192A, or equivalent. Fundamental mathematics of asymptotic analysis, asymptotic expansions of Fourier integrals, method of stationary phase. Watson lemma, method of steepest descent, uniform asymptotic expansions, elementary perturbation problems.

**274B-274C. Perturbation Methods.** Lecture, three hours. Prerequisite: course 266A or equivalent. Boundary layer theory, matched asymptotic expansions, WKB theory. Problems with several time scales: Poincaré method, averaging techniques, multiple-scale analysis. Application to eigenvalue problems, nonlinear oscillations, wave propagation, and bifurcation problems. Examples from various fields of science and engineering.

## Probability and Statistics

**275A-275B. Probability Theory.** Prerequisite: course 245A or 265A. Connection between probability theory and real analysis. Weak and strong laws of large numbers, central limit theorem, conditioning, ergodic theory, martingale theory.

**275C. Stochastic Processes.** Lecture, three hours. Prerequisite: course 275B or consent of instructor. Brownian motion, continuous-time martingales, Markov processes, potential theory. S/U or letter grading.

**275D. Stochastic Calculus.** Lecture, three hours. Prerequisite: course 275C or consent of instructor. Stochastic integration, stochastic differential equations, Itô formula and its applications. S/U or letter grading. (Alternates yearly with course 275E.)

**275E. Stochastic Particle Systems.** Lecture, three hours. Prerequisite: course 275C or consent of instructor. Interacting particle systems, including contact process, stochastic Ising model, and exclusion processes; percolation theory. S/U or letter grading. (Alternates yearly with course 275D.)

**276A-276B. Statistical Theory.** Lecture, three hours. Prerequisite: Statistics 152C or consent of instructor.

**276A.** Sufficiency, exponential families, least squares, maximum likelihood estimation, Fisher information, Cramér/Rao inequality, confidence intervals. **276B.** Asymptotic properties of tests and estimates, consistency and efficiency, likelihood ratio tests, chi-squared tests.

**276C. Statistical Decision Theory.** Prerequisite: course 276A. Invariant estimates and tests; best unbiased and locally best tests; multiple decision problems; application to general linear model; other topics.

**277. Data Analysis.** Lecture, three hours. Prerequisites: course 276A and Statistics M153A, or consent of instructor. Outline of principles of applied statistics, followed by survey of specific data analyses from physical, life, and social sciences. Methods include regression, analysis of variance and covariance, survival analysis, categorical data analysis, and simple time-series analysis. Illustration of transformations, plotting, model selection and evaluation, and estimation and decision procedures.

**278A. Multivariate Analysis.** Lecture, three hours. Prerequisite: course 276B or consent of instructor. Distributions in several dimensions, partial and multiple correlation. Normal distribution theory, Wishart distribution, Hotelling  $T^2$ . Principal components, canonical correlation, discriminant analysis. Introduction to linear structural relations and factor analysis.

**278B. Nonparametric and Robust Statistics.** Lecture, three hours. Prerequisite: course 276B or consent of instructor. Development of nonparametric and robust procedures for hypothesis testing, estimation in one- and two-sample problems, linear and nonlinear regression, multiple classification, density estimation.

**278C. Decision Theory.** Lecture, three hours. Prerequisites: courses 131A and 276B, or consent of instructor. Bayes, admissible, and minimax decision rules. Invariant tests and estimates, best unbiased tests, locally best tests. Application to general linear model.

**278D. Sequential Analysis.** Lecture, three hours. Prerequisites: courses 131A and 276B, or consent of instructor. Bayes sequential decision problems, stopping rule problems, optimality of sequential probability ratio test, Wald identity, asymptotic theory, and other topics.

**M279A-M279B. Linear Statistical Models.** (Formerly numbered M279A-M279B-M279C.) (Same as Biostatistics M250A-M250B.) Lecture, three hours; discussion, one hour. Prerequisites: Biostatistics 110C, Statistics 152C, or equivalent. Topics include linear algebra applied to linear statistical models, distribution of quadratic forms, Gauss/Markov theorem, fixed and random component models, balanced and unbalanced designs.

**M280. Statistical Computing.** (Same as Biostatistics M280 and Biostatistics M280.) Lecture, three hours. Prerequisites: course 115A, Statistics 152C, or equivalent. Introduction to theory and design of statistical programs: computing methods for linear and nonlinear regression, dealing with constraints, robust estimation, and general maximum likelihood methods.

## Special Studies

**285A-285L. Seminars.** Prerequisite: consent of instructor. No more than two 285 courses may be applied toward M.A. degree requirements except by prior consent of graduate vice chair. Topics in various branches of mathematics and their applications by means of lectures and informal conferences with staff members:

**285A.** History and Development of Mathematics.

**285B.** Number Theory.

**285C.** Algebra.

**285D.** Logic.

**285E.** Geometry.

**285F.** Topology.

**285G.** Analysis.

**285H.** Differential Equations.

**285I.** Functional Analysis.

**285J.** Applied Mathematics.

**285K.** Probability.

**285L.** Statistics.

**290. Seminar: Current Literature.** Intended for Ph.D. candidates. Readings and presentations of papers in mathematical literature under supervision of a staff member.

**296A-296M. Participating Seminars (1 to 4 units each).** (Formerly numbered 286A-286M.) Prerequisite: consent of instructor. Seminars and discussion by staff and students. S/U grading:

**296A.** History and Development of Mathematics.

**296B.** Number Theory.

**296C.** Algebra.

**296D.** Logic.

**296E.** Geometry.

**296F.** Topology.

**296G.** Analysis.

**296H.** Differential Equations.

**296I.** Functional Analysis.

**296J.** Applied Mathematics.

**296K.** Probability.

**296L.** Statistics.

**296M.** Mathematics.

**370. Teaching Mathematics.** Lecture, three hours. Prerequisites: course 3B or 31B, senior standing. Critical inquiry into present-day tendencies in teaching mathematics.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495. Teaching College Mathematics (2 units).** Lecture/discussion (four 90-minute meetings during term, plus intensive training week at beginning of Fall Quarter). Required of all new teaching assistants. Special course for teaching assistants designed to deal with problems and techniques of teaching college mathematics. S/U grading.

**596. Directed Individual Study or Research (2 to 8 units).** Supervised individual reading and study on project approved by a faculty member, which may be preparation for M.A. examination. May be repeated for credit, but only two 596 courses (eight units) may be applied toward M.A. degree unless departmental consent is obtained.

**599. Research in Mathematics (2 to 12 units).** Prerequisite: advancement to doctoral candidacy. Study and research for Ph.D. dissertation. May be repeated for credit.

## Program in Computing

Program in Computing 1 is designed for students who wish a broad, general introduction to the topic of computers and computation. It is strongly recommended for those who wish to take course 3 or 10A, but who have no prior experience in computing.

Students who would like one course in programming should take either course 3 (uses FORTRAN) or 10A (uses PASCAL), depending on the advice of their major department.

The sequence (courses 10A, 10B, 10C, 15, 30, 60) provides an extensive education in basic computer science. It is intended for Letters and Science majors who are completing a specialization in computing and for those planning to take upper division coursework in computer science. These students should take all or part of the sequence, depending on the advice of their major department.

## Lower Division Courses

**1. Introduction to Computers and Computing.** Lecture, three hours; laboratory, one hour; computer assignments, five hours. Fundamentals of computers and computing; applications software, editors, spreadsheets, file manager; machine organization and computer hardware. Brief introduction to programming.

**3. Introductory FORTRAN Programming (5 units).** Lecture, three hours; discussion, two hours; laboratory, eight hours. Students with credit for course 10A will receive only two units of credit for this course. Basic principles of programming, using FORTRAN as example language. Terminal course intended for physical sciences and engineering majors who need to use the extensive library of existing FORTRAN programs. Students who wish to take more advanced program in computing courses should take course 10A rather than this course.

**10A. Introduction to Programming (5 units).** Lecture, three hours; discussion, two hours; laboratory, eight hours. Recommended prerequisite for students with no prior computing experience: course 1. Students with credit for course 3 will receive only two units of credit for this course. Basic principles of programming, using PASCAL as example language: algorithmic, procedural problem solving; program design and development; control structures and data structures; human factors in programming and program design.

**10B. Intermediate Programming (5 units).** Lecture, three hours; discussion, two hours; laboratory, eight hours. Prerequisite: course 10A. Arrays, pointers, classes; abstract data types, object-oriented programming; text processing, recursion, linked lists, stacks, queues, trees, and applications. Example language to be C++.

**10C. Advanced Programming (5 units).** Lecture, three hours; discussion, two hours; laboratory, eight hours. Prerequisite: course 10B. Sorting and searching; lexical analysis and parsing; algorithmic analysis; programming in UNIX environment.

**15. Introduction to LISP and Symbolic Computation (5 units).** Lecture, three hours; discussion, two hours; laboratory, eight hours. Prerequisite: course 1. Introduction to symbolic computation using LISP programming language. Basics: list structures, recursion, function abstraction. Advanced topics: knowledge representation, higher-order functions, problem-solving algorithms and heuristics. P/NP or letter grading.

**30. Machine Organization and Assembly Language Programming (5 units).** Lecture, three hours; discussion, two hours; laboratory, eight hours. Prerequisite: course 10B. Not open for credit to students with credit for former Computer Science 30. Description of machine organization and operation. Representation of information, instruction sets and formats, addressing modes, memory organization and management, I/O processing and interrupts.

**60. Data Structures and Algorithms.** Lecture, three hours; discussion, one hour; laboratory, five hours. Prerequisites: course 10B, Mathematics 31A, 31B, 61. Review of basic data structures: arrays, stacks, queues, lists, trees. Advanced data structures: priority queues, heaps, balanced trees. Sorting, searching techniques. Corresponding algorithms.

**97. Special Topics in Programming.** Lecture, three hours; discussion, one hour. Prerequisite: course 10A. Variable topics in programming not covered in regular program in computing courses. May be repeated for credit with topic change. P/NP or letter grading.

## Upper Division Courses

**110. Introduction to Concurrent Computation.** Lecture, three hours; discussion, two hours; laboratory, eight hours. Prerequisite: course 10C or equivalent familiarity with programming in C or C++ language. Introduction to programming of concurrent (parallel) computers. Shared and distributed memory parallel architectures; currently available concurrent machines; parallel algorithms and development of concurrent programs; estimation of algorithmic performance; selected advanced topics.

**197. Advanced Topics in Programming.** Lecture, three hours; discussion, two hours. Prerequisite: consent of instructor. Variable topics in programming and the mathematics of programming not covered in regular program in computing courses. May be repeated for credit with topic change. P/NP or letter grading.

## Graduate Courses

**285. Seminar: Logic and Theory of Computation.** Prerequisite: consent of instructor. Topics in various aspects of logic and theory of computation. Course is considered equivalent to a Mathematics 285 course for purpose of degree requirements.

**296. Participating Seminar: Logic and Theory of Computation (1 to 4 units).** (Formerly numbered 286.) Prerequisite: consent of instructor. Seminar and discussion by staff and students. S/U grading.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

## Statistics

### Lower Division Course

**50. Elementary Statistics.** Lecture, three hours; discussion, one hour. Prerequisite: three years of high school mathematics or consent of instructor. Descriptive statistics, elementary probability, random variables, binomial and normal distributions. Large and small sample inference concerning means.

## Upper Division Courses

Students planning to pursue advanced degrees in statistics should enroll in the M152A, 152B-152C sequence. The 154A-154B sequence is less comprehensive than the 152 series. In particular, probability topics do not receive the same level of coverage. Courses 154A-154B are offered each term. The remaining upper division courses are usually offered once or twice each year. The tentative class schedule for the forthcoming academic year is posted in the Student Services Office in February.

**M152A. Probability Theory.** (Same as Mathematics M150A.) Lecture, three hours; discussion, one hour. Prerequisites: Mathematics 32B, 33B. Not open to students with credit for course 154A, Mathematics M150A, or Electrical Engineering 131A. Probability distributions, random variables and vectors, expectation, normal approximations. P/NP or letter grading.

**152B-152C. Statistics.** Lecture, three hours; discussion, one hour. Not open to students with credit for courses 154A-154B. P/NP or letter grading. **152B.** Prerequisite: course M152A. Survey sampling, estimation, testing, data summary, one- and two-sample problems. **152C.** Prerequisite: course 152B. Analysis of variance, categorical data, linear regression, decision theory and Bayesian inference.

**M153A-M153B. Introduction to Computational Statistics.** (Same as Biomathematics M153A-M153B and Biostatistics M153A-M153B.) Lecture, three hours; discussion, one hour. Prerequisites: course 152B, Mathematics 115A. Linear and nonlinear regression analysis using package programs. Emphasis on relation between statistical theory, numerical results, and analysis of data. **M153A.** BMDP, SAS, and SPSS regression programs; general linear model theory; linear regression analysis; transforming and weighting; regression diagnostics; model building. **M153B.** Analysis of variance and covariance; nonlinear regression programs, analysis, and applications; maximum likelihood analysis; robust regression.

**154A-154B. Statistics.** Lecture, three hours; discussion, one hour. Not open to students with credit for courses M152A and 152B. P/NP or letter grading. **154A.** Prerequisites: Mathematics 32B, 33B. Not open to students with credit for Mathematics M150A or Electrical Engineering 131A. Probability, distributions, expectation, estimation, central limit theorem, confidence intervals, testing. **154B.** Prerequisite: course 154A. One- and two-sample problems, goodness of fit and contingency tables, correlation and regression, analysis of variance, nonparametrics.

**154A-154B. Statistics.** Lecture, three hours; discussion, one hour. Not open to students with credit for courses M152A and 152B. P/NP or letter grading. **154A.** Prerequisites: Mathematics 32B, 33B. Not open to students with credit for Mathematics M150A or Electrical Engineering 131A. Probability, distributions, expectation, estimation, central limit theorem, confidence intervals, testing. **154B.** Prerequisite: course 154A. One- and two-sample problems, goodness of fit and contingency tables, correlation and regression, analysis of variance, nonparametrics.

## Microbiology and Molecular Genetics

1602 Molecular Sciences, (310) 825-8482

### Professors

Arnold J. Berk, M.D.  
Frederick A. Eiserling, Ph.D.  
C. Fred Fox, Ph.D.  
H. Ronald Kaback, M.D.  
Aldons J. Lusis, Ph.D.  
Jeffrey H. Miller, Ph.D.  
Sherie L. Morrison, Ph.D., *Chair*  
Donald P. Nierlich, Ph.D.  
Eli E. Sercarz, Ph.D.

Jack Stevens, D.V.M., Ph.D.  
Bernadine J. Wisnieski, Ph.D.  
Owen N. Witte, M.D. (*President's Professor of Developmental Immunology*)  
June Lascelles, Ph.D., *Emerita*  
Rafael J. Martinez, Ph.D., *Emeritus*  
M.J. Pickett, Ph.D., *Emeritus*  
Sydney C. Rittenberg, Ph.D., *Emeritus* (*Distinguished Teaching Award*)  
William R. Romig, Ph.D., *Emeritus* (*Distinguished Teaching Award*)

#### Associate Professors

Robert P. Gunsalus, Ph.D.  
Robert W. Simons, Ph.D.  
Fuyuhiko Tamanoi, Ph.D.

#### Assistant Professors

Douglas L. Black, Ph.D.  
Patricia Hartzell, Ph.D.  
Virginia L. Miller, Ph.D.

#### Adjunct Assistant Professor

Ralph Robinson, Ph.D.

## Scope and Objectives

Microbiology at UCLA is a diverse science that includes bacteriology, virology, genetics, molecular biology, and the study of single cells. The science has its roots in the fundamental human needs of health, nutrition, and environmental control, and it provides opportunities for study in the basic biological fields of genetics and cellular and molecular biology.

Undergraduate students majoring in microbiology and molecular genetics prepare for careers in biomedical research, medicine or dentistry, biotechnology and genetic engineering, industrial microbiology, and agricultural or environmental sciences, among others. The courses presented by the department lead to a Bachelor of Science degree and depend heavily on preparation in chemistry, biology, physics, and mathematics. They provide preparation for careers in microbiology or for further advanced study leading to the doctorate.

The graduate program emphasizes the areas of molecular genetics, cell biology, immunology, cell and virus structure and morphogenesis, animal virology, general bacteriology and physiology, host/parasite relationships, medical microbiology, microbial genetics, and recombinant DNA research. Students are prepared for creative research careers in all of these fields. The objective of the department is to provide breadth in microbiology at the undergraduate level and depth and training in independent study and research for graduate students.

Note: Several upper division and graduate courses in this department are multiple-listed with those in the Microbiology and Immunology Department in the UCLA School of Medicine. If you are interested in a doctoral program with a fundamentally disease-oriented approach to microbiology, see the Microbiology and Immunology Department description in Chapter 16.

## Bachelor of Science Degree

### Premicrobiology and Molecular Genetics Major

While you are completing the preparation courses for the major, you are considered a premicrobiology and molecular genetics major. After completing the preparation courses with a minimum grade-point average of 2.0, you should petition to enter the major in the Student Affairs Office, 1602 Molecular Sciences. All preparation courses must be taken for a letter grade. If you enter with 80 or more units of credit, in order to specify premicrobiology and molecular genetics as your major, you must have completed one year of general chemistry; Biology 5, 9, or equivalent; at least one of the following: organic chemistry with laboratory (two courses), calculus-based physics (one year), calculus (one year).

### Preparation for the Major

*Required:* Biology 5, 9, 100A, 108, or equivalent; Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL; Mathematics 3A, 3B, 3C (or 31A, 31B, 32A); Physics 6A, 6B, 6C (or 8A/8AL, 8B/8BL, 8C/8CL, 8D/8DL).

### The Major

*Required:* Microbiology and Molecular Genetics 101, 102, C106, C119, M185A; Chemistry and Biochemistry 132A, 132B/132BL, 153A, 153C, 153L; four additional upper division courses from the departmental list or from related departments selected with approval of your faculty adviser. All major courses must be taken for a letter grade, with a minimum overall 2.0 GPA in the major. A maximum of four units of Microbiology and Molecular Genetics 199, taken for a letter grade, may be applied toward the major. Credit for 199 courses from other departments may not be applied.

### Honors Program

An overall grade-point average of 3.2 and a 3.5 in the premajor and major respectively are required to apply for departmental honors. In addition you must have junior standing and the sponsorship of a faculty adviser. The core of the program consists of three terms (minimum) of Microbiology and Molecular Genetics 199H research, culminating in a thesis. If the thesis is accepted by the honors committee, you are awarded the bachelor's degree with departmental honors. The department also offers an honors seminar course each Spring Quarter for the elective program. For further information, contact the Student Affairs Office, 1602 Molecular Sciences.

## Master of Arts Degree

### Admission

Requirements for admission are the same as for the Ph.D. degree, with the addition of a research proposal. Students who select this

program must obtain sponsorship for a laboratory research problem prior to submitting an application.

The department accepts relatively few students whose objective is a master's degree; applicants must contact a potential faculty sponsor at the time of application.

## Ph.D. Degree

### Admission

For admission, you must have completed an undergraduate major in microbiology or a related field with superior scholastic achievement. You should have preparation in calculus, physics, biology, genetics, organic and biological chemistry, and microbiology. Physical chemistry is strongly recommended. You may be admitted with background deficiencies to be remedied prior to or concurrent with graduate studies. Submit scores of the Graduate Record Examination (GRE) General Test directly to the department. The Subject Test in Biology, Biochemistry, or Chemistry is recommended. Evidence (via letters of recommendation, interviews, or direct knowledge) of superior research potential and motivation is also required. Completion of a master's degree is not normally required.

Applications, brochures, and additional information on the master's and Ph.D. programs are available from the Graduate Adviser, Student Affairs Office, Department of Microbiology and Molecular Genetics, 1602 Molecular Sciences, UCLA, Los Angeles, CA 90024-1489.

## Course Requirements

### Formal Lecture/Laboratory Courses

*Biochemistry* — Chemistry and Biochemistry CM253 (six units; offered only in Fall Quarter; to be completed during the first year) is required.

*Genetics and Regulation* — One 200-level, four-unit course to be selected from the current course listings maintained in the Student Affairs Office is required.

A total of eight additional units of 200-level coursework to be selected from at least two of the following three subject areas is required: (1) general microbiology and cell biology, (2) host/parasite interactions and virology, (3) immunology. Acceptable courses are listed in the Student Affairs Office.

You are expected to complete a course in physical chemistry (Chemistry and Biochemistry 156). This requirement can be waived on the basis of work done before entering UCLA.

### Student-Participation Seminar Courses

Each term, seminar courses in which students read and report on current scientific research literature are organized. You must enroll in five such courses (10 units) prior to completing your degree.

### Laboratories

During your first 15 months in residence, you rotate for one term each through three labora-

tories within the department (outside laboratories are permissible with consent of the advisory committee). You normally enroll in Microbiology and Molecular Genetics 596 for four units of credit for each laboratory rotation.

### First-Year Proposal

By June 30 of your first year of study you must submit an original research proposal of approximately five pages. The topic may be based on a subject presented in a departmental professional seminar or on material from one of the seminar courses. Suggestions and evaluations are returned to you and used by the faculty to evaluate continuation into the second year.

### Teaching Experience

The department considers teaching experience to be an integral part of the graduate program. All Ph.D. candidates are required to serve as teaching assistants or in some other formal teaching capacity for three terms. Prior experience at another institution is acceptable when approved by the departmental graduate adviser.

### Qualifying Examinations

The oral examination must be taken within 24 months of entry into graduate school and must be passed, if reexamination is required, no later than 27 months from the date of entry. (These periods may be extended with the written consent of the departmental graduate adviser and your mentor.)

The examination is administered by the doctoral committee which normally serves as the thesis committee as well. As a major part of the examination, you prepare and defend a written research proposal. Before presentation to the doctoral committee, you are encouraged to present the proposal before a student seminar group.

The University Oral Qualifying Examination covers both your proposal and general scientific background. It is not restricted to the topics of the proposal. The committee may arrange alternate ways to assess your preparation and qualifications.

### Dissertation/Final Oral Examination

A dissertation on a subject of your choice selected in consultation with your major professor is required. The final oral examination, administered by the doctoral committee, is a defense of the completed dissertation, presented as a professional seminar and open in part to the public.

### Lower Division Courses

**6. Introduction to Microbiology.** Lecture, three hours. Not open for credit to students with credit for course 101, Biology 5, or equivalent courses. Designed for nontechnical students; introduction to biology of microorganisms (bacteria, viruses, protozoa, algae, fungi), their significance as model systems for understanding fundamental cellular processes, and their role in human affairs. Mr. Robinson (F,W,Sp)

**6L. Microbiology Laboratory (2 units).** Laboratory, six hours. Prerequisite: Chemistry 15. Optional laboratory, with emphasis on basic principles of diagnostic microbiology for students entering allied health fields. Focus on purposes and functions of clinical microbiology laboratory in diagnosis of infectious diseases, as well as application of aseptic disinfectant techniques. Practical insight and experience in modern medical procedures and new technologies. Mr. Robinson (Sp)

**7. Developments in Biotechnology.** Lecture, three hours. Prerequisite: course 6 or Biology 2 or 5. Not open for credit to students with credit for course 101. Survey of recent developments in biotechnology, with emphasis on use of single-celled organisms. Review of basic principles of microbiology as they apply to biotechnology and examination of wide variety of topics, including alternate energy sources, pollution, cleanup, genetic fingerprinting, genetic engineering, and agricultural and food microbiology. P/NP or letter grading. Mr. Robinson (F,W)

### Upper Division Courses

**101. Fundamentals of Bacteriology.** Lecture, three hours; laboratory, six hours. Prerequisites: Biology 100A, Chemistry 153A. Recommended: Biology 108. Historical foundations of the science; introduction to bacterial structure, physiology, biochemistry, genetics, and ecology. Mr. Gunsalus (W), Ms. Hartzell (F)

**102. Introductory Virology.** Lecture, three hours; laboratory, four hours. Prerequisites: Biology 100A, 108. Recommended: Chemistry 153A. Biological properties of bacterial and animal viruses; replication; methods of detection; interactions with host cells and multicellular hosts. Mr. Berk, Mr. Witte (W)

**C104A. Mammalian Cell as a Microorganism (2 units).** Lecture, three hours; discussion, four hours. Prerequisites: Biology 100A, Chemistry 132A, 132B, 153A. Recommended: Chemistry 153B, 153C. Cultured mammalian cell as an experimental system for study of normal regulatory processes and disease mechanisms. Contents include regulation of cell growth in chemically defined medium; establishment, cloning, and characterization of cell lines, cultured cells as model systems in study of normal growth and development, disease mechanisms and cancer. May be concurrently scheduled with course C204A. P/NP or letter grading. Mr. Fox (F, first five weeks)

**C104B. Mammalian Cell Genetics (2 units).** Lecture, two hours; discussion, two hours. Prerequisites: biochemistry, introductory genetics. Topics include cytogenetics, chromosomal organization and gene mapping, somatic cell mutants and hybrid cells, oncogenes and cancer genetics, mouse genetics, targeted mutagenesis, analysis of simple and complex genetic diseases. Reading material includes reviews and recent original publications. May be concurrently scheduled with course C204B. Mr. Lusic (F, second five weeks)

**C104C. RNA Tumor Viruses (2 units).** (Formerly numbered C104E.) Lecture, three hours. Prerequisite: consent of instructor. Interactions of RNA tumor viruses with differentiating tissues, such as immune system and erythroid development. Concurrently scheduled with course C204C. P/NP grading. Mr. Witte (Sp, five weeks)

**C106. Molecular and Genetic Basis of Bacterial Infections.** Lecture, three hours; discussion, one hour. Prerequisites: course 101, Biology 100A. Recommended: Biology 108. Biochemical and genetic properties of bacteria which afford potential for pathogenicity. Epidemiology and transmission of disease; chemotherapy and drug resistance. Regulation of virulence factors. Concurrently scheduled with course C206. Ms. Miller (W)

**C111. Biology of Prokaryotic Cell.** Lecture, three hours; discussion, one hour. Prerequisites: course 101 and Chemistry 153C, or consent of instructor. Review of current knowledge of structural organization of prokaryotic cells. Emphasis on isolation methods, chemical composition, structure and assembly of subcellular components, including membranes, walls, flagella, ribosomes, and viruses. Concurrently scheduled with course C211. Ms. Wisniewski (Sp)

**C112. Molecular Biology of Bacterial Growth.** Lecture, three hours; discussion, one hour. Prerequisites: course 101, Biology 108, Chemistry 153A, 153L. Analysis of growth, development, and physiological adaptations of bacteria, with emphasis on their molecular and genetic basis. Analysis of complex regulatory mechanisms that underlie cell cycle and other multicomponent cellular systems from perspective of contemporary research techniques. Concurrently scheduled with course C212. Mr. Gunsalus, Mr. Nierlich, Mr. Simons (W)

**C119. Microbial Genetics and Molecular Biology (5 units).** (Formerly numbered 119.) Lecture, three hours; discussion, two hours. Prerequisites: Biology 108 and Chemistry 153A, or consent of instructor. Recommended: Chemistry 153B. Integrated, conceptual analysis of classical and modern molecular genetics of microbes, especially bacteria and their viruses, with emphasis on nature of the gene and control of gene expression. Concurrently scheduled with course C219. Mr. Simons (Sp)

**154. Advanced Molecular Genetics.** (Formerly numbered M154.) Lecture, three hours; discussion, one hour. Prerequisites: Biology 9 and 108, or consent of instructor. Coverage of key papers in molecular genetics of prokaryotes from elucidation of the genetic code to the present, to acquaint students with essential elements of experimental design, analysis of results, and scientific logic. Mr. Miller (W)

**CM156. Human Genetics.** (Same as Biology CM156.) Lecture, three hours; discussion, one hour. Prerequisites: Biology 100A, 108 or equivalent. Strongly recommended: Biology 100B. Application of genetic principles in human populations, with emphasis on cytogenetics, biochemical genetics, population genetics, and family studies. Lectures and readings in the literature, with focus on current questions in the fields of medical and human genetics and methodologies appropriate to answer such questions. Concurrently scheduled with course CM256. Mr. Lusic, Mr. Merriam

**M185A. Immunology.** (Formerly numbered CM185.) (Same as Biology M185A and Microbiology and Immunology M185A.) Lecture, three hours; discussion, one hour. Prerequisites: Biology 9, 100A, 108 or equivalent. Recommended prerequisites or corequisites: Biology 100B, Chemistry 153A, 153L. Introduction to experimental immunobiology and immunochimistry; cellular and molecular aspects of humoral and cellular immune reactions. Mr. Clark, Ms. Morrison (F)

**CM185B. Intermediate Immunology.** (Same as Biology CM185B.) Lecture, three hours; discussion, one hour. Prerequisite: course M185A or equivalent. In-depth exploration of topics introduced in course M185A. Concurrently scheduled with course CM285. Mr. Aguilera, Mr. Kronenberg, Mr. Sercarz (W)

**195. Proseminar (2 units).** Prerequisites: senior standing, consent of instructor. Discussion by small groups of students and instructor on current research literature. Topics vary each year. May be taken only once for credit in the major but may be repeated for University credit. (Sp)

**199. Special Studies in Microbiology and Molecular Genetics (2 to 8 units).** Prerequisites: Chemistry 153A, 153L, and junior or senior standing with minimum 3.0 GPA in the premajor and major, or consent of departmental adviser. Individual research project under direct supervision of departmental faculty member. Copy of report describing the research must be filed with Student Affairs Office by end of term. First four units must be taken P/NP; 12 additional units, four of which may be applied toward the major, may be taken for a letter grade. (F,W,Sp)



**199H. Honors Thesis (4 or 8 units).** Prerequisite: honors program standing. Directed individual research for departmental honors; students must have a faculty sponsor. Three sequential 199H terms required. Progress report must be submitted to faculty sponsor at end of each of the first two terms, with honors thesis submitted at end of final term. Maximum of four units may be applied toward the major, with balance applied toward B.S. degree requirements. (F,W,Sp)

## Graduate Courses

**C204A. Mammalian Cell as a Microorganism (2 units).** Lecture, three hours; discussion, four hours. Prerequisites: Biology 100A, Chemistry 132A, 132B, 153A. Recommended: Chemistry 153B, 153C. Cultured mammalian cell as an experimental system for study of normal regulatory processes and disease mechanisms. Contents include regulation of cell growth in chemically defined medium; establishment, cloning, and characterization of cell lines, cultured cells as model systems in study of normal growth and development, disease mechanisms and cancer. May be concurrently scheduled with course C104A. S/U or letter grading.

Mr. Fox (F, first five weeks)

**C204B. Mammalian Cell Genetics (2 units).** Lecture, two hours; discussion, two hours. Prerequisites: biochemistry, introductory genetics. Topics include cytogenetics, chromosomal organization and gene mapping, somatic cell mutants and hybrid cells, oncogenes and cancer genetics, mouse genetics, targeted mutagenesis, analysis of simple and complex genetic diseases. Reading material includes reviews and recent original publications. May be concurrently scheduled with course C104B. S/U or letter grading.

Mr. Lusic (F, second five weeks)

**C204C. RNA Tumor Viruses (2 units).** (Formerly numbered C204E.) Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Interactions of RNA tumor viruses with differentiating tissues, such as immune system and erythroid development. Concurrently scheduled with course C104C. Includes additional discussion section for graduate students on research literature and methodology. S/U grading.

Mr. Witte (Sp, five weeks)

**C206. Molecular and Genetic Basis of Bacterial Infections.** Lecture, three hours; discussion, one hour. Prerequisites: course 101, Biology 100A. Recommended: Biology 108. Biochemical and genetic properties of bacteria which afford potential for pathogenicity. Epidemiology and transmission of disease; chemotherapy and drug resistance. Regulation of virulence factors. Concurrently scheduled with course C106.

Ms. Miller (W)

**C211. Biology of Prokaryotic Cell.** Lecture, three hours; discussion, one hour. Prerequisites: course 101 and Chemistry 153C, or consent of instructor. Review of current knowledge of structural organization of prokaryotic cells. Emphasis on isolation methods, chemical composition, structure and assembly of subcellular components, including membranes, walls, flagella, ribosomes, and viruses. Concurrently scheduled with course C111. Term paper on research topic selected by each graduate student required.

Ms. Wisniewski (Sp)

**C212. Molecular Biology of Bacterial Growth.** Lecture, three hours; discussion, one hour. Prerequisites: course 101, Biology 108, Chemistry 153A, 153L. Analysis of growth, development, and physiological adaptations of bacteria, with emphasis on their molecular and genetic basis. Analysis of complex regulatory mechanisms that underlie cell cycle and other multicomponent cellular systems from perspective of contemporary research techniques. Concurrently scheduled with course C112.

Mr. Gunsalus, Mr. Nierlich, Mr. Simons (W)

**213. Seminar: Unicellular Development (2 units).** Lecture, 30 minutes; discussion, 90 minutes. Prerequisites: course 101 or equivalent, graduate standing or consent of instructor. Background on each of developmental systems in bacillus, myxobacteria, dictyostelium, and streptococcus. Student analysis and discussion of recent publications in each of these areas. S/U or letter grading.

Ms. Hartzell (Sp)

**C219. Microbial Genetics and Molecular Biology (5 units).** Lecture, three hours; discussion, two hours. Prerequisites: Biology 108 and Chemistry 153A, or consent of instructor. Recommended: Chemistry 153B. Integrated, conceptual analysis of classical and modern molecular genetics of microbes, especially bacteria and their viruses, with emphasis on nature of the gene and control of gene expression. Concurrently scheduled with course C119.

Mr. Simons (Sp)

**221. Seminar: Eukaryotic Transcription (2 units).** (Formerly numbered 221X.) Prerequisite: Biological Chemistry CM253 or equivalent. Reading and discussion of current literature in area of transcription regulation in eukaryotes. S/U grading.

Mr. Berk (W)

**M223. Membrane Research Seminar (2 units).** (Same as Microbiology and Immunology M223.) Prerequisite: consent of instructor. Critical discussions of current literature in membrane research, with emphasis on relationship between structure and function in lipid bilayers. May be repeated for credit.

Ms. Wisniewski (F,W,Sp)

**M226A-M226B. Principles of Microbial Pathogenesis.** (Same as Biology M226A-M226B and Microbiology and Immunology M226A-M226B.) Lecture, one hour; discussion, three hours. Prerequisites: Microbiology and Immunology 202A, 202B, 202C, and 202D, or equivalent, or consent of instructor. Lecture/discussion format designed to analyze basic pathogenesis of infections. Emphasis on molecular and cellular approaches to understand host-microbial interaction. **M226A.** Bacterial and Mycotic Infections. **M226B.** Parasitic and Viral Infections.

Mr. Ahmed (Sp, M226B), Mr. Miller (W, M226A)

**M233. Principles, Practices, and Policies in Biotechnology (2 units).** (Same as Biological Chemistry M233, Biology M233, Chemical Engineering M233, Chemistry M233, Microbiology and Immunology M233, and Radiological Sciences M233.) Prerequisite: graduate standing or consent of instructor. Presentation of technologies, regulatory practices, and policies required for product development and review of current opportunities for new technology development. Topics include fermentation processes, pilot and large-scale bioprocess technologies, scaleup strategies, industrial recombinant DNA processes, hybridomas, protein engineering, peptide mimetics and rational drug design, medical and microscopic imaging, and intellectual property issues. S/U or letter grading.

Mr. Fox, Ms. Morrison (W)

**242. Seminar: Microbial Molecular Genetics (2 units).** (Formerly numbered 256.) Prerequisite: consent of instructor. Student and instructor presentations and critical discussion of newly emerging concepts in prokaryotic and/or eukaryotic molecular genetics. Emphasis on nature of the gene and control of gene expression. May be repeated for credit. S/U or letter grading.

Mr. Simons (F,W)

**M246. Computer Analysis of Genetic Organization.** (Same as Biology M246.) Lecture, two hours; laboratory, six hours. Prerequisite: course C119 or Biology 108 or equivalent. Lectures and laboratory instruction in contemporary procedures for analysis of nucleic acid and protein sequence data with the computer. No prior computer experience necessary; students gain both general and specialized facility with IBM PC and Digital VAX computers.

Mr. Nierlich, Mr. Simpson (F)

**M248. Molecular Genetics.** (Same as Biological Chemistry M248 and Biology M248.) Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Basic concepts in modern genetics, with examples from both eukaryotic and prokaryotic systems. Emphasis on use of genetic techniques for addressing fundamental questions in biochemistry and molecular biology. Topics include mutagenesis, mutant selection, recombination, genetic mapping, complementation, transposable elements, gene organization, genetic regulation, and molecular evolution. (Sp)

**250. Seminar: Microbial Metabolism (2 units).** Prerequisite: consent of instructor. Discussion and student presentations of recent work in areas of genetic regulation and physiology of bacterial metabolism.

Mr. Gunsalus (F,W)

**251. Seminar: Regulation and Differentiation (2 units).** S/U grading.

Mr. Gunsalus, Mr. Nierlich (F)

**M252. Seminar: Microbial Pathogenesis (2 units).** (Formerly numbered 252.) (Same as Microbiology and Immunology M252.) Prerequisite: consent of instructor. Limited to 10 students. Student presentations and critical discussion of current literature on various aspects of microbial pathogenesis. May be repeated for credit. S/U or letter grading.

Mr. Miller, Ms. Miller (F,Sp)

**255. Seminar: Microbial Cell Biology (2 units).** Prerequisite: consent of instructor. Student presentations and critical discussion of current literature on various aspects of prokaryotic and eukaryotic cell biology and morphogenesis. May be repeated for credit. (F)

**CM256. Human Genetics.** (Same as Biology CM256.) Lecture, three hours; discussion, one hour. Prerequisites: Biology 100A, 108 or equivalent. Strongly recommended: Biology 100B. Application of genetic principles in human populations, with emphasis on cytogenetics, biochemical genetics, population genetics, and family studies. Lectures and readings in the literature, with focus on current questions in the fields of medical and human genetics and methodologies appropriate to answer such questions. Concurrently scheduled with course CM156. Independent research project required of graduate students.

Mr. Lusic, Mr. Merriam

**M258A. Molecular Genetic Mechanisms of Immune Response (2 units).** (Same as Biology M258A and Microbiology and Immunology M258A.) Lecture, two hours; discussion, two hours. Prerequisite: course CM185B or CM285 or Microbiology and Immunology 202A or consent of instructor. Reading and discussion of current research articles on immunoglobulin I and II, oncogenes of immune system, T cell antigen receptor, and loci affecting differentiation. S/U or letter grading.

Mr. Kronenberg, Mr. Wall (W, five weeks)

**M258B. Biology of B Cells: Development, Repertoire, and Activation (2 units).** (Same as Biology M258B and Microbiology and Immunology M258B.) Lecture, two hours; discussion, two hours. Prerequisite: course CM185B or CM285 or Microbiology and Immunology 202A or consent of instructor. Reading and discussion of current research articles on B cell development, repertoire, and growth and differentiative regulation. S/U or letter grading.

Mr. Braun, Mr. Stevens (W, five weeks)

**M258C. T Cells (2 units).** (Same as Biology M258C and Microbiology and Immunology M258C.) Lecture, two hours; discussion, two hours. Prerequisites: course CM185B, Microbiology and Immunology 202A. Reading and discussion of current research articles on molecular and cellular aspects of T cell function, including receptors and activation pathways, memory, tolerance, and specialized subjects and their functions.

Mr. Clark (Sp, five weeks)

**M258D. Molecular Interactions in Immune Responses (2 units).** (Same as Biology M258D and Microbiology and Immunology M258D.) Lecture, two hours; discussion, two hours. Prerequisite: course CM185B or CM285 or Microbiology and Immunology 202A or consent of instructor. Reading and discussion of current research articles on immunochemistry of antibodies, antigens, and complement, antigenic recognition, antibody restriction. S/U or letter grading.

Ms. Morrison (F, five weeks)

**M258E. Immunopathology: Immunology of Disease (2 units).** (Same as Biology M258E and Microbiology and Immunology M258E.) Lecture, two hours; discussion, two hours. Prerequisite: course CM185B or CM285 or Microbiology and Immunology 202A or consent of instructor. Reading and discussion of current research articles on tolerance and autoimmunity, autoimmune disease models, immune complex disease, immediate hypersensitivity and its cellular basis, and natural and acquired immune deficiency disease. S/U or letter grading.

Mr. Porter (Sp, five weeks, alternate years)

**M258F. Immune Regulation (2 units).** (Same as Biology M258F and Microbiology and Immunology M258F.) Lecture, two hours; discussion, two hours. Prerequisite: course CM185B or CM285 or Microbiology and Immunology 202A or consent of instructor. Reading and discussion of current research articles on idiotype networks, suppressor T cells, tolerance at T and B cell levels, and *ir* gene control. S/U or letter grading.

Mr. Sercarz (F, five weeks)

**M260. Immunology Forum (2 units).** (Same as Microbiology and Immunology M260.) Prerequisite: course M185A. Broad range of current topics in immunology presented and discussed at advanced frontier level. Continuing UCLA-wide, general graduate-level seminar involving faculty, postdoctoral immunologists, and graduate students from diverse departments. S/U grading.

Mr. Sercarz (F,W,Sp)

**M262A. Seminar: Current Topics in Immunobiology of Cancer (2 units).** (Same as Biology M293A and Microbiology and Immunology M262A.) Prerequisite: consent of instructor. Review of recent literature in immunology, biology, and biochemistry of cancer, with emphasis on fundamental studies involving cell-mediated immunity, humoral response, tumor specific antigens, and new techniques. Discussion of reports on scientific meetings. May be repeated for credit. S/U grading.

Mr. Bonavida (F,W,Sp)

**M262B. Immunology of AIDS (2 units).** (Same as Biology M293B, Epidemiology M214, and Microbiology and Immunology M262B.) Lecture, one hour; discussion, one hour. Prerequisites: courses M258B, M258C, Microbiology and Immunology 202A, 202B, 202C, 202D, or equivalent, consent of instructor. Lecture and student discussion of assigned publications. Topics include specific anti-HIV immune responses, activation of immune system by HIV, and basic mechanisms that underlie HIV-induced immunodeficiency. S/U or letter grading.

Mr. Bonavida, Ms. Giorgi (W)

**M262C. Biological Individuality and Immunity (2 units).** (Same as Biology M293C and Microbiology and Immunology M262C.) Prerequisite: course M258C. Review of current literature in the field of immunogenetics, with emphasis on fundamental studies involving genetic and immunologic principles and techniques. Selected topics discussed and results interpreted; conclusions and experimental methods evaluated.

(Sp, alternate years)

**M262D. Selected Topics in Immunology (2 units).** (Same as Biology M293D and Microbiology and Immunology M262D.) Prerequisite: consent of instructor. Student participation in discussions related to various topics in immunology. May be repeated for credit. S/U or letter grading.

(F,W,Sp)

**M263. Molecular and Cellular Immunology Seminar (2 units).** (Same as Microbiology and Immunology M263.) Prerequisite: consent of instructor. Critical discussions of current literature in T and B cell immunology, with emphasis on molecular mechanisms.

Mr. Kronenberg, Mr. Sercarz (F,W,Sp)

**270. Seminar: Molecular Virology (2 units).** Prerequisites: graduate standing, consent of instructor. Discussion and student presentations of recent work in molecular virology, including viral gene expression and function. S/U grading.

Mr. Berk, Mr. Witte (F,W,Sp)

**280. Seminar: Molecular and Cellular Endocrinology (2 units).** Prerequisites: graduate standing, consent of instructor. Discussion and student presentations of recent work in molecular and cellular endocrinology. S/U grading.

Mr. Fox (Sp)

**CM285. Intermediate Immunology.** (Formerly numbered CM285B.) (Same as Biology CM285 and Microbiology and Immunology M285.) Lecture, three hours; discussion, one hour. Prerequisite: course M185A or equivalent. Recommended corequisite: Chemistry 153B. In-depth exploration of topics introduced in course M185A. Concurrently scheduled with course CM185B.

Mr. Aguilera, Mr. Kronenberg, Mr. Sercarz (W)

**290. Seminar: Molecular Genetics (2 units).** Lecture, one hour; discussion, one hour. Prerequisites: graduate standing, consent of instructor. Discussion and student presentations of recent work in molecular and genetic analysis of cellular gene regulation. S/U grading.

(F,W,Sp)

**296A-296Z. Seminars: Research Topics in Microbiology and Molecular Genetics (1 to 4 units each).** Discussion, three hours. Prerequisite: consent of instructor. Advanced study and analysis of current topics in microbiology and molecular genetics. Discussion of current research and literature in research speciality of faculty member teaching course. S/U grading.

**M298. Seminar: Current Topics in Molecular Biology (2 units).** (Same as Biological Chemistry M298, Biology M298, Chemistry M298, Microbiology and Immunology M298, and Molecular Biology M298.) Prerequisite: consent of instructor and graduate adviser of interdepartmental Molecular Biology Ph.D. Program. Each student conducts or participates in discussions on assigned topics. May be repeated for credit.

(F,W,Sp)

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495. Preparation for Teaching Microbiology in Higher Education (2 units).** Lecture/discussion/laboratory. Prerequisites: graduate standing, consent of instructor. Study of problems and methodologies in teaching microbiology, including workshops, seminars, apprentice teaching, and peer observation. S/U or letter grading.

Mr. Nierlich (W)

**596. Directed Individual Research (2 to 12 units).**

**598. Research for M.A. Thesis (2 to 12 units).**

**599. Research for Ph.D. Dissertation (2 to 12 units).**

Steven G. Clarke, Ph.D. (Biochemistry)  
Asim Dasgupta, Ph.D. (Microbiology and Immunology)

Edward M.F. De Robertis, M.D., Ph.D. (Biological Chemistry)

Richard E. Dickerson, Ph.D. (Biochemistry, Geophysics), Director

Peter A. Edwards, Ph.D. (Biological Chemistry)

David S. Eisenberg, D.Phil. (Physical Chemistry, Molecular Biology; Distinguished Teaching Award)

Frederick A. Eiserling, Ph.D. (Microbiology and Molecular Genetics)

John H. Fessler, Ph.D. (Biology, Molecular Biology)

C. Fred Fox, Ph.D. (Microbiology and Molecular Genetics, Molecular Biology)

Armand J. Fulco, Ph.D. (Biological Chemistry)

Dohn G. Glitz, Ph.D. (Biological Chemistry)

Robert B. Goldberg, Ph.D. (Biology; Luckman Distinguished Teaching Award)

Jay D. Gralla, Ph.D. (Biochemistry)

Michael Grunstein, Ph.D. (Biology, Molecular Biology)

Harvey R. Herschman, Ph.D. (Biological Chemistry)

Ann M. Hirsch, Ph.D. (Biology)

Wayne L. Hubbell, Ph.D. (Ophthalmology, Biochemistry)

H. Ronald Kaback, M.D. (Physiology)

Harumi Kasamatsu, Ph.D. (Biology)

James A. Lake, Ph.D. (Biology, Molecular Biology)

Judith A. Lengyel, Ph.D. (Biology)

Aldons J. Lusis, Ph.D., in Residence (Medicine, Microbiology and Molecular Genetics)

Kevin McEntee, Ph.D. (Biological Chemistry)

David I. Meyer, Ph.D. (Biological Chemistry)

Jeffrey H. Miller, Ph.D. (Microbiology and Molecular Genetics)

Sherie L. Morrison, Ph.D. (Microbiology and Molecular Genetics)

Elizabeth F. Neufeld, Ph.D. (Biological Chemistry)

Donald P. Nierlich, Ph.D. (Microbiology and Molecular Genetics)

Dan S. Ray, Ph.D. (Biology, Molecular Biology)

Emil Reiser, Ph.D. (Biochemistry, Molecular Biology)

Leonard H. Rome, Ph.D. (Biological Chemistry)

Bruce N. Runnegar, Ph.D. (Earth and Space Sciences)

Winston A. Salsler, Ph.D. (Biology, Molecular Biology)

J. William Schopf, Ph.D. (Earth and Space Sciences)

Verne N. Schumaker, Ph.D. (Biochemistry, Molecular Biology; Distinguished Teaching Award)

David S. Sigman, Ph.D. (Biological Chemistry)

Larry Simpson, Ph.D. (Biology)

J. Philip Thornber, Ph.D. (Biology, Molecular Biology)

Allan J. Tobin, Ph.D. (Biology)

Elaine M. Tobin, Ph.D. (Biology)

Joan S. Valentine, Ph.D. (Inorganic Chemistry and Biochemistry)

Randolph Wall, Ph.D. (Microbiology and Immunology)

Richard L. Weis, Ph.D. (Biochemistry)

Charles A. West, Ph.D., Recalled (Biochemistry; Distinguished Teaching Award)

Felix O. Wettstein, Ph.D. (Microbiology and Immunology)

Bernadine J. Wisnieski, Ph.D. (Microbiology and Molecular Genetics)

Owen N. Witte, M.D. (Microbiology and Molecular Genetics)

Daniel E. Atkinson, Ph.D., Emeritus (Biochemistry)

Paul D. Boyer, Ph.D., Emeritus (Biochemistry)

Irving Zabin, Ph.D., Emeritus (Biological Chemistry)

## Associate Professors

Jonathan Braun, M.D., Ph.D. (Pathology and Laboratory Medicine)

Juli F. Feigon, Ph.D. (Biochemistry)

Lawrence T. Feldman, Ph.D. (Microbiology and Immunology)

## Molecular Biology (Interdepartmental)

168 Molecular Biology Institute,  
(310) 825-1018

### Professors

Marcel A. Baluda, Ph.D. (Pathology and Laboratory Medicine)

Arnold J. Berk, M.D. (Microbiology and Molecular Genetics)

Clifford F. Brunk, Ph.D. (Biology)

William R. Clark, Ph.D. (Biology/Immunology)

Judith C. Gasson, Ph.D., *in Residence (Biological Chemistry, Medicine)*  
 Robert P. Gunsalus, Ph.D. (*Microbiology and Molecular Genetics*)  
 Reid C. Johnson, Ph.D. (*Biological Chemistry*)  
 Sabeeha Merchant, Ph.D. (*Biochemistry*)  
 Robert W. Simons, Ph.D. (*Microbiology and Molecular Genetics*)  
 S. Larry Zipursky, Ph.D. (*Biological Chemistry*)

#### Assistant Professors

Renato J. Aguilera, Ph.D. (*Biology*)  
 Utpal Banerjee, Ph.D. (*Biology*)  
 David A. Campbell, Ph.D. (*Microbiology and Immunology*)  
 Michael F. Carey, Ph.D. (*Biological Chemistry*)  
 John J. Colicelli, Ph.D., *in Residence (Biological Chemistry)*  
 Albert J. Courey, Ph.D. (*Biochemistry*)  
 Christopher T. Denny, M.D. (*Pediatrics*)  
 Jeanne M. Erickson, Ph.D. (*Biology*)  
 James W. Gober, Ph.D. (*Biochemistry*)  
 Patricia J. Johnson, Ph.D. (*Microbiology and Immunology*)  
 Mitchell Kronenberg, Ph.D. (*Microbiology and Immunology*)  
 Frank A. Laski, Ph.D. (*Biology*)  
 Jorge R. Mancillas, Ph.D. (*Anatomy and Cell Biology*)  
 Charles R. Marshall, Ph.D. (*Earth and Space Sciences*)  
 Jeffery F. Miller, Ph.D. (*Microbiology and Immunology*)  
 Virginia L. Miller, Ph.D. (*Microbiology and Molecular Genetics*)  
 Diane M. Papazian, Ph.D. (*Physiology*)  
 Gregory S. Payne, Ph.D. (*Biological Chemistry*)  
 Karambir Singh, Ph.D. (*Biology*)  
 Stephen T. Smale, Ph.D. (*Microbiology and Immunology*)  
 Todd O. Yeates, Ph.D. (*Biochemistry*)

## Scope and Objectives

The Ph.D. in Molecular Biology is offered under the supervision of an interdepartmental committee. The Molecular Biology Institute serves this committee and the various departments concerned in support of faculty research and teaching associated with the Ph.D. program. Staff members are from participating departments and from the Molecular Biology Institute. Areas for study include cell biology; developmental biology and neurobiology; DNA replication, repair, and recombination; gene regulation; immunobiology; microbiology/virology; molecular evolution and paleobiology; oncogenes and signal transduction; plant molecular biology; protein structure and function; and structural biology.

## Ph.D. Degree

### Admission

Recommended undergraduate training for the Ph.D. program includes a major in a biological or physical science. Coursework should include mathematics through calculus, one year of general and organic chemistry, one year of physics, two terms of physical chemistry based on the use of calculus, and one year of biology. Undergraduate requirements may be modified for qualified candidates with interests in certain areas. Candidates who enter the program with course deficiencies are expected to fulfill these

early in the graduate program. In addition to University requirements, six terms of Molecular Biology M298 are required.

Only superior students are admitted, and in addition to the application, transcripts, and statement of purpose, three letters of recommendation are required along with Graduate Record Examination (GRE) scores. For more information, contact the Graduate Office, Molecular Biology Program, 168 MBI, UCLA, Los Angeles, CA 90024-1570.

### Course Requirements

The usual program is two regular courses per term in addition to laboratory research, or the equivalent of 12 quarter units of upper division or graduate work. Six terms of Molecular Biology M298 are required.

### Teaching Experience

Teaching experience is encouraged, as it is a skill needed for a future career.

### Qualifying Examinations

Examinations are given in Molecular Biology M298, and four must be passed before advancement to candidacy. The University Oral Qualifying Examination on original research proposed by the candidate independently of the Ph.D. adviser and on a topic distinct and separate from thesis research is held usually during the second year in the program. A "midstream seminar" must be presented during the third year in the program.

### Final Oral Examination

The final oral examination is required of all students for the degree.

## Graduate Course

**M298. Seminar: Current Topics in Molecular Biology (2 units).** (Same as Biological Chemistry M298, Biology M298, Chemistry M298, Microbiology M298, and Microbiology and Immunology M298.) Prerequisite: consent of instructor and graduate adviser of interdepartmental Molecular Biology Ph.D. Program. Each student conducts or participates in discussions on assigned topics. May be repeated for credit. (F,W,Sp)

## Related Courses in Other Departments

The following courses offered by the departments listed are particularly appropriate to the research areas mentioned above. With the approval of the guidance committee or research supervisor, other related courses may be included in the program.

**Biological Chemistry** M221, M248, CM253, M255, M263, M264A-M264B-M264C, M266A-M266B-M266C, M267, M298

**Biology** 228, M230B, M230D, 234, M248, 257A, 294, M298

**Chemistry and Biochemistry** M230B, M230D, CM253, M263, M264A-M264B-M264C, M267, M298

**Microbiology and Immunology** 250, M256, M258A, M258B, M260, M262A, M262B, M263, 264, M298

**Microbiology and Molecular Genetics** 242, M248, 250, 251, M260, M263, 290, M298

# Musicology

2449 Schoenberg Hall, (310) 206-5187.

### Professors

Murray C. Bradshaw, Ph.D., *Chair*  
 Malcolm S. Cole, Ph.D.  
 Frank A. D'Accone, Ph.D.  
 Marie Louise Göllner, Ph.D.  
 Gilbert Reaney, M.A.  
 Robert M. Stevenson, Ph.D., *Recalled*  
 Edwin H. Hanley, Ph.D., *Emeritus*  
 Richard A. Hudson, Ph.D., *Emeritus*  
 W. Thomas Marocco, Ph.D., *Emeritus*  
 Robert U. Nelson, Ph.D., *Emeritus*  
 Robert L. Tusler, Ph.D., *Emeritus*

### Assistant Professors

Raymond Knapp, Ph.D.  
 Harris S. Saunders, Ph.D.

## Scope and Objectives

The Department of Musicology provides students with a broad understanding of the history and literature of the art music of Europe and the Americas and of its place in the development of Western culture. Courses cover virtually every period, style, and genre as well as particular areas of popular music and jazz which have influenced or been influenced by Western art music. Musicology will appeal to undergraduate students with musical backgrounds whose interests and principal career goals lie in areas other than professional performance. The graduate program provides students with a strong foundation that will enable them to pursue careers in teaching and research.

The undergraduate program prepares students for graduate programs in music and related fields and provides them with sufficient background to teach in secondary schools after obtaining the necessary credentials in education. With its focused requirement of study in an area outside music, the program also offers training within the broader context of the humanities. Depending on your particular interests and career goals, you may select courses in the arts, literature, history and society, philosophy, and religion; these may be concentrated within such fields as Afro-American, American Indian, Asian American, Chicana and Chicano, and women's studies. If you wish to participate in performance at UCLA, you are encouraged to do so.

The graduate program offers courses leading to the M.A. and Ph.D. degrees. It is designed to equip students to pursue careers not only in teaching but also in other areas that require bibliographical skills and training in research methodologies. The department provides teaching and research assistantships each year for all qualified students.

## Bachelor of Arts Degree

### Admission

All applicants for admission and change of major must demonstrate proficiency in vocal or instrumental performance at the intermediate level. This requirement may be satisfied by completing a required prerequisite course with a grade of B or better or by passing an individual audition with a departmental faculty committee. If you are a junior transfer student, you are required to pass an audition with the departmental faculty admissions committee before you can be admitted to the program.

### Preparation for the Major

*Required:* Musicology 1A-1B, 26A-26B-26C, 28A-28B-28C, Music 4A, 20A, 20B, 20C, and six units (three terms) of performance organizations selected from Ethnomusicology and Systematic Musicology 91D, 91F, 91H, 91K, 91P or Music 90A, 90B, 90E, 90F, 90G.

### The Major

*Required:* Musicology 126A-126B-126C, four courses from 122, C127A through C127F, 130, 156, 188A through 188F; two courses (each in a different geographical or cultural area) from Ethnomusicology and Systematic Musicology 106A, 106B, 106C, 108A, 108B, M110A, M110B, 136A, 136B, 146, 147, 156A, 156B, 157, 160A, 160B; four courses in one area of concentration (arts, literature, history and society, or philosophy and religion) within which you may focus on a more specialized field such as Afro-American, American Indian, Asian American, Chicana and Chicano, and women's studies. A list of approved courses is available in the department office.

## Master of Arts Degree

### Admission

Applicants for the M.A. must have completed a Bachelor of Arts degree, or the equivalent, in Music or Music History. Other fields of study are accepted if you have the musical training and musicianship necessary to pursue graduate work. Transcripts must show at least 52 quarter units of work outside music, including one college year (or its high school equivalent) of French, German, Italian, or Spanish and an average grade of at least B in the basic areas that normally constitute the undergraduate core curriculum in music (harmony, counterpoint, music history, analysis, and musicianship).

Applicants for the Ph.D. must have completed a Master of Arts degree (or an equivalent degree) in Music. See "Admission" under the Ph.D. degree for more information.

Applicants for both degrees (M.A. and Ph.D.) are also required to (1) take a departmental assessment examination (details are automatically sent after the application has been received), (2) submit a letter describing their

background of study and stating their reasons for wishing to pursue graduate studies in musicology, (3) submit three letters of recommendation from former instructors and/or professionals with whom they have worked, and (4) submit one or two papers dealing with a topic in music history. Ph.D. applicants should submit the M.A. thesis if possible.

No application can be considered until the examination has been taken and all of the above materials have been received. Letters of inquiry and applications must be submitted to Mary Crawford, Graduate Adviser, 2539 Schoenberg Hall Annex, UCLA, Los Angeles, CA 90024-1616.

### Foreign Language Requirement

Reading knowledge of German and a choice of French, Italian, Latin, or Spanish is required.

### Course Requirements

You are required to complete a minimum of nine courses (52 units), including Musicology 200A, 210, 211, three courses from 201A through 201F, two courses from 260A through 260F, and one elective from other 200-series courses within the department or, with approval of the graduate adviser, an upper division or graduate course from outside the department. No more than six units of 500-series courses may be applied toward degree requirements.

Course 598 serves to guide the preparation of the thesis and should normally be taken during your last term in residence.

### Thesis Plan

The thesis is an extended essay on a topic approved by the department.

### Final Examination

The final examination is oral and includes discussion of both the thesis and related matters.

## Ph.D. Degree

### Admission

Applicants for the Ph.D. must have completed a Master of Arts degree (or an equivalent degree) in Music, which normally will have been taken in musicology or music history. Otherwise additional coursework, as prescribed by the department, must be completed. See "Admission" under the M.A. degree for information regarding the departmental assessment examination and other admission requirements.

### Foreign Language Requirement

Reading knowledge of German and two other languages (French, Italian, Latin, Spanish, or another language approved by the department) is required. If you lack this proficiency when you enter the program, you must begin language study during your first year in residence.

## Course Requirements

If you received an M.A. in Musicology from UCLA, you must take a minimum of six courses, including three additional terms of Musicology 201A through 201F, two courses from 250A, 250B, 256, 260A through 260F, and an elective selected with approval of the graduate adviser. If you did not receive the M.A. in Musicology from UCLA, you may be required, in consultation with the graduate adviser, to take other relevant and necessary courses beyond the six specified. Courses 495, 596, 597, and 599 may be taken for credit but may not be applied toward the degree requirements.

## Qualifying Examinations

The five departmental written examinations are spread over a two-week period and must be completed within three weeks. With your guidance committee's recommendation, you may be reexamined on any failed parts twice within a six-month period. When you successfully complete the written examinations, the two-hour departmental oral examination can be scheduled. After passing this oral examination, you may submit your dissertation prospectus and request for a doctoral committee; this committee administers the University Oral Qualifying Examination.

## Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

## Dissertation/Final Oral Examination

The dissertation is an extended monograph supervised by your doctoral committee. A final oral examination, which is a defense of your dissertation, is required by the department.

## Lower Division Courses

**1A-1B. Introduction to Musicology.** Prerequisite: consent of department. Introduction to principles, problems, and methods of musical historiography through examination of selected issues and concepts. Mr. D'Accone, Mr. Saunders (F,W)

**2A-2B. Introduction to the Literature of Music.** (Formerly numbered Music 2A-2B.) Lecture, four hours; laboratory, one hour. Prerequisite: undergraduate standing. Course 2A is not prerequisite to 2B. Designed for nonmusic majors. **2A.** Technical and formal principles of music literature through the mid-18th century. **2B.** Music literature from the mid-18th century to the present. Mr. Cole (F,W)

**6GA-6GB. Graduate Review of Music History and Analysis (2 units each).** (Formerly numbered Music 6GA-6GB.) Prerequisite: graduate standing. Designed to help entering graduate students remedy entrance deficiencies, to be cleared by examination. May be repeated for credit. S/U grading. Mr. Bradshaw

**13. 20th-Century Music of the Western World.** Survey of main trends in 20th-century music, with emphasis on representative works from avant-garde, mainstream, and popular traditions.

Mr. Saunders, Ms. McClary

**26A-26B-26C. History and Analysis of Music I.** (Formerly numbered Music 26A-26B-26C.) Lecture, four hours; laboratory, one hour. Prerequisites: Music 20A, 20B, and 20C, or consent of instructor. Course 26A is prerequisite to 26B, which is prerequisite to 26C. History and literature of music from beginning of the Christian era to 1750, with emphasis on analysis of representative works of each style period. Materials selected illustrate history of style and changing techniques of composition.

Ms. Göllner, Mr. Reaney, Mr. Winter

**28A-28B-28C. Early Music Laboratory (2 units each).** (Formerly numbered 28.) Laboratory, three hours. Corequisite: course 26A or 26B or 26C. Practical laboratory in which students perform music of various periods, as correlated with courses 26A-26B-26C.

Mr. Bradshaw, Ms. Göllner

## Upper Division Courses

**122. Studies in History of Musical Thought.** Prerequisite: consent of instructor. Alternative conceptions of music from early 18th century to about 1800, with emphasis on its nature as a medium of expression to its nature as a primarily formal or abstract art form.

Mr. Cole, Mr. Saunders (W,Sp)

**126A-126B-126C. History and Analysis of Music II.** (Formerly numbered Music 126A-126B-126C.) Lecture, four hours; laboratory, one hour. Prerequisites: courses 26A-26B-26C, Music 20A, 20B, and 20C, or consent of instructor. Course 126A is prerequisite to 126B, which is prerequisite to 126C. History and literature of music from 1750 to the present, with emphasis on analysis of representative works of each style period. Materials selected illustrate history of style and changing techniques of composition.

Mr. Knapp, Mr. Winter

**C127A-C127F. Selected Topics in History of Music.** (Formerly numbered Music C127A-C127F.) Discussion, three hours. Prerequisites to all courses: courses 1A-1B, 26A-26B-26C, Music 20A, 20B, 20C; in addition, 126A is prerequisite to C127D, 126B is prerequisite to C127E, and 126C is prerequisite to C127F. Designed as proseminars for undergraduates in preparation for graduate work. Special aspects of music of each period studied in depth. May be concurrently scheduled with courses C227A-C227F. **C127A.** Middle Ages; **C127B.** Renaissance; **C127C.** Baroque; **C127D.** Classic; **C127E.** Romantic; **C127F.** 20th Century. Prerequisite for nonmajors: consent of instructor.

Mr. Bradshaw, Mr. Reaney

**130. Music of the U.S.** (Formerly numbered Music 130.) Prerequisite: consent of instructor. Survey of art music in the U.S. from Colonial times to the present.

Mr. Stevenson

**133. Bach.** (Formerly numbered Music 133.) Lecture, two hours; laboratory, two hours. Prerequisite: undergraduate standing. Life and works of Johann Sebastian Bach.

Mr. Bradshaw

**134. Beethoven.** (Formerly numbered Music 134.) Lecture, two hours; laboratory, two hours. Prerequisite: undergraduate standing. Life and works of Ludwig van Beethoven.

Mr. Knapp

**135A-135B-135C. History of Opera.** (Formerly numbered Music 135A-135B-135C.) Lecture, four hours; laboratory, one hour. Prerequisite: undergraduate standing. **135A.** Opera of Baroque and Classical Periods; **135B.** Opera of Romantic Period; **135C.** Opera of the 20th Century.

Mr. Saunders

**139. History and Literature of Church Music.** (Formerly numbered Music 139.) Prerequisite: consent of instructor. Study of forms and liturgies of Western church music.

Mr. Cole (F,Sp)

**156. Studies in Musical Genres.** Prerequisite: consent of instructor. Survey of musical genres, with emphasis on analysis of structural organization.

Mr. Cole, Mr. D'Accone (Sp)

**188A-188F. The Master Composer.** (Formerly numbered Music 188A-188F.) Lecture, three hours; laboratory, one hour. Prerequisite: consent of instructor. Survey of works of an outstanding composer in Western art music, considered within context of his age.

**188A.** Middle Ages; **188B.** Renaissance; **188C.** Baroque; **188D.** Classic; **188E.** Romantic; **188F.** 20th Century.

Mr. Stevenson

**189. The Symphony.** (Formerly numbered Music 189.) Lecture, three hours; laboratory, one hour. Prerequisite: undergraduate standing. Survey of symphonic literature from Haydn through the 20th century.

Mr. Bradshaw (W)

**199. Special Studies in Musicology (2 or 4 units).** (Formerly numbered Music 199.) Prerequisites: senior standing, 3.0 GPA, consent of instructor and department chair. Individual studies in musicology resulting in a research project. May be repeated for a maximum of eight units.

## Graduate Courses

**200A. Research Methods and Bibliography (6 units).** (Formerly numbered Music 200A.) Lecture, three hours. Prerequisite: graduate standing in musicology. Survey of general bibliographic material in music.

Mr. Cole, Mr. Saunders

**201A-201F. Current Research Problems in Historical Musicology (6 units each).** (Formerly numbered Music 201A-201F.) Discussion, three hours. Prerequisite: graduate standing in musicology. Investigation at graduate level of central questions and problems in history of Western music designed to give beginning graduate students a unified background for remainder of their studies and to employ their developing skills in research and bibliography. **201A.** Medieval; **201B.** Renaissance; **201C.** Baroque; **201D.** Classic; **201E.** Romantic; **201F.** 20th Century.

Mr. Cole, Mr. Knapp

**202. Selected Topics in History of Western Music (4 or 6 units).** Lecture, three hours. Prerequisite: course 200A or consent of instructor. Designed for graduate students in areas other than musicology who are preparing for qualifying examinations. Systematic review of major stylistic trends in history of Western music from medieval times to the present through formal analysis and readings in contemporary and modern theoretical writings. May be repeated for a maximum of 12 units.

Mr. Bradshaw, Mr. Cole

**210. Medieval Notation (6 units).** (Formerly numbered Music 210.) Lecture, three hours. Prerequisite: consent of instructor. Vocal and instrumental notation; paleography of the period.

Mr. D'Accone, Ms. Göllner

**211. Renaissance Notation (6 units).** (Formerly numbered Music 211.) Lecture, three hours. Prerequisite: consent of instructor. Vocal and instrumental notation; paleography of the period.

Mr. D'Accone

**C227A-C227F. Selected Topics in History of Music.** (Formerly numbered Music C227A-C227F.) Lecture, three hours. Prerequisite: graduate standing. Special aspects of music of each period studied in depth. Each course may be repeated once for credit. May be concurrently scheduled with courses C127A-C127F. Additional assignments, as well as evidence of greater depth of study, required of graduate students. **C227A.** Middle Ages; **C227B.** Renaissance; **C227C.** Baroque; **C227D.** Classic; **C227E.** Romantic; **C227F.** 20th Century. Prerequisite for nonmajors: consent of instructor.

Mr. Bradshaw, Mr. Reaney

**250A-250B. Seminars: History of Music Theory (6 units each).** (Formerly numbered Music 250A-250B.) Lecture, three hours. Prerequisite: course 200A. Course 250A is not prerequisite to 250B. **250A.** Investigation of principal theoretical writings concerning music from antiquity through Zarlino. **250B.** Investigation of principal theoretical writings concerning music from Rameau to the present.

Ms. Göllner, Mr. Reaney

**256. Seminar: Musical Form (6 units).** (Formerly numbered Music 256.) Lecture, three hours. Prerequisites: courses 126A-126B-126C. Analysis of structural organizations in music. Specific topics vary from year to year.

Mr. Cole, Mr. D'Accone

**257. Seminar: Music of the U.S. and Canada.** (Formerly numbered Music 257.) Discussion, three hours. Prerequisite: course 130. Examination of principal figures and trends in North American music since the 18th century. Topics vary from year to year.

Mr. Cole, Mr. Stevenson

**260A-260F. Seminars: Historical Musicology (6 units each).** (Formerly numbered Music 260A-260F.) Lecture, three hours. Prerequisites: courses 200A, 201A-201B-201C, and 210 or 211 (either may be taken concurrently). Specific topics vary from year to year. May be repeated for credit. **260A.** Medieval; **260B.** Renaissance; **260C.** Baroque; **260D.** Classic; **260E.** Romantic; **260F.** 20th Century.

Mr. Bradshaw, Mr. Reaney

**261A-261F. Problems in Performance Practices.** Lecture, three hours. Prerequisites: graduate standing, consent of instructor. Investigation of primary source readings in performance practices as related to the period; analytical reports and practical applications in class demonstrations. May be repeated for credit.

Mr. Bradshaw, Mr. Cole

**269. Seminar: History of European Instruments.** (Formerly numbered Music 269.) Discussion, three hours. Investigation of origins and development of principal families of instruments used in European music since the Middle Ages. Topics vary from year to year.

Ms. Göllner, Mr. Stevenson

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495. Introductory Practicum for Teaching Apprentices in Musicology (2 units).** Eight weekly two-hour sessions, plus intensive training session during Fall Quarter registration week. Prerequisite: appointment as teaching apprentice in Music or Musicology Department. Required of all new teaching apprentices. Special course dealing with problems and practices of teaching music at college level. May not be applied toward degree requirements. S/U grading.

**596. Directed Individual Studies in Musicology (2, 4, or 6 units).** Prerequisites: graduate standing, consent of instructor. S/U grading.

**597. Preparation for M.A. Comprehensive Examination or Ph.D. Qualifying Examinations (2 or 4 units).** Prerequisites: graduate standing, completion of all M.A. or Ph.D. course and language requirements. S/U grading.

**598. Guidance of M.A. Thesis (4, 8, or 12 units).** Prerequisites: graduate standing, completion of all M.A. degree requirements (except thesis). S/U grading.

**599. Guidance of Ph.D. Dissertation (4, 8, or 12 units).** Prerequisites: graduate standing, advancement to Ph.D. candidacy. May be repeated for credit. S/U grading.

## Near Eastern Languages and Cultures

376 Kinsey Hall, (310) 825-4165

### Professors

Arnold J. Band, Ph.D. (*Hebrew; Distinguished Teaching Award*)  
 Andras Bodrogligeti, Ph.D. (*Turkic, Iranian*)  
 Giorgio Buccellati, Ph.D. (*Ancient Near East, History*)  
 Elizabeth Carter, Ph.D. (*Near Eastern Archaeology*)  
 Herbert A. Davidson, Ph.D. (*Hebrew*)  
 Lev Hakak, Ph.D. (*Hebrew*)  
 Antonio Loprieno, Dr.phil.habil. (*Egyptology*), Chair  
 Ismail Poonawala, Ph.D. (*Arabic*)  
 Yona Sabar, Ph.D. (*Hebrew*)  
 Hanns-Peter Schmidt, Ph.D. (*Indo-Iranian*)  
 Amin Banani, Ph.D., *Emeritus*  
 Seeger A. Bonebakker, Ph.D., *Emeritus*  
 Wolf Leslau, Docteur ès Lettres, *Emeritus*  
 Moshe Perlmann, Ph.D., *Emeritus*  
 Avedis K. Sanjian, Ph.D., *Emeritus (Narekatsi Professor Emeritus of Armenian Studies)*  
 Stanislav Segert, Ph.D., *Emeritus*

### Associate Professor

Thomas Penchoen, Ph.D. (*Berber, Arabic*)

### Assistant Professors

Daniel C. Polz, Ph.D. (*Egyptian Archaeology and History*)  
 Hossein Ziai, Ph.D. (*Iranian and Islamic Studies*)

### Lecturers

Nancy Ezer, Ph.D. (*Hebrew*)  
 Michael Fishbein, Ph.D. (*Arabic*)  
 Latife Hagigi, M.A. (*Iranian*)  
 Ralph Jaeckel, Ph.D. (*Turkic*)  
 Thomas Ritter, Dr.phil. (*Egyptology*)

## Scope and Objectives

The mission of the department is the discovery, interpretation, dissemination, and preservation of human values created over a period of five or more thousand years in an area which was the cradle of all civilization.

The department offers instruction in the major modern and ancient languages of the Near East: Akkadian, ancient Egyptian, Arabic, Armenian, Berber, Coptic, Hebrew, Persian, and Turkic. To meet increasing demands for a knowledge of this area and its past and present, it treats each language in a wide perspective — as a means of communication, as a vehicle of a cultural heritage, as a research tool for the area, and as an object of research itself.

Undergraduate majors may be taken in ancient Near Eastern civilizations, Arabic, Hebrew, Iranian studies, and Jewish studies. Master's and Ph.D. programs are offered in ancient Near Eastern civilizations, Arabic, Armenian, Hebrew, Iranian, Semitics, and Turkic.

Courses in the department prepare students for careers in government, foreign trade, teaching abroad, journalism abroad, archaeology, and further academic work involving the area.

## Undergraduate Study

The department offers the Bachelor of Arts degree in five fields: (1) Ancient Near Eastern Civilizations, (2) Arabic, (3) Hebrew, (4) Iranian Studies, and (5) Jewish Studies. In each of these fields you must meet the prerequisites and take the courses prescribed. Your adviser assists in selecting a plan of study developed around your interests.

You may combine your major with one in another department (double major) to enhance your educational opportunities. Due to the number of additional courses required, you are advised to consider this option early in your academic career and in consultation with program advisers in both majors.

## Bachelor of Arts in Ancient Near Eastern Civilizations

There are four options for a major in ancient Near Eastern civilizations: (1) Mesopotamia, (2) Egypt, (3) Syria/Palestine, and (4) biblical studies.

### Preparation for the Major

Prerequisites for options 1 and 2 are German 1 and 2; prerequisites for options 3 and 4 are Greek 1, 2, Hebrew 1A-1B-1C, 102A-102B-102C. Majors in all four fields are expected to continue their study of German or Greek beyond the prerequisite levels.

### The Major

Majors in all four options are required to take 14 courses selected in consultation with the program adviser.

Majors selecting options 1, 2, and 3 are required to take four language courses as follows: *option 1* — Semitics 140A-140B, 141, 142; *option 2* — Ancient Near East 120A-120B-120C, 121A; *option 3* — Semitics 130 and three terms of Hebrew 120. The remaining 10 courses for all three options are to be selected from the following: three literature courses from Ancient Near East 150A, 150B, 150C, Jewish Studies M150A; three courses in history and religion from Ancient Near East M104A, M104B, M105, 130, 170, History M191A, 193D, M203A, Iranian 169, 170; three courses in archaeology and art from Ancient Near East 160A, 160B, 161A, 161B, 161C, 162, Art History 101A, 101B; one course in research methodology (such as Anthropology 115R, M116Q, or Linguistics 120A, 120B, or English 140A) taken preferably in another department with the consent of the adviser.

Majors selecting option 4 are required to take 14 courses as follows: three terms of Hebrew 120; Ancient Near East 150C, 162, 170; English 108B or History 194A; Greek 130; Jewish Studies M150A; History M191A; Semitics 130. The remaining three courses may be selected from Ancient Near East M104A, M104B, M105, 130, 150A, 150B, 160A, 160B, Art History 101A, 101B, 105A, Classics 168, Greek 131, History 193D, 194B, Iranian 169, 170, Latin 120.

## Bachelor of Arts in Arabic

Students majoring in Arabic may combine the major with the interdepartmental specialization in business and administration to enhance their career opportunities. Due to the number of additional courses required, you are advised to consider this option early in your academic career.

### Preparation for the Major

*Required:* Arabic 1A-1B-1C, 102A-102B-102C, 150A-150B.

### The Major

*Required:* Fifteen courses, including Arabic 103A-103B-103C and History 107A or Islamics 110; five courses from Arabic 120, 130, 132, 141; three courses from Arabic 111A, 111B, 111C, 112A, 112B, 112C, 114A, 114B, 114C; three courses from Art History 104A, Geography 187, History 106A, 106B, 106C, 107B, 108A, 108B, Political Science 132A, 132B, 164, 165.

## Bachelor of Arts in Hebrew

### Preparation for the Major

*Required:* Hebrew 1A-1B-1C, 102A-102B-102C, Jewish Studies M150A-150B, or equivalent.

### The Major

*Required:* Sixteen courses, including Hebrew 103A-103B-103C; three terms of Hebrew 120 and/or 125; two courses from Hebrew 130, 135; two courses from Hebrew 140, 160; Hebrew 190A-190B; two additional courses in Hebrew or Aramaic to be approved by the adviser; two courses from History M191A, M191B, M192A, M192B.

## Bachelor of Arts in Iranian Studies

Students majoring in Iranian studies may combine the major with specialization in other fields to enhance their career opportunities. Due to the number of additional courses required, you are advised to consider this option early in your academic career.

### Preparation for the Major

*Required:* Iranian 1A-1B-1C or equivalent, 150A-150B.

### The Major

*Required:* Sixteen courses, including Iranian 102A-102B-102C, 103A-103B-103C, 140, 141, 142, 180A-180B; five courses from Ancient Near East 163A, 163B, Arabic 1A, 1B, 1C, Art History 104A, 104B, C104C, Ethnomusicology and Systematic Musicology 20B, History 106A, 106B, 106C, 110B, Iranian 120, 169, 170, 190A, 190B, Political Science 164.

## Bachelor of Arts in Jewish Studies

### Preparation for the Major

*Required:* Hebrew 1A-1B-1C, History M191A-M191B, or equivalent.

### The Major

*Required:* Sixteen courses, including Hebrew 102A-102B-102C, 103A-103B-103C, 120 or 125, Jewish Studies M150A-150B, 151A-151B, 199, and four other upper division courses. At least two of the four must be courses in the areas of Hebrew, Jewish history, or Yiddish. The remaining two may be selected either from those areas or from courses with Jewish content given in other departments and approved by the adviser.

## Master of Arts Degree

### Admission

In addition to the regular University requirements, a bachelor's degree or its equivalent in the language area selected for the degree, the Graduate Record Examination (GRE) General Test, and three letters of recommendation are required. The GRE must be taken within 24 months prior to receipt of your admission application by the department. As a rule, you are not admitted if your grade-point average is below 3.25 or if your GRE score is below 1,600. Prospective students may write to the Department of Near Eastern Languages and Cultures, 376 Kinsey Hall, UCLA, Los Angeles, CA 90024-1511.

You are assigned an adviser after being admitted. Subsequently, an examining committee is established to administer the comprehensive examination.

### Major Fields or Subdisciplines

Ancient Near Eastern civilizations, Arabic, Armenian, Hebrew, Iranian, Semitics, Turkic.

You may concentrate on either language or literature in your selected field but are required to do work in both. In the field of ancient Near Eastern civilizations, the department also offers an archaeology emphasis.

### Foreign Language Requirement

You are required to pass an examination in one major modern European language other than English by the beginning of your fourth term in residence. The choice of the language is determined in consultation with your adviser. You may satisfy this requirement by one of the following methods: (1) Graduate School Foreign Language Test (GSFLT) with a minimum score of 550, (2) departmentally administered examination, (3) two years of language instruction at a UC campus, with grades of B or better. It is strongly recommended that if you intend to continue toward a Ph.D. degree, you acquire knowledge of a second major European language other

than English while still a candidate for the M.A. degree.

### Course Requirements

A minimum of nine upper division and graduate courses is required, at least six of which must be at the graduate level. All candidates are required to take one term of Near Eastern Languages 200.

In general, if you select either the language, literature, or archaeology option, you are required to study two Near Eastern languages, one of which is considered the major language. Students in Semitics or in Old Iranian study three languages.

In ancient Near Eastern civilizations, you may select as your major language any of the following: ancient Egyptian (including Coptic), Akkadian, Aramaic (including Syriac), Hebrew (with Ugaritic and Phoenician), or Old Persian. For your second language, you may select any of the above or Hittite or Sumerian.

Students in Hebrew must select Hebrew and another Semitic language. In Turkic, you may select either two Turkic languages or Turkish and a second culturally related language. In Arabic, Armenian, and Iranian (modern), you select a major language and a second culturally related language.

Students in Semitics are required to study three Near Eastern languages, at least two of which should be Semitic (the third may be Hittite or Sumerian). In Old Iranian, you study Persian, Sanskrit, and Old and Middle Iranian.

Twelve units of course 596 may be applied toward the total course requirement; eight units may be applied toward the minimum graduate course requirement.

### Comprehensive Examination Plan

In general, you are required to take written comprehensive final examinations in your major and minor languages, as well as in the history and literature of your major field. Further details are available in the departmental *Guide to Graduate Studies*.

## Ph.D. Degree

### Admission

In addition to the regular University requirements, an M.A. or equivalent in your field, the Graduate Record Examination (GRE) General Test, and three letters of recommendation are required. The GRE must be taken within 24 months prior to receipt of your admission application by the department. As a rule, you are not admitted if your grade-point average is below 3.25 or if your GRE score is below 1,600. Prospective students may write to the Department of Near Eastern Languages and Cultures, 376 Kinsey Hall, UCLA, Los Angeles, CA 90024-1511.

The M.A. program need not have been completed at UCLA. You are assigned an adviser

after being admitted. Subsequently, an examining committee is established to administer the qualifying examinations.

### Major Fields or Subdisciplines

Ancient Near Eastern civilizations, Arabic, Armenian, Hebrew, Iranian, Semitics, Turkic.

You may concentrate on either language or literature in your selected field but are required to do work in both. In the field of ancient Near Eastern civilizations, the department also offers an archaeology emphasis.

### Foreign Language Requirement

Two modern major European languages other than English are required. The choice of languages must be approved by the adviser, who may also require additional language skills in modern and/or ancient languages if such skills are needed for scholarly work in the area of your interests.

The requirement is fulfilled by one of the following methods: (1) Graduate School Foreign Language Test (GSFLT) with a minimum score of 550, (2) departmentally administered examination, (3) two years of language instruction at a UC campus, with grades of B or better.

You are expected to pass one of the two required European languages at the beginning of your first term in residence and the second language no later than the beginning of your fourth term.

### Course Requirements

If you select the language emphasis for the Ph.D., you are required to add a third Near Eastern language to the two that are required for the M.A. (for language options, see course requirements for the M.A. above). You must achieve high competence in two of your languages and familiarize yourself with the cultural backgrounds of each of the languages selected. You are also expected to take the equivalent of one year of general linguistics. Students in Semitics or in Old Iranian study three languages.

If you select the literature option, you are required to achieve high competence in two Near Eastern languages and their literatures (for language options, see course requirements for the M.A. above). You are also required to familiarize yourself, through appropriate coursework, with the history of your cultural area, and the methods of literary research and the history of literary criticism.

If you select the archaeology emphasis in the ancient Near Eastern civilizations specialization, you are required to achieve high competence in two ancient Near Eastern languages (for options, see course requirements for the M.A. above) and must be well-versed both in the history of the cultural area and in archaeological methodologies.

Further details regarding the choice of languages and examination requirements are

available in the departmental *Guide to Graduate Study*.

### Qualifying Examinations

You must pass the written qualifying examinations before your doctoral committee is formed.

Candidates in languages are examined in three Near Eastern languages and the literary and historical background of at least two of them. Candidates in literature are examined in the literatures written in two languages within the cultural area of concentration and the historical and cultural background of these languages, with emphasis on one of them. Candidates specializing in the archaeology of the ancient Near East are examined in two ancient languages and the history and archaeology of the ancient Near East.

When you have passed the written examinations, your doctoral committee administers the University Oral Qualifying Examination. Passing this examination allows you to advance to candidacy and begin work on your dissertation.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Final Oral Examination

The department does not require an oral defense of the dissertation except when deemed necessary by the doctoral committee.

## Ancient Near East

(Akkadian, Aramaic, Phoenician, and Ugaritic are listed under Semitics.)

### Upper Division Courses

**M104A-M104B. Ancient Egyptian Civilization.** (Same as History M104A-M104B.) Lecture, three hours. Course M104A is not prerequisite to M104B. Political and cultural institutions of ancient Egypt and ideas on which they were based. **M104A.** Chronological discussion of Prehistory, the Old and Middle Kingdom. **M104B.** The New Kingdom and the Late period until 332 B.C. Mr. Loprieno (alternate years)

**M105. History of Ancient Mesopotamia and Syria.** (Same as History M105.) Lecture, three hours. Political and cultural development of the "Fertile Crescent," including Palestine, from the Neolithic to the Achaemenid period. Mr. Buccellati

**120A-120B-120C. Elementary Ancient Egyptian.** Lecture, three hours; laboratory, two hours. Prerequisite: consent of instructor. Grammar and texts. Mr. Loprieno

**121A-121B-121C. Intermediate Ancient Egyptian.** Lecture, three hours. Prerequisites: courses 120A-120B-120C. Readings in ancient Egyptian literature. Mr. Loprieno

**123A-123B. Coptic.** Lecture, three hours. Prerequisite: consent of instructor. Introduction to Coptic grammar and reading of Coptic texts. Mr. Loprieno

**124. Middle Egyptian Technical Literature.** Prerequisite: course 121C. Reading of Middle Egyptian technical literature in hieroglyphic transcription. Medical, veterinary, mathematical, and astronomical texts included. Mr. Loprieno

**130. Ancient Egyptian Religion.** Lecture, three hours. Introductory survey of various ancient Egyptian religious beliefs and practices, their origin, and development. Discussions of religiopolitical institutions such as divine kingship and pious foundations. Mr. Loprieno

**140A-140B. Elementary Sumerian.** Lecture, three hours. Prerequisites: Semitics 140A-140B. Elementary grammar and reading of royal inscriptions, letters, and administrative texts from the Ur III period.

**145. Sumerian Literary Texts.** Lecture, three hours. Prerequisites: courses 140A-140B or consent of instructor. Reading and interpretation of selected Sumerian literary texts.

**150A-150B-150C. Survey of Ancient Near Eastern Literatures in English.** Lecture, three hours. Each course may be taken independently for credit. **150A.** Mesopotamia; **150B.** Egypt; **150C.** Syria and Palestine. Mr. Buccellati, Mr. Loprieno

**160A-160B. Introduction to Near Eastern Archaeology.** Lecture, three hours. Terminology, geography, principles, strategy of research, bibliography, and general survey of Near Eastern archaeology. Ms. Carter (alternate years)

**161A-161B-161C. Archaeology of Mesopotamia.** Prerequisite: consent of instructor. Survey of main archaeological periods in Mesopotamia, with special emphasis on late prehistoric and early historical periods and with reference to neighboring cultural areas. Each course may be taken independently for credit. Ms. Carter

**162. Archaeology of Palestine.** Lecture, three hours. Survey of archaeology of Palestine and the Sinai Peninsula from the Bronze Age to destruction of Jerusalem in A.D. 70, with emphasis on geographic setting and relationships to other cultures of the Near East. (Alternate years)

**163A-163B. Archaeology of Iran.** Lecture, three hours. Designed to introduce students to Iranian archaeology from prehistoric through Achaemenid times.

**163A.** Prehistoric and protohistoric phases of Iranian archaeology. **163B.** Archaeology of Elam, Iron Age, and Achaemenid Empire. Ms. Carter

**164A-164B-164C. Archaeology of Historic Periods in Mesopotamia.** Prerequisites: courses M105 and 161A-161B-161C, or consent of instructor. Survey of main archaeological periods in Mesopotamia, with special emphasis on historic periods and with reference to neighboring cultural areas. Each course may be taken independently for credit. Ms. Carter

**170. Introduction to Biblical Studies.** Lecture, two hours. Knowledge of original languages not required. The Bible (Old and New Testaments) as a book. Canon, text, and versions. Linguistic, literary, historical, and religious approaches to Bible study. Survey of history of interpretation from antiquity to the present.

**M194. The Hero in the Bible and the Ancient Near East.** (Formerly numbered 198A.) (Same as Folklore M185.) Lecture, three hours. Investigation of concepts of the hero/heroine in literatures of ancient Mesopotamia, Canaan, and Israel. Texts include epics of Gilgamesh and Aghat, Hebrew Bible, and New Testament. All texts read in translation.

**199. Special Studies in the Ancient Near East (2 to 8 units).** Prerequisite: consent of instructor.

### Graduate Courses

**210. Late Egyptian.** Lecture, three hours. Prerequisites: courses 121A-121B-121C, consent of instructor. Late Egyptian grammar and reading of both hieroglyphic and hieratic texts. May be repeated for credit. Mr. Loprieno

**211A-211B. Egyptian Texts of the Greco-Roman Period.** Lecture, three hours. Prerequisite: course 121C. Introduction to grammar and orthography of hieroglyphic texts from Greco-Roman temples. Text readings and translation of various textual types. Mr. Loprieno

**220. Seminar: Ancient Egypt.** Seminar, three hours. Prerequisite: consent of instructor. May be repeated for credit. Mr. Loprieno

**221A-221B. Demotic.** Prerequisite: course 121C. Introduction to Demotic grammar and orthography. Reading of texts from various genres. Mr. Loprieno

**240A-240B-240C. Seminars: Sumerian Language and Literature.** Lecture, two hours. Prerequisite: consent of instructor. Readings of texts from various Sumerian periods and literary genres; selected problems in linguistic or stylistic analysis and literary history.

**M250. Seminar: Ancient Mesopotamia.** (Same as History M207.) Seminar, three hours. Selected topics on political, social, and intellectual history of ancient Mesopotamia. May be repeated for credit. Mr. Buccellati

**250X. Seminar: Ancient Mesopotamia (1 unit).** Prerequisite: consent of instructor. Selected topics on political, social, and intellectual history of ancient Mesopotamia. Course for students who participate regularly in class meetings but without the homework required in course M250. May be repeated for credit. S/U grading. Mr. Buccellati

**260. Seminar: Ancient Near Eastern Archaeology.** Lecture, two hours. Prerequisite: consent of instructor. May be repeated for credit.

**261. Practical Field Archaeology (2 to 8 units).** Fieldwork, two hours. Prerequisite: consent of instructor. Participation in archaeological excavations or other archaeological research in the Near East under staff supervision. May be repeated. Mr. Buccellati, Ms. Carter

**262. Seminar: Object Archaeology.** Discussion, two hours; laboratory, one hour. Prerequisite: consent of instructor. Selected topics in analysis and interpretation of Near Eastern archaeological finds in museum collections. Students work with objects in Heermanek Collection of Los Angeles County Museum of Art. Ms. Carter

**272. Semitic Background of the New Testament.** Lecture, two hours. Prerequisites: Hebrew 102A-102B-102C, Semitics 130, Greek 1, and 2, or consent of instructor. Study of Semitic elements in the Greek New Testament: traditions transmitted in Aramaic, relations to the Old Testament and to post-Biblical literature, and Palestinian Judaism.

**596. Directed Individual Study (2 to 8 units).** May be repeated for credit.

**597. Examination Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

**599. Ph.D. Dissertation Research and Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

## Related Courses in Other Departments

**Art History 101A.** Egyptian Art and Archaeology  
**History M104A-M104B.** Ancient Egyptian Civilization

**M105.** History of Ancient Mesopotamia and Syria  
**193D.** Religions of the Ancient Near East  
**201A-201U.** Topics in History

## Arabic

### Lower Division Courses

**1A-1B-1C. Elementary Literary Arabic.** Lecture, six hours. Basic grammar and syntax.



## Upper Division Courses

**102A-102B-102C. Intermediate Literary Arabic.** Lecture, four hours; discussion, one hour. Prerequisites: courses 1A-1B-1C or consent of instructor. Grammar and syntax; readings of excerpts from literary texts; composition.

**103A-103B-103C. Advanced Arabic.** Prerequisites: courses 102A-102B-102C or consent of instructor. Review of grammar, composition, conversation, and readings from classical and modern literary texts.

Mr. Poonawala

**111A-111B-111C. Elementary Spoken Egyptian Arabic.** Lecture, three hours. Prerequisites: courses 1A-1B-1C or consent of instructor. Basic grammar and syntax of Egyptian colloquial Arabic.

**112A-112B-112C. Advanced Spoken Egyptian Arabic.** Lecture, three hours. Prerequisites: courses 111A-111B-111C or consent of instructor. Grammar and syntax; excerpts from literary texts using colloquial Arabic.

**113A-113B-113C. Elementary Spoken Levantine Arabic.** Lecture, three hours. Prerequisites: courses 1A-1B-1C or consent of instructor. General introduction to spoken Arabic of Syria, Lebanon, and Palestine. Grammar and syntax, with emphasis on language of everyday conversation.

**114A-114B-114C. Spoken Moroccan Arabic.** Lecture, three hours; laboratory, one hour. Introduction to spoken Arabic dialect of Morocco. Phonology, morphology, and syntax. Emphasis on developing oral skills.

Mr. Penchoen

**120. Islamic Texts.** Prerequisite: course 103C or consent of instructor. Readings from Qur'an, Tafsir, Hadith, Fiqh. May be repeated for credit.

Mr. Poonawala

**130. Classical Arabic Texts.** Prerequisite: course 103C or consent of instructor. Readings from medieval literary texts, with grammatical and syntactical analysis. May be repeated for credit.

**132. Philosophical and Kalam Texts.** Lecture, three hours. Prerequisite: course 120 or consent of instructor. Readings in medieval and Kalam texts. May be repeated for credit.

Mr. Davidson

**141. Modern Arabic Literature.** Prerequisite: course 103C or consent of instructor. Conducted in Arabic. Readings in selected texts representing important trends in Arabic literature of the 19th and 20th centuries. May be repeated for credit.

**150A-150B. Survey of Arabic Literature in English.** Lecture, three hours. Knowledge of Arabic not required. Survey of Arabic literature from its beginning to the present, with selected readings in translation. Each course may be taken independently for credit.

(F,W)

**151. Survey of Modern Arabic Literature in English.** Lecture, three hours. Readings of selected texts covering basic literary trends from middle of the last century to the present.

**180. Linguistic Analysis of Arabic.** Prerequisite: course 102C or consent of instructor. Linguistic description of Arabic in both its modern standard and dialect forms. Introduction to linguistic analysis of Arabic phonology, morphology, and syntax and to linguists' approaches to specific problems posed by Arabic grammar and dialectology.

Mr. Penchoen (W)

**199. Special Studies in Arabic (2 to 8 units).** Prerequisite: consent of instructor.

## Graduate Courses

**220. Seminar: Islamic Texts.** Lecture, three hours. Prerequisite: consent of instructor. Doctrines and hermeneutics of various schools of thought in Islam, with selected readings from major works. May be repeated for a maximum of 24 units.

Mr. Poonawala (F,W,Sp, alternate years)

**230. Medieval Literary Texts.** Lecture, two hours. Prerequisite: consent of instructor. Readings in Arabic prose and poetry, survey of prosody. May be repeated for a maximum of 24 units.

(F,W,Sp)

**240. Seminar: Arab Historians and Geographers.** Lecture, three hours. Prerequisite: consent of instructor. Selected readings from works of major historians, geographers, and travelers. May be repeated for a maximum of 24 units.

Mr. Poonawala (F,W,Sp, alternate years)

**250. Seminar: Arabic Literature.** Lecture, two hours. Prerequisite: consent of instructor. Selected topics from Arabic literature. Readings of texts from manuscript. May be repeated for a maximum of 24 units.

(F,W,Sp)

**596. Directed Individual Study (2 to 8 units).** May be repeated for credit.

**597. Examination Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

**599. Ph.D. Dissertation Research and Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

## Related Courses in Another Department

**History 106A-106B-106C.** Survey of the Middle East from 500 to the Present

**204A-204B.** Seminars: Near and Middle Eastern History

## Armenian

### Upper Division Courses

**101A-101B-101C. Elementary Modern Armenian.** Armenian grammar, conversation, and exercises.

**102A-102B-102C. Intermediate Modern Armenian.** Prerequisites: courses 101A-101B-101C or equivalent. Reading of selected texts, composition, and conversation.

**103. Advanced Modern Armenian.** Lecture, three hours. Prerequisites: courses 102A-102B-102C or equivalent. Readings in advanced modern Armenian texts. May be repeated twice for credit.

**130A-130B. Elementary Classical Armenian.** Lecture, three hours. Grammar of classical Armenian language and readings of selected texts.

**131A-131B. Intermediate Classical Armenian.** Lecture, three hours. Prerequisites: courses 130A-130B or equivalent. Reading of selected texts.

**132A-132B. Advanced Classical Armenian.** Lecture, three hours. Prerequisites: courses 131A-131B or equivalent. Readings in advanced classical Armenian texts.

**150A-150B. Survey of Armenian Literature in English.** Lecture, three hours. Knowledge of Armenian not required. Each course may be taken independently for credit.

**160A-160B. Armenian Literature of the 19th and 20th Centuries.** Lecture, three hours. Prerequisites: courses 102A-102B-102C or equivalent. Reading of texts and discussion of various genres of modern Armenian literature within context of the Armenian cultural renaissance.

**199. Special Studies in Armenian Language and Literature (2 to 8 units).** Prerequisite: consent of instructor.

### Graduate Courses

**207. Armenian Intellectual History.** Lecture, three hours. Intellectual and cultural trends reflected in Armenian literature, historiography, religious and philosophical thought.

**210. History of the Armenian Language.** Lecture, three hours. Prerequisite: consent of instructor. Development of the Armenian language in its various stages: classical, middle, and modern.

**220. Armenian Literature of the Golden Age (A.D. 5th Century).** Lecture, three hours. Prerequisites: courses 131A-131B or equivalent. Readings of texts and discussion of literary genres; original works and those translated from Greek and Syriac.

**250A-250B. Seminars: Armenian Literature.** Seminar, three hours. Prerequisite: consent of instructor. Selected topics from various periods of Armenian literature. May be repeated for credit.

**290. Seminar: Armenian Paleography.** Seminar, three hours. Prerequisite: consent of instructor. Discussion of a variety of Armenian scripts and training in use of manuscripts.

**596. Directed Individual Study (2 to 8 units).** May be repeated for credit.

**597. Examination Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

**599. Ph.D. Dissertation Research and Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

## Related Courses in Other Departments

**History 112A-112B-112C.** Armenian History C112D. Introduction to Armenian Oral History

**113. The Caucasus under Russian and Soviet Rule 200S.** Advanced Historiography: Armenia and the Caucasus

**201S.** Topics in History: Armenia and the Caucasus

**211A-211B.** Seminars: Armenian History

**Indo-European Studies M150.** Introduction to Indo-European Linguistics

## Berber

### Upper Division Courses

**101A-101B-101C. Elementary Berber.** Lecture, three hours; laboratory, two hours. Development of oral proficiency and analysis of basic grammatical structure.

Mr. Penchoen (F,W,Sp)

**102A-102B-102C. Advanced Berber.** Prerequisites: courses 101A-101B-101C or consent of instructor. Advanced study of Berber. Regional and stylistic variants in folk literature.

Mr. Penchoen (F,W,Sp)

**130. The Berbers.** Examination of main features of Berber societies and cultures, with particular attention to social structures and institutions on one hand, and to customs, values, and beliefs on other. Presentation of broad framework within which study of particular aspects of Berber cultures may be pursued.

Mr. Penchoen

**199. Special Studies in Berber Languages (2 to 8 units).** Prerequisite: consent of instructor. Studies based on requirements of individual students.

Mr. Penchoen

## Related Courses in Other Departments

**History 109A-109B.** History of North Africa from the Moslem Conquest

**Linguistics 225M.** Linguistic Structures: Berber

## Hebrew

### Lower Division Courses

**1A-1B-1C. Elementary Hebrew.** Lecture, three hours; laboratory, two hours. Structural principles of grammar. Students who have prior knowledge of reading and some vocabulary are advised to take courses 10A-10B-10C. Students with credit for course 10A will not receive credit for 1A; those with credit for course 10B will not receive credit for 1B and/or 1C.

Mr. Sabar (F,W,Sp)

**10A-10B-10C. Accelerated Elementary Hebrew.** Lecture, five hours. Open to students who wish to cover equivalent of two years of college Hebrew in one academic year. Designed for students who have previously studied rudiments of Hebrew. Students with credit for course 1A will not receive credit for 10A; those with credit for course 1B and/or 1C will not receive credit for 10B. Mr. Davidson (F,W,Sp)

**20A-20B. Introduction to Biblical Hebrew.** Lecture, three hours. **20A.** Phonology, morphology, and structure of biblical Hebrew. **20B.** Prerequisite: course 20A. Continuation of course 20A. Readings of biblical prose texts.

## Upper Division Courses

**102A-102B-102C. Intermediate Hebrew.** Lecture, five hours. Prerequisites: courses 1A-1B-1C or equivalent. Amplification of grammar; reading of texts from modern literature. Mr. Sabar (F,W,Sp)

**103A-103B-103C. Advanced Hebrew.** Lecture, three hours. Prerequisites: courses 102A-102B-102C or equivalent. Introduction to modern Hebrew literary texts. Mr. Hakak (F,W,Sp)

**120. Biblical Texts.** Lecture, three hours. Prerequisites: courses 102A-102B-102C or equivalent. Translations and analysis of Old Testament texts, with special attention to texts of primary literary and historical importance. May be repeated for credit.

**125. Hebrew Bible with Medieval Commentaries.** Lecture, three hours. Prerequisite: course 103C. Hebrew Bible with the commentaries of Rashi, Ibn Ezra, and/or Nahmanides. May be repeated for a maximum of 16 units. Mr. Davidson

**130. Rabbinic Texts.** Lecture, three hours. Prerequisites: courses 103A-103B-103C or consent of instructor. Readings in Mishnah, Talmud, and/or Midrash. May be repeated for credit. Mr. Davidson

**135. Medieval Hebrew Texts.** Lecture, three hours. Prerequisites: courses 103A-103B-103C or consent of instructor. Readings in medieval Hebrew prose and poetry. May be repeated for a maximum of 16 units. Mr. Davidson

**140. Modern Hebrew Poetry and Prose.** Lecture, three hours. Prerequisites: courses 103A-103B-103C, consent of instructor. Study of major Hebrew writers of past one hundred years: prose — Mendele, Ahad Ha'am, Agnon, Yizhar; poetry — Bialik, Tchernichovsky, Greenberg, Shlonsky, Alterman, Amichai. May be repeated for credit. Mr. Hakak

**160. Hebrew Essay.** Lecture, three hours. Prerequisites: courses 103A-103B-103C or consent of instructor. Hebrew essay from its rise in Europe in the late 18th century to contemporary Israeli essay. Study of literary, political, philosophical, and scholarly essay. May be repeated for credit. Mr. Hakak

**190A-190B. Survey of Hebrew Grammar.** Lecture, three hours. Prerequisites: courses 102A-102B-102C or consent of instructor. Descriptive and comparative study of Hebrew grammar: phonology and morphology. Topics include development of Hebrew language from biblical times to the present day, its relation to Arabic and other Semitic languages, methods of language expansion in Israeli Hebrew, traditional pronunciation of Hebrew by various Jewish communities, Hebrew contribution to other Jewish languages (Yiddish, Ladino, Judeo-Arabic). Mr. Sabar (W,Sp, alternate years)

**199. Special Studies in Hebrew (2 to 8 units).** Prerequisite: consent of instructor.

## Graduate Courses

**210. History of the Hebrew Language.** Prerequisites: courses 103A-103B-103C or consent of instructor. Development of Hebrew language in its various stages: biblical, Mishnaic, medieval, modern, and Israeli; differences in vocabulary, morphology, syntax, and influence of other languages; problems of language expansion in Israeli Hebrew. Mr. Sabar (Sp, alternate years)

**220. Studies in Hebrew Biblical Literature.** Lecture, three hours. Critical study of Hebrew text in relation to major versions; philological, comparative, literary, and historical study of various biblical books. May be repeated for credit.

**230. Seminar: Medieval Hebrew Literature.** Seminar, three hours. May be repeated for credit. Mr. Davidson (F,W)

**231. Texts in Judeo-Arabic.** Prerequisite: reading knowledge of Hebrew and Arabic. Reading of philosophical texts in Judeo-Arabic. Mr. Davidson

**241. Studies in Modern Hebrew Prose Fiction.** Studies in specific problems and trends in Hebrew prose fiction of the last two centuries. May be repeated for credit. Mr. Band (W,Sp)

**242. Studies in Modern Hebrew Poetry.** Studies in specific problems and trends in Hebrew poetry of the last two centuries. Mr. Band (W,Sp)

**596. Directed Individual Study (2 to 8 units).** May be repeated for credit.

**597. Examination Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

**599. Ph.D. Dissertation Research and Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

## Iranian

### Lower Division Courses

**1A-1B-1C. Elementary Persian.** Lecture, four hours; laboratory, two hours. Mr. Ziai

**10A-10B-10C. Persian Conversation (2 units each).** Lecture, three hours. Prerequisite: consent of instructor. Systematic and structured Persian conversation.

### Upper Division Courses

**102A-102B-102C. Intermediate Persian.** Lecture, three hours; laboratory, three hours. Prerequisites: courses 1A-1B-1C or equivalent. Mr. Ziai

**103A-103B-103C. Advanced Persian.** Lecture, three hours. Prerequisites: courses 102A-102B-102C or equivalent. Mr. Ziai

**111A-111B-111C. Elementary Kurdish.** Lecture, three hours; laboratory, two hours. Prerequisite: consent of instructor. A proficiency-based course in basic grammar of literary Kurdish (Sorani). Graded readings, translation, composition (level one), conversation (levels one and two). Mr. Bodrogligeti

**120. Comparative Study of Six Major Persian Poets.** Lecture, two hours; discussion, one hour. Prerequisite: knowledge of Persian (lectures in Persian, readings in English and Persian). Comparative study of six major Persian poets from the 10th to 14th century who shaped the sense of Persian identity and delineated chief distinguishing characteristics of Persian thought and culture. P/NP or letter grading.

**140. Contemporary Persian Belles Lettres.** Lecture, three hours. Prerequisites: courses 103A-103B-103C or equivalent, consent of instructor. Study of major Persian poets and prose writers of the 20th century: prose — Jamalzadeh, Hedayat, Chubuk, Al Ahmad, Sa'edi, Golestan; poetry — Nima, Shamlu, Farrokhzad, Akhavan. Mr. Banani

**141. Contemporary Persian Analytical Prose.** Lecture, three hours. Prerequisites: courses 102A-102B-102C or equivalent, consent of instructor. Study of selected modern Persian analytical and expository prose texts, with emphasis on social sciences, literary criticism, and history. Mr. Banani

**142. Persian Popular Ethics.** Prerequisites: courses 102A-102B-102C or consent of instructor. Study of major Persian works on popular ethics which have helped shape normative social, cultural, and political values in Iranian civilization. P/NP or letter grading. Mr. Ziai (Sp)

**150A-150B. Survey of Persian Literature in English.** Lecture, three hours. Knowledge of Persian not required. Each course may be taken independently for credit. Mr. Banani

**169. Civilization of Pre-Islamic Iran.** Survey of Iranian culture from the beginning through Sasanian period. Mr. Schmidt

**170. Religion in Ancient Iran.** History of religion in Iran from the beginning to the Mohammedan conquest; Indo-Iranian background, Zoroastrianism, Manichaeism, Mazdakism. Mr. Schmidt

**180A-180B. Iranian Civilization.** Lecture, three hours; discussion, one hour. Cultural and social history of the Iranian world, with emphasis on legacy of Persian language and literature. Letter (majors) or P/NP or letter (nonmajors) grading. Mr. Banani

**190A-190B. Introduction to Modern Iranian Studies.** Lecture, three hours. Prerequisites: courses 1A-1B-1C or equivalent. Survey of Iranian languages. Comparative and historical grammar. Mr. Bodrogligeti

**199. Special Studies in Iranian (2 to 8 units).** Prerequisite: consent of instructor.

## Graduate Courses

**220A-220B. Classical Persian Texts.** Lecture, three hours. Prerequisites: courses 103A-103B-103C or consent of instructor. Study of selected classical Persian texts. Each course may be taken independently for credit. Mr. Banani

**221. Rumi, Mystic Poet of Islam.** Seminar, three hours. Prerequisites: course 220A or 220B or equivalent, consent of instructor. Study of life and works of Rumi in context of interaction of Sufism and poetic creativity. May be repeated twice for credit. Mr. Banani

**M222A-M222B. Vedic.** (Same as Indic M222A-M222B.) Lecture, three hours. Prerequisite: knowledge of Sanskrit equivalent to Indic 110C. Characteristics of Vedic dialect and readings in Rig-Vedic hymns. Only course M222B may be repeated for credit. Mr. Schmidt

**230A-230B. Old Iranian.** Prerequisite: consent of instructor. Studies in grammars and texts of Old Persian and Avestan. Comparative considerations. Only course 230B may be repeated for credit. Mr. Schmidt

**231A-231B. Middle Iranian.** Prerequisite: consent of instructor. Studies in grammars and texts of such Middle Iranian languages as best serve students' needs (e.g., Pahlavi, Sogdian, Sakan). Only course 231B may be repeated for credit. Mr. Schmidt

**250. Seminar: Classical Persian Literature.** Seminar, three hours. Prerequisites: courses 103A-103B-103C and 199, or consent of instructor. May be repeated twice for credit. Mr. Banani

**251. Seminar: Contemporary Persian Literature.** Seminar, three hours. Prerequisites: course 140 or equivalent, consent of instructor. Studies in specific problems and trends in Persian poetry and prose in the 20th century. May be repeated twice for credit. Mr. Banani

**596. Directed Individual Study (2 to 8 units).** May be repeated for credit.

**597. Examination Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

**599. Ph.D. Dissertation Research and Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

## Related Courses in Other Departments

**Art History** 104A. Western Islamic Art  
104B. Eastern Islamic Art

C104C. Problems in Islamic Art

213. Advanced Studies in Islamic Art

**Ethnomusicology and Systematic Musicology** 91L. Music of Persia

**History 9D.** Introduction to Asian Civilizations: History of the Near and Middle East

106A-106B-106C. Survey of the Middle East from 500 to the Present

110A-110B. Iranian History

**Indic (East Asian Languages) 110A.** Elementary Sanskrit

110B. Intermediate Sanskrit

110C. Advanced Sanskrit

**Indo-European Studies 210.** Indo-European Linguistics: *Advanced Course*

280A-280B. Seminars: Indo-European Linguistics

## Islamic

### Upper Division Course

**110. Introduction to Islam.** Lecture, three hours. Genesis of Islam, its doctrines, and practices, with readings from the Qur'an and hadith; schools of law and theology; piety and Sufism; reform and modernism. Mr. Poonawala

### Graduate Courses

**596. Directed Individual Study (2 to 8 units).** May be repeated for credit.

**597. Examination Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

**598. M.A. Thesis Research and Preparation (2 to 8 units).**

**599. Ph.D. Dissertation Research and Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

### Related Courses in Another Department

**History 107A-107B.** Islamic Civilization

## Jewish Studies

### Lower Division Course

**10. Social, Cultural, and Religious Institutions of Judaism.** Judaism's basic beliefs, institutions, and practices. Topics include development of biblical and rabbinic Judaism; concepts of god, sin, repentance, prayer, and the messiah; history of Talmud and synagogue; evolution of folk beliefs and year-cycle and life-cycle practices. (F,Sp)

### Upper Division Courses

**M111E. Ethnic Groups and Their Bibliographies: Jewish History and Culture.** (Same as Library and Information Science M111E.) Basic reference sources on specific topics on Judaica, ranging from biblical studies to the Holocaust to Jewish life in the U.S.

Mr. Stern

**130. Modern Jewish Religious Movements and Their Ideologies.** Lecture, three hours. Introduction to and overview of Jewish religious movements and evolution of their ideologies in the Western world from time of the Enlightenment to the present.

Mr. Ellenson

**140A-140B. American Jewish History.** Lecture, three hours. Examination of social and cultural history of American Jewish community from its inception to the present, with emphasis on integration of successive immigrants and development of institutions. P/NP or letter grading. **140A.** 1654 to 1914; **140B.** 1914 to the Present. (F, 140A; W, 140B)

**141. Modern Anti-Semitism.** Lecture, three hours. Examination of modern anti-Semitism from the 18th century to the present; comparison of modern racist ideologies with premodern theories; case studies (e.g., Dreyfus affair, Beiliss Trail, Holocaust); Jewish reactions to these phenomena.

**142. History and Institutions of State of Israel.** Lecture, three hours. Study of social and cultural development of State of Israel from its pre-state institutional structures to the present, with emphasis on major trends, personalities, and ideologies, and state's position in wider framework of modern Jewish history.

**M143. Introduction to Jewish Folklore.** (Same as Folklore M142.) Nature of Jewish folklore; narrative, folk song, folk art, folk religion, and methods and perspectives used in their analysis.

**M150A-150B. Hebrew Literature in English.** Lecture, three hours. Each course may be taken independently for credit:

**M150A.** Literary Traditions of Ancient Israel: Bible and Apocrypha. (Same as Humanities M101.) Study of literary culture of ancient Israel through examination of principal compositional strategies of the Hebrew Bible and the Apocrypha (read in translation). P/NP or letter grading. Mr. Band (alternate years)

**150B.** Rabbinic and Medieval Literature. Mr. Davidson (alternate years)

**151A-151B. Modern Jewish Literature in English.** Lecture, three hours. Each course may be taken independently for credit:

**151A.** Diaspora Literature. Study of literary responses of Jews to modernity, its challenges and threats. Readings in texts originally written in English or translated from Hebrew, Yiddish, German, Russian, French, and Italian. Analysis of formal aspects of each work. Mr. Band (alternate years)

**151B.** Israeli Literature. Study of translations from Hebrew literature written in Israel and reflecting cardinal facets of Israeli life: social issues, security problems, identity of the state, role of individual. Analysis of formal aspects of each work. Mr. Hakak (alternate years)

**155. Literature of the Cabala.** Lecture, three hours. Cabalistic literature in the broad sense (i.e., Jewish esoteric literature from the rabbinic to modern period). Topics include precabalistic esoteric texts, the early cabala, the Zohar, Lurianic cabala, nature of mysticism, the question of whether there was a Jewish mysticism. Mr. Davidson

**M187. The Holocaust in Literature.** (Same as Humanities M165.) Lecture, three hours. Prerequisite: History 191E, 191F, or 191G or equivalent. Investigation of how the Holocaust informs a variety of literary and cinema works and raises a wide range of aesthetic and moral questions. P/NP or letter grading. Mr. Band

**190. Undergraduate Seminar: Jewish Studies.** Examination of a single topic in depth with object of encouraging and guiding students' research in area of Jewish studies. Literary, cultural, and historical subjects included. (F,Sp)

**M191A-M191B. Survey of Jewish History.** (Same as History M191A-M191B.) Lecture, three hours. Survey of social, political, and religious developments.

**M191A.** From Biblical Times to End of the Middle Ages; **M191B.** From End of the Middle Ages to the Present. Mr. Myers

**M191C-M191D. Focal Themes in Jewish History.** (Same as History M191C-M191D.) Lecture, three hours. Treatment in depth of one major theme in Jewish history (such as history of Messianic Movements, structure of the Jewish communities) through the ages. Mr. Myers

**M192A-M192B. Jewish Intellectual History.** (Same as History M192A-M192B.) Lecture, three hours. Development of Jewish self-understanding in relation to intellectual climate of the environment as expressed in the halacha, in philosophy, and in cabalism. **M192A.** Medieval Period; **M192B.** Modern Period. Mr. Friedlander

**197A-197Z. Variable Topics in Jewish Studies.** Lecture or seminar, three hours. Variable topics; consult *Schedule of Classes* for topics to be offered in a specific term. P/NP or letter grading. **197A.** 20th-Century Jewish Thought. May not be repeated for credit. **197B.** Jewish Feminist Theology.

**199. Special Studies in Jewish Studies (2 to 8 units).** Limited to Jewish studies majors.

## Near Eastern Languages

### Lower Division Courses

**50A-50B-50C. Introduction to Near Eastern Languages and Cultures.** Lecture, three hours. Three-term sequence designed both as an introduction for undergraduates and as a prerequisite to various majors within department. Art and archaeology, languages and literatures, cultural history. Each course may be taken independently for credit. **50A.** Ancient Near East; **50B.** Medieval Near East; **50C.** Modern Near East.

### Graduate Courses

**200. Bibliography and Method of Near Eastern Languages and Literatures.** Lecture, two hours. Prerequisite: consent of instructor. Required for M.A. degree. Introduction to bibliographical resources and training in methods of research in various areas of specialization offered by department. May be repeated for credit.

**210. Survey of Afro-Asiatic Languages.** Lecture, three hours. Prerequisite: consent of instructor. Survey of structures of a number of representative languages from various major branches of Hamito-Semitic (Afro-Asiatic) language family.

**M241. Folklore and Mythology of the Near East.** (Same as Folklore M241.) Prerequisite: Folklore 101 or equivalent.

**290. Seminar: Paleography.** Seminar, three hours. Provides students with ability to cope with varieties of manuscripts.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study (2 to 8 units).** May be repeated for credit.

**597. Examination Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

**599. Ph.D. Dissertation Research and Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

## Semitics

### Upper Division Courses

**110. Neo-Aramaic.** Lecture, three hours. Grammar and reading of selected texts (folktales, homilies, songs) in modern Aramaic dialects of the Jews and Christians of Kurdistan. Mr. Sabar

**115. Syriac.** Lecture, two hours. Morphology and syntax of Syriac language, introductory reading.

**130. Biblical Aramaic.** Lecture, three hours. Prerequisites: Hebrew 102A-102B-102C or consent of instructor. Grammar of biblical Aramaic and reading of texts. (Alternate years)

**140A-140B. Elementary Akkadian.** Lecture, three hours. Elementary grammar and reading of texts in standard Babylonian. Mr. Buccellati

**141. Advanced Akkadian.** Lecture, three hours. Prerequisite: consent of instructor. Old Babylonian syntax; reading of basic Old Babylonian texts. Mr. Buccellati

**142. Akkadian Literary Texts.** Lecture, three hours. Prerequisite: consent of instructor. Selected readings from Akkadian myths and epics, with introduction to historical tradition of the works and their literary structure. Mr. Buccellati

**199. Special Studies in Semitics (2 to 8 units).** Prerequisite: consent of instructor. (F,W,Sp)

## Graduate Courses

**210. Ancient Aramaic.** Lecture, two hours. Prerequisite: course 130 or consent of instructor. Reading of surviving inscriptions and papyri. May be repeated for credit.

**215B. Syriac.** Lecture, two hours. Morphology and syntax of Syriac language; readings in Syriac translation of the Bible and Syriac literature. May be repeated for credit. (Alternate years)

**220A-220B. Ugaritic.** Lecture, two hours. Prerequisites: Hebrew 102A-102B-102C or consent of instructor. Study of Ugaritic language and literature. Only course 220B may be repeated for credit.

**225. Phoenician.** Lecture, two hours. Prerequisites: Hebrew 102A-102B-102C or consent of instructor. Study of Phoenician language and inscriptions. May be repeated for credit.

**230. Seminar: Northwest Semitic Languages and Literatures.** Seminar, two hours. Prerequisite: consent of instructor. May be repeated for credit.

**240. Seminar: Akkadian Language.** Seminar, two hours. Prerequisite: consent of instructor. Readings of texts from various dialects of Akkadian; selected problems in linguistic analysis of Akkadian dialects. May be repeated for credit. Mr. Buccellati

**240X. Seminar: Akkadian Language (1 unit).** Seminar, two hours. Prerequisite: consent of instructor. Readings of texts from various dialects of Akkadian; selected problems in linguistic analysis of Akkadian dialects. Course for students who participate regularly in class meetings but without the homework required in course 240. May be repeated for credit. S/U grading. Mr. Buccellati

**241. Seminar: Akkadian Literature.** Seminar, two hours. Prerequisite: consent of instructor. Readings of texts from various Akkadian literary genres; selected problems in literary history and stylistic analysis. May be repeated for credit. Mr. Buccellati

**241X. Seminar: Akkadian Literature (1 unit).** Seminar, two hours. Prerequisite: consent of instructor. Readings of texts from various Akkadian literary genres; selected problems in literary history and stylistic analysis. Course for students who participate regularly in class meetings but without the homework required in course 241. May be repeated for credit. S/U grading. Mr. Buccellati

**280A-280B-280C. Seminars: Comparative Semitics.** Seminar, two hours.

**596. Directed Individual Study (2 to 8 units).** May be repeated for credit.

**597. Examination Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

**599. Ph.D. Dissertation Research and Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

## Turkic Languages

### Upper Division Courses

**101A-101B-101C. Elementary Turkish.** Lecture, five hours. Grammar, reading, conversation, and elementary composition drills. Mr. Jaeckel (F,W,Sp)

**102A-102B-102C. Advanced Turkish.** Lecture, five hours. Prerequisites: courses 101A-101B-101C or equivalent. Continuing study of grammar, conversation, and composition. Readings in modern literature and social science texts. Mr. Jaeckel

**111A-111B-111C. Elementary Uzbek.** Lecture, three hours; laboratory, two hours. Prerequisite: consent of instructor. Elementary grammar, reading, and composition exercises; elementary conversation. Mr. Bodrogligeti

**112A-112B-112C. Advanced Uzbek.** Lecture, three hours; laboratory, two hours. Prerequisite: consent of instructor. Descriptive Uzbek grammar, reading, and analysis of Uzbek literary and folkloric texts. High-style composition and conversation. Mr. Bodrogligeti

**114A-114B-114C. Bashkir.** Lecture, three hours. Prerequisite: course 102A or consent of instructor. Grammar, reading of literary and folkloric texts. Mr. Bodrogligeti

**115A-115B-115C. Elementary Azeri.** Prerequisite: consent of instructor. Knowledge of Russian, Turkish, and Iranian helpful. Grammatical competence at elementary level; knowledge of basic facts of Azeri grammar; reading competence with help of dictionary; ability to write simple compositions; basic conversational skill. Mr. Bodrogligeti (Sum)

**116A-116B-116C. Advanced Azeri.** Prerequisite: placement test. Proficiency-based course in descriptive Azeri grammar. Reading and analysis of Azeri literary and folkloric texts in new writing system. High-style composition and conversation. Mr. Bodrogligeti (Sum)

**160. Cultural History of the Turks.** Lecture, three hours. Prerequisite: consent of instructor. Survey of cultural history of the Turks, as seen primarily through their literature, from their early history to the present. Mr. Bodrogligeti

**170. Turco-Mongolian Nomadic Empires.** Lecture, three hours. Prerequisite: consent of instructor. Required of students in Turkic program. Survey of history of Turkic and Mongolian dominions from the 3rd century B.C. to A.D. 19th century (Hsiung-nu, Hsien-pi, Juan-Juan, T'u-Chueh, Uyghur, Khitan, Karakhanid, Seljuq, Kara-Khitay, Khorazmian, Jengiz-Khanite). Mr. Bodrogligeti

**180. Modern Turkic Languages and Peoples.** Lecture, three hours. Prerequisite: consent of instructor. Required of students in Turkic program and recommended for students in Soviet studies. Ethnic and linguistic survey of the Turkic peoples. Mr. Bodrogligeti

**199. Special Studies in Turkic Languages (2 to 8 units).** Prerequisite: consent of instructor.

## Graduate Courses

**210A-210B-210C. Introduction to Ottoman.** Lecture, three hours. Prerequisite: consent of instructor. Introduction to literary language of Ottoman Empire from its foundation in the 14th century to its overthrow in the 20th century. For students of history, literature, and religion of the Balkans, Near East, and Central Asia. Topics include Arabic script as applied to Ottoman; Arabic and Persian elements in grammar and vocabulary. Readings of historical and literary texts. Mr. Jaeckel (F,W,Sp)

**211. Ottoman Diplomatics.** Lecture, three hours. Prerequisites: courses 210A-210B-210C or equivalent. Organization and contents of Ottoman archives; reading and discussion of documents and registers. Introduction to use of Ottoman archive materials as a source for historical research. Mr. Shaw

**220A-220B-220C. Classical Uzbek (Chagatay).** Lecture, three hours. Prerequisites: courses 101A-101B-101C or 111A-111B-111C or Iranian 102A-102B-102C or Arabic 102A-102B-102C or Hebrew 102A-102B-102C or consent of instructor. Language of classical Central Asian Turkic literature. Descriptive and historical grammar, text analysis, translation, and composition drills. Mr. Bodrogligeti

**225A-225B-225C. Old Turkic: Turk and Uygur.** Lecture, three hours. Prerequisites: course 180, consent of instructor. Textual and linguistic analysis of Turk and Old Uygur documents: inscriptions, Manichean and Buddhist literary works. Mr. Bodrogligeti (alternate years)

**230A-230B-230C. Historical and Comparative Survey of Turkic Languages.** Lecture, three hours. Prerequisite: course 180. Extinct and living Turkic languages. History of Turkic: developments in phonemic, grammatical, and lexical systems from the 8th to 20th century. Structural analysis of Turkic languages on comparative basis. Mr. Bodrogligeti

**235A-235B. Middle Turkic: Karakhanid, Khorazmian, Mamluk-Kipchak, and Old Anatolian.** Lecture, three hours. Prerequisites: course 180, consent of instructor. Survey of Middle Turkic documents. Textual and linguistic analysis of Middle Turkic texts from various literary genres. Mr. Bodrogligeti (alternate years)

**240A-240B-240C. Advanced Ottoman.** Lecture, three hours. Prerequisites: courses 210A-210B-210C or equivalent or consent of instructor. Emphasis on different genres of Ottoman writing (belles lettres as well as various types of state documents) in elaborate high style of classical Ottoman period (15th to 19th century). Selections are read in manuscript to prepare students to read works in form in which they are likely to encounter them in their research. Mr. Bodrogligeti, Mr. Jaeckel (F,W,Sp)

**250A-250B-250C. Islamic Texts in Chagatay.** Lecture, three hours. Prerequisites: courses 220A-220B-220C or consent of instructor. Philological and linguistic survey of basic Islamic source material written in Chagatay literary language. Reading and discussion of Chagatay texts on Islamic topics. Mr. Bodrogligeti

**280A-280B. Seminars: Modern Turkish Literature.** Seminar, two hours. Prerequisites: course 102B or equivalent, consent of instructor. Specific issues and trends in development of Turkish literature from middle of the 19th century to the present. Mr. Jaeckel

**290A-290B. Seminars: Classical Turkic Literature — Ottoman, Chagatay, and Azeri.** Lecture, two hours. Prerequisites: courses 210A-210B-210C and/or 220A-220B-220C, consent of instructor. Survey of Islamic literatures of the Turks in classical period. Readings of Ottoman, Chagatay, and Azeri texts from various literary genres. Discussion of stylistic, prosodic, and linguistic characteristics. Mr. Bodrogligeti

**596. Directed Individual Study (2 to 8 units).** May be repeated for credit.

**597. Examination Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

**599. Ph.D. Dissertation Research and Preparation (2 to 8 units).** Prerequisite: consent of department or instructor. S/U grading.

## Related Courses in Other Departments

**Art History 104B.** Eastern Islamic Art  
**History 111A-111B.** History of the Turks  
**209A-209B.** Seminars: Ottoman and Modern Turkish History

## Near Eastern Studies (Interdepartmental)

5353 Bunche Hall, (310) 825-1374,  
825-4601

### Professors

Andras Bodrogligeti, Ph.D. (*Near Eastern Languages and Cultures*)  
A. Jihad Racy, Ph.D. (*Ethnomusicology and Systematic Musicology*)  
Yona Sabar, Ph.D. (*Near Eastern Languages and Cultures*)  
Stanford J. Shaw, Ph.D. (*History*), *Chair*

### Associate Professors

Irene A. Bierman, Ph.D. (*Art History*)  
Michael G. Morony, Ph.D. (*History*)

### Assistant Professor

David N. Myers, Ph.D. (*History*)

## Scope and Objectives

The graduate major in this discipline is called Islamic studies. For details, see the program by that name earlier in this chapter.

The undergraduate major is designed primarily for (1) students seeking a general education and desiring a special emphasis in this particular area, (2) those who plan to live and work in the Near East whose careers will be aided by a knowledge of its peoples, languages, and institutions, and (3) students preparing for academic study in the various disciplines pertaining to the Near East.

## Bachelor of Arts Degree

### Preparation for the Major

**Required:** The first-year course in Arabic, Armenian, Hebrew, Persian, or Turkish. You must also obtain reading proficiency in French, German, Italian, Russian, or Spanish as demonstrated by completing six quarter courses or their equivalent in the language of your choice. You may substitute for the European language requirement Program in Computing 1 and one course from Economics 40, Political Science 6, Psychology 41, Sociology 18, or Statistics 50, plus one course from Economics 141, Geography 171, Political Science 102, Psychology M142, or Sociology 112. Also required are History 9D and four courses from History 1A, 1B, 1C, Anthropology 8, 9, Economics 1, 2, Geography 3, Political Science 20, 50, Sociology 1.

### The Major

**Required:** Sixteen courses as follows: (1) completion of the advanced level or equivalent in the same language taken in lower division; (2) History 106A-106B-106C and three additional courses in the history of the Near East, two of which are related to the major language; (3) four courses (two of which must be in the same discipline) from Anthropology 110, Art History M102A,

M102B, 104A, 104B, C104C, Economics 110, 111, 112, 190, Geography 187, 188, Political Science 132A, 132B, 164, 165, Sociology 187. This program may be modified in exceptional cases with consent of the adviser.

For further information, contact Professor Stanford J. Shaw at the program address.

## Neuroscience (Interdepartmental)

73-364 Center for the Health  
Sciences, (310) 206-2349

### Professors

Arthur P. Arnold, Ph.D. (*Psychology*)  
Jackson Beatty, Ph.D. (*Psychology*)  
Larry L. Butcher, Ph.D. (*Psychology*)  
Scott H. Chandler, Ph.D., (*Physiological Science*)  
V. Reggie Edgerton, Ph.D. (*Physiological Science*)  
Gaylord D. Ellison, Ph.D. (*Psychology*)  
Gordon L. Fain, Ph.D. (*Ophthalmology, Physiological Science*)  
Debora Farber, Ph.D., *in Residence* (*Ophthalmology*)  
Jack L. Feldman, Ph.D. (*Physiological Science*), *Chair*  
Joaquin M. Fuster, M.D., *in Residence* (*Psychiatry and Biobehavioral Sciences*)  
C.R. Gallistel, Ph.D. (*Psychology*)  
Alan D. Grinnell, Ph.D. (*Physiology*)  
Franklin B. Krasne, Ph.D. (*Psychology*)  
Michael Steven Levine, Ph.D., *in Residence* (*Psychiatry and Biobehavioral Sciences*)  
John C. Liebeskind, Ph.D. (*Psychology*)  
Michael T. McGuire, M.D. (*Psychiatry and Biobehavioral Sciences*)  
Peter M. Narins, Ph.D. (*Biology; Distinguished Teaching Award*)  
Donald Novin, Ph.D. (*Psychology*)  
Edward M. Ornitz, M.D., *in Residence* (*Psychiatry and Biobehavioral Sciences*)  
Arnold B. Scheibel, M.D. (*Anatomy and Cell Biology*)  
John D. Schlag, M.D. (*Anatomy and Cell Biology*)  
Judith L. Smith, Ph.D. (*Physiological Science; Distinguished Teaching Award*)  
James P. Thomas, Ph.D. (*Psychology*)  
Allan J. Tobin, Ph.D. (*Biology*)  
Jaime R. Villablanca, M.D., *in Residence* (*Psychiatry and Biobehavioral Sciences*)  
Eran Zaidel, Ph.D. (*Psychology*)

### Associate Professors

Robert H. Edwards, M.D. (*Neurology*)  
Carlos V. Grijalva, Ph.D. (*Psychology*)  
Cameron B. Gundersen, Ph.D. (*Pharmacology*)  
Wendy B. Macklin, Ph.D., *in Residence* (*Psychiatry and Biobehavioral Sciences*)  
Michael J. Raleigh, Ph.D., *in Residence* (*Psychiatry and Biobehavioral Sciences*)  
Stanley J. Schein, Ph.D., M.D. (*Psychology*)  
Jeffrey C. Smith, Ph.D., *in Residence* (*Physiological Science*)

### Assistant Professors

Utpal Banerjee, Ph.D. (*Biology*)  
David L. Glanzman, Ph.D. (*Physiological Science*)  
Volker Hartenstein, Ph.D. (*Biology*)  
Larry Hoffman, Ph.D., *in Residence* (*Surgery*)  
Diane M. Papazian, Ph.D. (*Physiology*)  
Dwayne D. Simmons, Ph.D. (*Biology*)

Joseph B. Watson, Ph.D., *in Residence* (*Psychiatry and Biobehavioral Sciences*)  
Nancy L. Wayne, Ph.D. (*Physiology*)

### Adjunct Assistant Professor

Alan Garfinkel, Ph.D. (*Medicine, Physiological Science*)

## Scope and Objectives

For details on the Ph.D. program, see Chapter 16 on the School of Medicine.

Neuroscience seeks to understand the brain in health and in disease. Topics of fundamental interest include perception, cognition, learning, memory, motor control, and regulation of body function. The undergraduate interdepartmental program seeks to expose students to this broad range of topics at many levels of analysis, including molecular, cellular, synaptic, network, and behavioral and to explore the principles and concepts of nervous system function.

## Bachelor of Science Degree

### Preparation for the Major

**Required:** Biology 5, 9; Chemistry 11A, 11B/11BL, 11C/11CL, 132A; Mathematics 3A, 3B, 3C (or 31A, 31B, 32A); Physics 6A, 6B, 6C (or 8A, 8B, 8C); one statistics course (Psychology 41, Statistics 50, or approved equivalent).

All preparation courses must be passed with a grade of C- or better and must be completed with an overall grade-point average of 2.5 or better. If you do not fulfill the preparation requirements by the time you attain 125 quarter units, you will be subject to dismissal from the major.

In fulfilling the college general education requirements, you are encouraged to select courses that complement the major; Psychology 10 is recommended as a social sciences elective.

Transfer students with 80 or more units must complete the following courses prior to admission: one biology course (equivalent to Biology 5), one year of general chemistry with laboratory, and one year of calculus. Two calculus-based physics courses or two organic chemistry courses are recommended.

### The Major

**Required:** (1) Neuroscience M101A-M101B-M101C, Biology 100A, Chemistry and Biochemistry 132B/132BL, 153A, 153L; (2) three four-unit area electives as follows: one *behavioral and cognitive neuroscience* course from Biology 129, 132, Computer Science 161, M196B, Neuroscience 197, Psychology 110, 111, 116, 118, 119B, 119D, 119E, 119G, 119I, M119J, M119K, 119M, 186A, 186B; one *cellular, developmental, and molecular neuroscience* course from Biology 100B, 108, 138, 153, CM156, 158, C174A through C174F (two units each), M185A, CM185B, Chemistry and Bio-

chemistry 132C, 153B, 153C, Neuroscience 197, Physiological Science 147, 148; one systems and integrative neuroscience course from Biology 166, 167, M173, Neuroscience 197, Physiological Science 111B, 138, 142, C143, C144, C145, Psychology 119F; (3) one four-unit research-related course from Neuroscience 191A through 191Z, 199, 199HA, 199HB; (4) three additional elective courses from the area list in item 2, Neuroscience 191A through 191Z, 197A through 197Z, 199, 199HA, 199HB.

No more than eight courses may be from any one department. A maximum of eight units of Neuroscience 191, 197, 199, or 199H (in any combination) may be applied toward the major.

### Honors Program

The honors program provides exceptional students with the opportunity to do research culminating in an honors thesis. Requirements for admission include a 3.2 overall grade-point average. Two upper division courses used to satisfy major requirements must be contracted for honors, and an honors thesis (Neuroscience 199HA-199HB) is required. After completion of all requirements and with the recommendation of the faculty 199H sponsor, faculty members may confer departmental honors or highest honors at graduation. Graduation with honors requires a 3.4 grade-point average in the major and a 3.2 overall, while highest honors are awarded to majors who have a GPA of 3.5 overall and a 3.7 in the major.

### Lower Division Courses

**88A-88Z. Lower Division Seminars.** Lecture, three hours. Prerequisite: freshman/sophomore standing. Seminars on current topics in neuroscience.

Mr. Scheibel and the Staff

### Upper Division Courses

**M101A-M101B-M101C. Neuroscience: From Molecules to Mind (5 units each).** (Same as Biology M175A-M175B-M175C, Physiological Science M180A-M180B-M180C, and Psychology M117A-M117B-M117C.) Lecture, four hours; discussion, one hour.

**M101A. Cellular Mechanisms.** Prerequisites: Biology 9, Chemistry 132A, Physics 3B or 6B or 8C. Cellular physiology, pharmacology, molecular biology, and development of nervous system.

Mr. Feldman, Mr. Narins (F)

**M101B. Integrative Mechanisms.** Prerequisite: course M101A (or Biology M175A or Physiological Science M180A or Psychology M117A) or Biology 171 or Physiological Science 111A or Psychology 115. Central and reflex mechanisms of homeostasis, sensory information processing, and motor control.

Mr. Grinnell, Mr. Levine, Mr. Schein, Mr. Smith (W)

**M101C. Neural Bases of Behavior.** Prerequisite: course M101B (or Biology M175B or Physiological Science M180B or Psychology M117B) or Biology 171 or Physiological Science 111A or Psychology 115. Neural mechanisms underlying motivation, learning, and cognition.

Mr. Gallistel (Sp)

**103. Neuroscience for Physicists, Mathematicians, and Engineers.** Lecture, three hours. Prerequisite: junior senior standing in physics, mathematics, or engineering. Not open for credit to neuroscience or other life sciences majors. Students required to develop an example of neuroscience from physical scientist's point of view.

(Sp)

**191A-191Z. Proseminars: Neuroscience.** Lecture, three hours. Prerequisites: courses M101A-M101B-M101C or consent of instructor. Advanced studies on current research issues in neuroscience; term paper and oral report required.

(W,Sp)

**197A-197Z. Special Topics in Neuroscience.** Lecture, three hours. Prerequisites: courses M101A-M101B-M101C or consent of instructor. Topics on one or more aspects of neuroscience.

(W,Sp)

**199. Independent Research in Neuroscience (4 to 8 units).** Prerequisites: courses M101A-M101B-M101C with grades of B (3.0) or better, senior standing in neuroscience. Directed independent research with a faculty member.

(F,W,Sp)

**199HA. Honors Thesis in Neuroscience (6 units).** Prerequisite: neuroscience honors program standing. Directed independent research for departmental honors with a faculty member, involving definition of research topic and extensive reading and research in the field of proposed honors thesis. In Progress grading (credit to be given only on completion of course 199HB).

(F,W,Sp)

**199HB. Honors Thesis in Neuroscience (6 units).** Prerequisite: course 199HA. Continued reading and research that culminate in final honors thesis. Maximum of eight units of course 199/199H may be applied toward elective requirements for the major.

(F,W,Sp)

## Organizational Studies (Interdepartmental)

4256 Bunche Hall, (310) 825-3862

### Scope and Objectives

Organizations are multifaceted and can usefully be explored from more than one disciplinary perspective. The undergraduate specialization in organizational studies brings together students and faculty from the Departments of Economics, Geography, History, Political Science, Psychology, and Sociology who share an interest in modern organizations. The program gives students a solid grounding in the organizational perspectives and methods of at least two departments. The specialization must be taken in conjunction with a major in the social sciences.

### Special Undergraduate Program

You may elect to combine this program with a departmental major and may petition to have the area of specialization recognized with the bachelor's degree.

The option of completing an individual major in organizational studies is also open to qualified students. For more information on individual majors, see the beginning of Chapter 5.

If you have a departmental major, you should seek advising in your major department. If you are interested in the individual major, consult a Letters and Science counselor.

Courses within the specialization must be taken for a letter grade. The specialization must be taken in conjunction with a major in the division of social sciences.

### Preparation for the Specialization

*Required:* At least five of the following courses appropriate to the courses to be taken in the specialization: Economics 1, 2; Geography 4; Political Science 80; Psychology 10; Sociology 1, or 18 and 104 or equivalent.

### Upper Division

*Required:* Nine upper division courses, including (1) at least three courses outside your major department selected from Management 190, Political Science 180, Sociology 168, 173; (2) a minimum of three courses selected from one of the following suites within your major department: Economics 147A, 147B, 170, 171; Geography 148, M149; Political Science 142, 145, 146, 182A, 182B, 182C, 182D; Psychology 135; Sociology 132, 135, 156, 182; (3) a minimum of three courses selected from one of the suites in item 2 in a department outside your major department; (4) internship experience in a governmental or service organization.

Professor Oscar Grusky (264 Haines Hall, 825-3232) is the program adviser. For further information, contact the political science undergraduate counselor in the program office.

## Philosophy

321 Dodd Hall, (310) 825-4641

### Professors

Marilyn McCord Adams, Ph.D.  
Robert Merrihew Adams, Ph.D.  
Tyler Burge, Ph.D., *Chair*  
Keith S. Donnellan, Ph.D.  
Kit Fine, Ph.D., *Vice Chair*  
David Kaplan, Ph.D.  
D. Anthony Martin  
Herbert Morris, Ph.D.

### Professors Emeriti

Rogers Albritton, Ph.D.  
Alonzo Church, Ph.D.  
Philippa Foot, M.A.  
Donald Kalish, Ph.D.  
Robert M. Yost, Ph.D.

### Associate Professor

Joseph Almog, Ph.D.

### Assistant Professors

Andrew Hsu, Ph.D.  
Marc Lange, Ph.D.  
Gavin Lawrence, Ph.D.  
Michael Otsuka, D.Phil.  
Seana Shiffrin, B.Phil.

### Adjunct Professors

Sandra G. Harding, Ph.D.  
Richard Popkin, Ph.D.

**Adjunct Associate Professor**

Robert L. Martin, Ph.D.

**Adjunct Assistant Professors**Arthur Flemming, Ph.D.  
David C. Wilson, Ph.D.**Scope and Objectives**

In a recent survey conducted by the Conference Board of the Associated Research Councils, UCLA's Philosophy Department was judged among the five best in the nation in terms of the quality of its faculty. It offers programs leading to the Bachelor of Arts and Ph.D. degrees.

Philosopher, translated from the Greek, literally means "lover of wisdom." The term has come to mean someone who seeks knowledge, enlightenment, and truth. The undergraduate program in philosophy is not directed at career objectives (although it is traditionally good preparation for law, theology, and graduate work in philosophy). Philosophy is taught to undergraduates primarily as a contribution to their liberal education. All of the lower and most of the upper division course offerings should be of interest and useful to students who are reflective about their beliefs or who wish to become so. It also provides the occasion to ponder the foundations of almost any other subject to which they are exposed — whether history, religion, government, or science.

The principal goal of the graduate program is to produce philosophers of high quality, thinkers informed by the great historical traditions of Western philosophers who can apply the methods of philosophical analysis to a broad range of current philosophical problems. Since all its graduate students hope to teach at the college or university level, the department is also committed to training clear, able, and stimulating teachers.

**Bachelor of Arts Degree****Preparation for the Major**

*Required:* Philosophy 7 or 21, 22, 31, and one other lower division philosophy course.

**The Major**

*Required:* Thirteen upper division (100 series) or graduate (200 series) philosophy courses (52 units), including Philosophy 100A, 100B, 100C. Seven of the 13 courses must be distributed among the groups into which the undergraduate and graduate courses are divided, in the following manner: two courses in each of three of the groups and one course in the remaining group.

Courses listed under "Special Studies" may be applied toward the major but not toward a group requirement. A maximum of eight units of course 199 may be applied toward the major but not toward a group requirement. Courses

100A, 100B, 100C may not be applied toward any group requirement. No course used to satisfy the major or preparation requirements may be taken on a P/NP basis.

Students intending to do graduate work in philosophy should consult both the graduate and undergraduate advisers.

**Honors Program**

On recommendation of the department faculty, honors in philosophy are awarded at graduation to a major whose grade-point average in upper division philosophy courses is 3.3 and who has completed two graduate courses (eight units) in philosophy with an average GPA of 3.5.

**Master of Arts Degree****Admission**

It is the policy of the department to admit only those who plan to earn the Ph.D. degree. For admission requirements, see the description under "Ph.D. Degree."

**Foreign Language Requirement**

You must demonstrate reading knowledge of French, German, Latin, or Greek. (When relevant to your research, another language may be substituted with consent of the department.) This requirement can be satisfied by passing, with a score of at least 500, the Graduate School Foreign Language Test (GSFLT) in an approved language. Alternatively, it can be satisfied by either of the methods in which the Ph.D. language requirement can be satisfied.

**Course Requirements**

You must complete with grades of B or better at least nine upper division or graduate courses (36 units), excluding Philosophy 199, of which five courses (20 units) must be in the 200 series, including courses 200A-200B-200C and one designated logic course. Consult the *Manual for Graduate Students in Philosophy* for the list of designated courses.

Courses in the 500 series may not be applied toward the course requirements for the M.A. in Philosophy.

**Comprehensive Examination Plan**

Students seeking the M.A. must pass the master's comprehensive examination, which consists of three different examinations. All three parts must be taken by the end of your first year of study. The examinations are written, last two hours each, and are on the subject matter covered in the three first-year seminars. The comprehensive examination is passed or failed as a whole, which does not necessarily require passing of all three parts. A grade of B- is the lowest passing grade on the whole examination or any of its parts; C+ is a failing grade. In case of failure, the examination may be repeated.

**Ph.D. Degree****Admission**

Admission to UCLA as a graduate student in philosophy requires approval both by the Graduate Division and by the Department of Philosophy. The University application should be sent directly to UCLA Graduate Application Processing; the departmental application, three letters of recommendation (on the official forms), one official transcript from each institution attended, a statement of purpose, a sample of your written work, official scores from the Graduate Record Examination (GRE) General Test (the Subject Test in Philosophy is not required), and official Test of English as a Foreign Language (TOEFL) scores for applicants whose native language is not English should be sent to the department graduate counselor. Departmental information and all applications can be obtained by writing to the Graduate Counselor, Department of Philosophy, 321 Dodd Hall, UCLA, Los Angeles, CA 90024-1451.

Admission to graduate study in philosophy is not probationary. At the end of your first year of study, however, the department conducts a review of your work, and results are discussed in a meeting between you and your graduate adviser.

**Foreign Language Requirement**

You must demonstrate reading knowledge of French, German, Latin, or Greek. (Another language may be substituted with consent of the department, if it is used in your doctoral work.) You may satisfy this requirement by completing, with a grade of C or better, the final course in a two-year sequence of college courses in an approved language. Alternatively, you may satisfy the requirement by passing the department language examination. Completion of the foreign language requirement is not required for admission to the doctoral program but is required by the University for advancement to candidacy.

**Course Requirements**

A Ph.D. candidate must complete, with a grade of B or better, the three first-year seminars, plus 11 additional upper division and graduate philosophy courses (not including individual studies courses), distributed as follows:

*Logic* — Philosophy 135A and one other designated upper division or graduate course in logic in either the Philosophy or Mathematics Department. One course must be completed by the end of your first year, unless a preparatory course is necessary. Consult the *Manual for Graduate Students in Philosophy* for the designated list.

*History of Philosophy* — One graduate course in history of philosophy, plus Philosophy 100A, 100B, 100C (or equivalent graduate or undergraduate courses taken at UCLA or elsewhere).

*Ethics and Value Theory* — One graduate-level course.

*Metaphysics and Epistemology* — One graduate-level course.

**Special Area Requirement** — In the second and third years, you must satisfy two special area requirements — one in metaphysics and epistemology and one in ethics. You must take two specially designated graduate courses in one of the two areas and write a paper prepared in accordance with a specific format called a "proposition" in the other area.

The special course requirement in either metaphysics and epistemology or in ethics should be completed in your second year, with the proposition requirement covering the remaining area to be completed in your third year. Consult the *Manual for Graduate Students in Philosophy* for further details.

**Electives** — As many courses as needed to fulfill the requirement of 11 additional upper division or graduate philosophy courses.

Group classification of a course is generally given by its catalog listing, but final classification of a course is determined by the instructor on the basis of its content and the departmental guidelines. Normally, no substitutions for these courses are allowed, but if you have done graduate coursework elsewhere, you may be permitted to substitute previous graduate coursework in exceptional cases.

## Teaching Experience

Before receiving a Ph.D., you are required to spend three terms as a teaching assistant at UCLA.

## Qualifying Examinations

The department does not require you to pass any written examination as a condition of advancement to candidacy. You are, however, required to take the master's comprehensive examination (see "M.A. Degree") to give the department evidence of your proficiencies and deficiencies. All three parts of the examination must be taken by the end of your first year of study.

In the third year, you begin a new series of individual studies courses (Philosophy 596) with your dissertation supervisor to develop a well-defined dissertation project. A doctoral committee is selected and the University Oral Qualifying Examination is scheduled. The primary purpose of this examination is to determine whether you are able to complete the dissertation successfully. The scope of the examination varies according to the definiteness of the dissertation topic and the extent of your preliminary investigations. In case of failure, the doctoral committee makes a recommendation for or against allowing a second oral examination.

## Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

## Final Oral Examination

The final oral examination may be waived by the doctoral committee. This determination is

usually made at the time of the oral qualifying examination.

## Lower Division Courses

**1. Beginnings of Western Philosophy.** Lecture, three hours; discussion, one hour. Origins of Greek cosmology and philosophy, beginnings of systematic thought and scientific investigation concerning such questions as origin and nature of the material world, concept of laws of nature, possibility and extent of knowledge. Concentration on pre-Socratic philosophers, particularly Anaximander, Heraclitus, the Pythagoreans, Parmenides, Empedocles, and Greek atomists, during first two thirds of course and on Socrates and some earlier works of Plato in last few weeks.

**2. Introduction to Philosophy of Religion.** Lecture, three hours; discussion, one hour. Introductory study of such topics as nature and grounds of religious belief, relation between religion and ethics, nature and existence of God, problem of evil, and what can be learned from religious experience.

Mr. Adams, Ms. Adams

**4. Philosophical Analysis of Contemporary Moral Issues.** Lecture, three hours; discussion, one hour. Critical study of principles and arguments advanced in discussion of current moral issues. Possible topics include revolutionary violence, rules of warfare, sexual morality, right of privacy, punishment, nuclear warfare and deterrence, abortion and mercy killing, experimentation with human subjects, rights of women.

Mr. Flemming

**5A. Philosophy in Literature.** Lecture, three hours; discussion, one hour. Philosophical inquiry into such themes as freedom, responsibility, guilt, love, self-knowledge and self-deception, death, and meaning of life through examination of great literary works in the Western tradition.

Mr. Morris

**6. Introduction to Moral and Political Philosophy.** Lecture, three hours; discussion, one hour. Study of some classical or contemporary works in moral and political philosophy. Questions that may be discussed include What is justice? Why be moral? Why obey the law? Which form of government is best? How much personal freedom should be allowed in society?

Mr. Otsuka

**7. Introduction to Philosophy of Mind.** Lecture, three hours; discussion, one hour. Introductory study of philosophical issues about nature of the mind and its relation to the body, including materialism, functionalism, behaviorism, determinism and free will, nature of psychological knowledge.

Mr. Almog, Mr. Burge

**8. Introduction to Philosophy of Science.** Study of selected problems concerning the character and reliability of scientific understanding, such as nature of scientific theory and explanation, reality of theoretical entities, inductive confirmation of hypotheses, and occurrence of scientific revolutions. Discussion at non-technical level of episodes from history of science.

Mr. Lange

**9. Principles of Critical Reasoning.** Nature of arguments: how to analyze them and assess soundness of the reasoning they represent. Common fallacies that often occur in arguments discussed in light of what counts as a good deductive or inductive inference. Other topics include use of language in argumentation to arouse emotions as contrasted with conveying thoughts, logic of scientific experiments and hypothesis-testing in general, and some general ideas about probability and its application in making normative decisions (e.g., betting).

Mr. Wilson

**21. Skepticism and Rationality.** Lecture, three hours; discussion, one hour. Can we know anything with certainty? How can we justify any of our beliefs? Introduction to study of these and related questions through works of some great philosophers of modern period, such as Descartes, Leibniz, Berkeley, or Hume.

Mr. Donnellan, Mr. Husu

**22. Introduction to Ethical Theory.** Lecture, three hours; discussion, one hour. Recommended or required for many upper division courses in Group III. Systematic introduction to ethical theory, including discussion of egoism, utilitarianism, justice, responsibility, meaning of ethical terms, relativism, etc.

Mr. Lawrence

**31. Logic, First Course.** Lecture, three hours; discussion, one hour. Recommended for students who plan to pursue more advanced studies in logic. Elements of symbolic logic, sentential and quantificational; forms of reasoning and structure of language.

Mr. Burge, Mr. Fine, Mr. Kaplan, Mr. R. Martin

**32. Logic, Second Course.** Lecture, three hours; discussion, one hour. Prerequisite: course 31 (preferably in preceding term). Symbolic logic: extension of systematic development of course 31. Quantifiers, identity, definite descriptions.

Mr. Fine, Mr. Kalish, Mr. D. Martin

**97. Freshman Seminar.** Prerequisite: consent of instructor. Variable topics; consult *Schedule of Classes* or "Department Announcements" for topics to be offered in a specific term. May be repeated for credit with consent of instructor.

## Upper Division Courses

**100A. History of Greek Philosophy.** Lecture, three hours; discussion, one hour. Prerequisite: one philosophy course or consent of instructor. Survey of origins of Greek metaphysics from pre-Socratics through Plato and Aristotle.

Mr. Albritton

**100B. Medieval and Early Modern Philosophy.** Lecture, three hours; discussion, one hour. Prerequisite: one philosophy course or consent of instructor. Strongly recommended: course 100A. Survey of development and transformation of Greek metaphysics and epistemology within context of philosophical theology, and transition from medieval to early modern period. Special emphasis on Augustine, Anselm, Aquinas, and Descartes.

Ms. Adams

**100C. History of Modern Philosophy, 1650-1800.** Lecture, three hours; discussion, one hour. Prerequisite: one philosophy course. Strongly recommended: course 100B. Courses 100A, 100B, and 100C should be taken in immediately successive terms if possible. Survey of development of metaphysics and theory of knowledge from 1650 to 1800, including Locke and/or Berkeley, Malebranche and/or Leibniz, and culminating in Hume and Kant. Topics may include views of these (and perhaps other) philosophers of the period on mind and body, causality, existence of God, skepticism, empiricism, limits of human knowledge, and philosophical foundations of modern science.

Mr. Adams

## Group I: History of Philosophy

**101A. Plato — Earlier Dialogues.** Lecture, three hours; discussion, one hour. Prerequisite: one philosophy course or consent of instructor. Study of selected topics in early and middle dialogues of Plato.

**101B. Plato — Later Dialogues.** Lecture, three hours; discussion, one hour. Prerequisite: course 101A. Study of selected topics in middle and later dialogues of Plato.

Mr. Lawrence

**102. Aristotle.** Lecture, three hours; discussion, one hour. Prerequisite: one philosophy course or consent of instructor. Study of selected works of Aristotle.

Mr. Lawrence

**104. Topics in Islamic Philosophy.** Lecture, three hours; discussion, one hour. Prerequisite: one philosophy course or consent of instructor. Development of Muslim philosophy in its great age (from Kindo to Averroes, 850 to 1200), considered in connection with Muslim theology and mysticism.



**105. Medieval Philosophy from Augustine to Maimonides.** Prerequisite: one philosophy course or consent of instructor. Development of early medieval philosophy within framework of Judeo-Christian theology and its assimilation and criticism of Greek philosophical heritage. Focus on problem of universals, existence and nature of God, problem of evil, and doctrines of the Trinity and atonement. Selected writings from Augustine through Maimonides read in English translation.

Ms. Adams

**106. Later Medieval Philosophy.** Prerequisite: one philosophy course or consent of instructor. Metaphysics, theory of knowledge, and theology of Aquinas, Duns Scotus, and Ockham, with less full discussion of other authors from the 13th through early 15th century. Selected texts read in English translation.

Ms. Adams

**107. Topics in Medieval Philosophy.** Prerequisite: one philosophy course. Recommended: course 105 or 106. Study of philosophy and theology of one medieval philosopher such as Augustine, Anselm, Abelard, Aquinas, Scotus, or Ockham, or study of a single area such as logic or theory of knowledge in several medieval philosophers. Topic announced each term. May be repeated for credit with consent of instructor.

Ms. Adams

**108. Hobbes.** Lecture, three hours; discussion, one hour. Prerequisite: one philosophy course or consent of instructor. Hobbes' political philosophy, especially the *Leviathan*, with attention to its relevance to contemporary political philosophy. May be concurrently scheduled with course C208.

Mr. Flemming

**109. Descartes.** Prerequisites: course 21 or two philosophy courses or consent of instructor. Study of works of Descartes, with discussion of issues such as problem of skepticism, foundations of knowledge, existence of God, relation between mind and body, and connection between science and metaphysics. May be concurrently scheduled with course C209.

Mr. Almog

**110. Spinoza.** Lecture, three hours; discussion, one hour. Prerequisite: course 21 or consent of instructor. Study of philosophy of Spinoza. May be concurrently scheduled with course C210, in which case there is weekly discussion meeting, plus fewer readings and shorter papers for undergraduates. Limited to 30 students when concurrently scheduled.

Mr. Adams

**111. Leibniz.** Lecture, three hours; discussion, one hour. Prerequisite: course 21 or consent of instructor. Study of philosophy of Leibniz. May be concurrently scheduled with course C211, in which case there is weekly discussion meeting, plus fewer readings and shorter papers for undergraduates. Limited to 30 students when concurrently scheduled.

Mr. Adams

**112. Locke and Berkeley.** Prerequisite: one philosophy course or consent of instructor. Study of philosophies of Locke and Berkeley; emphasis may sometimes vary from one figure to other. May be concurrently scheduled with course C212.

Mr. Donnellan

**114. Hume.** Prerequisite: one philosophy course or consent of instructor. Selected topics from metaphysical, epistemological, and ethical writings of Hume. Limited to 40 students when concurrently scheduled with course C214.

Mr. Donnellan

**115. Kant.** Lecture, three hours; discussion, one hour. Prerequisite: course 21 or 22 or consent of instructor. Study of Kant's views on related topics in theory of knowledge, ethics, and politics. May be repeated for credit with consent of instructor.

Mr. Burge

**116. 19th-Century Philosophy.** Lecture, three hours; discussion, one hour. Prerequisite: one philosophy course or consent of instructor. Selected topics in 19th-century thought.

Mr. Flemming

**117. Late 19th- and Early 20th-Century Philosophy.** Lecture, three hours; discussion, one hour. Prerequisite: one philosophy course or consent of instructor. Selected topics in work of one or more of following philosophers: Bolzano, Frege, Husserl, Meinong, G. Moore, early Russell, and Wittgenstein. May be repeated for credit with consent of instructor.

Mr. Almog, Mr. Burge

**118. Kierkegaard.** Prerequisite: one philosophy course or consent of instructor. Philosophical study of some major works of Kierkegaard, with emphasis on interpretation of the texts.

Mr. Adams

**C119. Topics in Modern Philosophy.** Prerequisite: one philosophy course or consent of instructor. Selected topics in one or more philosophies of the early modern period, or study in a single area such as theory of knowledge or metaphysics in several of the philosophies. May be repeated for credit with consent of instructor. Concurrently scheduled with course C219.

Mr. Adams, Mr. Flemming

## Group II: Logic, Semantics, and Philosophy of Science

**126A. Philosophy of Science.** Lecture, three hours; discussion, one hour. Prerequisite: one philosophy course or consent of instructor. Historical introduction to philosophy of science. Several general topics discussed in context of actual episodes in development of natural sciences.

Mr. Lange

**126B. Philosophy of Science.** Lecture, three hours; discussion, one hour. Prerequisite: course 31 or 126A or consent of instructor. Introduction to contemporary philosophy of science, focusing on problems of central importance.

Mr. Lange

**126C. Philosophy of Science: Social Sciences.** Lecture, three hours; discussion, one hour. Prerequisites: two philosophy courses or consent of instructor. Discussion of topics in philosophy of social sciences (e.g., methods of social sciences in relation to physical sciences, value-bias in social inquiry, concept formation, theory construction, explanation and prediction, nature of social laws).

**127A. Philosophy of Language.** Prerequisite: course 31 or consent of instructor. Syntax, semantics, pragmatics. Semantical concept of truth, sense and denotation, synonymy and analyticity, modalities and tenses, indirect discourse, indexical terms, semantical paradoxes. May be repeated for credit with consent of instructor.

Mr. Burge, Mr. Kaplan, Mr. D. Martin

**127B. Philosophy of Language.** Prerequisite: course 32 or consent of instructor. Course 127A is not prerequisite to 127B. Selected topics similar to those considered in course 127A, but at more advanced and technical level.

Mr. Kaplan

**128A. Philosophy of Mathematics.** Prerequisites: courses 31, 32, and preferably one additional logic course. Philosophy of mathematics; logicism of Frege and Russell, arithmetic reduced to logic; ramified type theory and impredicative definition (Russell, Poincaré, early Weyl).

Mr. Almog, Mr. D. Martin

**128B. Philosophy of Mathematics.** Prerequisite: course 128A or consent of instructor. Intuitionism of Brouwer, Heyting, and later Weyl; proof theory of Hilbert.

Mr. D. Martin

**129. Philosophy of Psychology.** Lecture, three hours; discussion, one hour. Prerequisites: one four-unit psychology course, one philosophy course. Selected philosophical issues arising from psychological theories. Relevance of computer simulation to accounts of thinking and meaning; relations between semantical theory and learning theory; psychological aspects of theory of syntax; behaviorism, functionalism, and alternatives; physiology and psychology.

Mr. Burge

**130. Philosophy of Space and Time.** Lecture, three hours; discussion, one hour. Prerequisites: two philosophy courses or one philosophy course and one physics course, or consent of instructor. Selected philosophical problems concerning nature of space and time. Philosophical implications of space-time theories, such as those of Newton and Einstein. Topics may include nature of geometry, conventionalism, absolutist versus relationist views of space and time, philosophical impact of relativity theory.

Mr. Lange

**131. Science and Metaphysics.** Prerequisites: two philosophy courses or consent of instructor. Recommended: some background in basic calculus and physics. Intensive study of one or two metaphysical topics on which results of modern science have been thought to bear. Topics may include nature of causation, reality and direction of time, time-travel, backwards causation, realism, determinism, absolute view of space, etc. May be repeated for credit with consent of instructor.

Mr. Lange

**133. Topics in Logic and Semantics.** Prerequisite: course 32. Possible topics include formal theories, definitions, alternative theories of descriptions, many-valued logics, deviant logics.

Mr. Kaplan, Mr. D. Martin

**M134. Introduction to Set Theory.** (Formerly numbered 134.) (Same as Mathematics M112A.) Lecture, three hours; discussion, one hour. Prerequisite: course 32 or Mathematics 31B or consent of instructor. Axiomatic set theory as framework for mathematical concepts; relations and functions, numbers, cardinality, axiom of choice, transfinite numbers. P/NP or letter grading.

Mr. Kalish, Mr. D. Martin

**135A. Metatheory of Sentential Logic.** Lecture, three hours; discussion, one hour. Prerequisite: course 32 or equivalent. Introduction to metatheory of classical sentential logic. Emphasis on fundamental metalogical ideas, including proof by induction, rigorous definition of syntactic and semantic concepts, and proof of completeness. Discussion of philosophical significance of these ideas.

Mr. Almog, Mr. Fine, Mr. Hsu

**135B. Metatheory of Predicate Logic.** Lecture, three hours; discussion, one hour. Prerequisite: course 135A or equivalent. Classical first-order logic, its scope, and limits. Gödel completeness theorem as main positive result. Some consideration to classical negative results on truth, decidability, and completeness, and relationship between first- and second-order logic.

Mr. Almog, Mr. Fine, Mr. Hsu

**136. Modal Logic.** Prerequisite: course 135A. First course in two-term sequence (also see course 176). Topics include various normal modal systems, derivability within the systems, Kripke-style semantics and generalizations, Lemmon/Scott completeness, incompleteness in tense and modal logic, quantificational extensions.

Mr. Almog, Mr. Fine, Mr. D. Martin

## Group III: Ethics and Value Theory

**150. Society and Morals.** Lecture, three hours; discussion, one hour. Prerequisite: course 22 or consent of instructor. Critical study of principles and arguments advanced in discussion of current moral and social issues. Topics similar to those in course 4, but familiarity with some basic philosophical concepts and methods presupposed. May be repeated for credit with consent of instructor.

**151A-151B-151C. History of Ethics.** Lecture, three hours; discussion, one hour. Prerequisites: two philosophy courses or consent of instructor. Course 151A is not prerequisite to 151B, which is not prerequisite to 151C. **151A.** Selected Classics in Ancient Ethical Theories: Plato, Aristotle; **151B.** Selected Classics in Modern Ethical Theories: Hume, Kant, Mill, etc.; **151C.** Selected Classics of Medieval Ethics.

Ms. Adams, Mr. Lawrence

**153A. Topics in Ethical Theory: Normative Ethics.** Prerequisite: course 22 or consent of instructor. Study of selected topics in normative ethical theory. Topics may include human rights, virtues and vices, principles of culpability and praiseworthiness (criteria of right action). May be repeated once for credit with consent of instructor.

Mr. Lawrence, Mr. Otsuka

**153B. Topics in Ethical Theory: Metaethics.** Prerequisite: course 22 or consent of instructor. Study of selected problems in metaethics. Topics may include analysis of moral language, justification of moral beliefs, moral realism, skepticism, etc. May be repeated once for credit with consent of instructor.

Mr. Lawrence, Mr. Otsuka

**155. Medical Ethics.** Examination of philosophical issues raised by problems of medical ethics, such as abortion, euthanasia, and medical experimentation.

Mr. Flemming

**156. Topics in Political Philosophy.** Lecture, three hours; discussion, one hour. Prerequisites: two philosophy courses or consent of instructor. Recommended: course 22. Analysis of some basic concepts in political theory. May be repeated for credit with consent of instructor.

Mr. Otsuka

**157A-157B. History of Political Philosophy.** Lecture, three hours; discussion, one hour. Prerequisites: two philosophy courses or consent of instructor. May be repeated with consent of instructor. **157A.** Reading and discussion of classic works in earlier political theory, especially those by Hobbes, Locke, Hume, and Rousseau. **157B.** Reading and discussion of classic works in later political theory, especially those by Kant, Hegel, and Marx.

Mr. Flemming, Mr. Otsuka

**161. Topics in Aesthetic Theory.** Lecture, three hours; discussion, one hour. Prerequisite: one philosophy course or consent of instructor. Philosophical theories about nature and importance of art and art criticism, aesthetic experience, and aesthetic values. May be repeated for credit with consent of instructor.

Mr. R. Martin

**166. Philosophy of Law.** Prerequisite: one philosophy course or consent of instructor. Examination, through study of recent philosophical writings, of such topics as nature of law, relationship of law and morals, legal reasoning, punishment, and obligation to obey the law.

Mr. Morris, Mr. Otsuka

## Group IV: Metaphysics and Epistemology

**170. Philosophy of Mind.** Lecture, three hours; discussion, one hour. Prerequisites: two relevant philosophy courses or consent of instructor. Analysis of various problems concerning nature of mind and mental phenomena, such as relation between mind and body, and our knowledge of other minds. May be repeated once for credit with consent of instructor.

Mr. Donnellan

**172. Philosophy of Language and Communication.** Prerequisites: two relevant philosophy or linguistics courses or consent of instructor. Theories of meaning and communication; how words refer to things; limits of meaningfulness; analysis of speech acts; relation of everyday language to scientific discoveries.

Mr. Donnellan

**175. Topics in Philosophy of Religion.** Lecture, three hours; discussion, one hour. Prerequisite: course 21 or 22 or consent of instructor. Intensive investigation of one or two topics or works in philosophy of religion, such as attributes of God, arguments for or against existence of God, or relation between religion and ethics. Topics announced each term. May be repeated for credit with consent of instructor.

Mr. Adams, Ms. Adams, Mr. Wilson

**176. Metaphysics of Modality.** Prerequisites: courses 31, 32. Highly recommended: course 136. Second course in two-term sequence (also see course 136). Metaphysical foundations of modal logic and philosophical basis of modal theory of modal logic. What are "possible worlds"? What is the "accessibility" relation? Is modal logic a logic or a theory? Is its focus logic or metaphysical necessity? Are the two notions really distinct? How metaphysically involved is (quantified) modal logic? What is its connection to doctrines of (1) "Haeccetism" and (2) "Aristotelian Essentialism"? P/NP or letter grading.

Mr. Almog, Mr. Fine

**177A. Existentialism.** Lecture, three hours; discussion, one hour. Prerequisite: one philosophy course or consent of instructor. Analysis of methods, problems, and views of some of the following: Kierkegaard, Nietzsche, Heidegger, Jaspers, Sartre, Marcel, and Camus. Possible topics include metaphysical foundations, nature of mind, freedom, problem of self, other people, ethics, existential psychoanalysis.

**177B. Historical Studies in Existentialism.** Prerequisite: one philosophy course or consent of instructor. Study of central philosophical texts of one of the following: Nietzsche, Heidegger, Jaspers, Buber, Sartre, or Camus. Emphasis on explication and interpretation of the texts. May be repeated for credit with consent of instructor.

Mr. Adams

**178. Phenomenology.** Lecture, three hours; discussion, one hour. Prerequisites: two philosophy courses or consent of instructor. Introduction to phenomenological method of approaching philosophical problems via works of some of the following: Brentano, Husserl, Heidegger, Scheler, Sartre, Merleau-Ponty, Ricoeur. Topics include ontology, epistemology, and particularly philosophy of mind.

**179. Oriental Philosophy: Buddhism.** Examination of central concepts and arguments in Buddhist philosophy, with emphasis on school of Mahayana Buddhism. Appropriate parallels to social concepts in the Western tradition.

**182. Elements of Metaphysics.** Lecture, three hours; discussion, one hour. Prerequisite: course 21 or consent of instructor. Study of basic metaphysical questions: nature of physical world, of minds, and of universals; and answers provided by alternative systems (e.g., phenomenalism, materialism, dualism).

Mr. Fine

**183. Theory of Knowledge.** Prerequisite: course 21 or consent of instructor. Analysis of concept of empirical knowledge.

Mr. Burge, Mr. Wilson

**184. Topics in Metaphysics.** Prerequisite: course 21 or consent of instructor. Intensive investigation of one or two topics or works in metaphysics, such as personal identity, nature of dispositions, possibility and necessity, universals and particulars, causality. Topics announced each term. May be repeated for credit with consent of instructor.

Mr. Almog, Mr. Donnellan, Mr. Fine

**186. Topics in Theory of Knowledge.** Prerequisite: course 182 or 183 or consent of instructor. Intensive investigation of one or two selected topics or works in theory of knowledge, such as a priori knowledge, problem of induction, memory, knowledge as justified true belief. Topics announced each term. May be repeated for credit with consent of instructor.

Mr. Burge, Mr. Lange

**187. Philosophy of Action.** Prerequisites: two philosophy courses or consent of instructor. Study of various concepts employed in understanding human action. Topics may include rational choice, desire, intention, weakness of will, and self-deception.

Mr. Burge, Mr. Donnellan

**188. Philosophy of Perception.** Prerequisites: two philosophy courses or consent of instructor. Critical study of main philosophical theories of perception and arguments used to establish them.

**189. Major Philosophers of the 20th Century.** Prerequisites: two philosophy courses or consent of instructor. Study of writings of one or more major modern philosophers (e.g., Russell, Moore, Wittgenstein, Carnap, Quine). May be repeated for credit with consent of instructor.

Mr. Almog, Mr. Burge, Mr. Donnellan, Mr. Hu

## Special Studies

**M192. Philosophical Analysis of Issues in Feminist Theory.** (Same as Women's Studies M110D.) Lecture, three hours. Prerequisite for women's studies majors: Women's Studies 10; for other students: one philosophy course or consent of instructor. Examination in depth of different theoretical positions on gender and women as they have been applied to study of philosophy. Emphasis on theoretical contributions made by the new scholarship on women in philosophy. Critical study of concepts and principles which arise in discussion of women's rights and liberation. Philosophical approach to feminist theories. May be repeated for credit with consent of instructor.

**193. Christian Ethical Thought.** Lecture, three hours; discussion, one hour. Reading of selected classic and contemporary authors in the Christian ethical tradition, with philosophical analysis and assessment of their views on morality and religious life.

Mr. Adams

**195. 19th- and 20th-Century Religious Thought.** Lecture, three hours; discussion, one hour. Philosophical approach to Western religious thought of last 200 years, through study of selected works by such authors as Kant, Schleiermacher, Kierkegaard, Buber, Camus, and Tillich.

Mr. Adams

**196. Undergraduate Seminar: Philosophy.** Lecture, one hour; discussion, three hours. Prerequisite: consent of instructor. Variable topics; consult *Schedule of Classes* or "Department Announcements" for topic to be offered in a specific term. May be repeated for credit with consent of instructor.

**199. Special Studies (2 to 8 units).** Prerequisite: consent of instructor. Eight units may be applied toward degree requirements, but course cannot be substituted for a course in one of the four groups on basis of similarity of subject matter.

## Graduate Courses

**200A-200B-200C. Seminar for First-Year Graduate Students.** Limited to and required of all first-year graduate students in philosophy. Selected topics in metaphysics and epistemology, history of philosophy, and ethics.

## Group I. History of Philosophy

**201. Plato.** Prerequisite: consent of instructor. Study of later dialogues.

**202. Aristotle.** Prerequisite: consent of instructor. Analysis of major problems in Aristotle's philosophy based on reading, exposition, and critical discussion of relevant texts in English translation.

Mr. Lawrence

**203. Seminar: History of Ancient Philosophy.** Prerequisite: consent of instructor. Selected problems and philosophers. May be repeated for credit with consent of instructor.

Mr. Albritton

**206. Topics in Medieval Philosophy.** Prerequisite: consent of instructor. Study of philosophy and theology of one or several medieval philosophers such as Augustine, Anselm, Abelard, Aquinas, Scotus, or Ockham or study of a single area such as logic or theory of knowledge in several medieval philosophers. Topics announced each term. May be repeated for credit with consent of instructor.

Ms. Adams

**207. Seminar: History of Medieval and Renaissance Philosophy.** Prerequisite: consent of instructor. Selected problems and philosophers. May be repeated for credit with consent of instructor.

Ms. Adams

**C208. Hobbes.** (Formerly numbered 208.) Lecture, three hours; discussion, one hour. Prerequisite: one philosophy course or consent of instructor. Hobbes' political philosophy, especially the *Leviathan*, with attention to its relevance to contemporary political philosophy. May be concurrently scheduled with course C108.

Mr. Flemming

**C209. Descartes.** Prerequisite: consent of instructor. Study of works of Descartes, with discussion of issues such as problem of skepticism, foundations of knowledge, existence of God, relation between mind and body, and connection between science and metaphysics. May be concurrently scheduled with course C109.

Mr. Almog

**C210. Spinoza.** Prerequisite: consent of instructor. Selected topics in philosophy of Spinoza. May be concurrently scheduled with course C110, in which case there is a two-hour biweekly discussion meeting, plus additional readings and longer term paper for graduates.

Mr. Adams

**C211. Leibniz.** Prerequisite: consent of instructor. Selected topics in philosophy of Leibniz. May be concurrently scheduled with course C111, in which case there is a two-hour biweekly discussion meeting, plus additional readings and longer term paper for graduates. Mr. Adams

**C212. Locke and Berkeley.** Prerequisite: consent of instructor. Selected topics in philosophy of Locke and Berkeley. May be repeated for credit with consent of instructor. May be concurrently scheduled with course C112. Mr. Donnellan

**C214. Hume.** Prerequisite: consent of instructor. Selected topics in philosophy of Hume. May be repeated for credit with consent of instructor. May be concurrently scheduled with course C114. Mr. Donnellan

**215. Kant.** Prerequisite: consent of instructor. Intensive study of selected writings of Immanuel Kant. Mr. Adams

**216. 19th-Century Philosophy.** Prerequisite: consent of instructor. Topics in 19th-century philosophy. May be repeated for credit with consent of instructor.

**C219. Topics in Modern Philosophy.** (Formerly numbered 219.) Prerequisite: consent of instructor. Selected topics in one or more philosophies of the early modern period, or study in a single area such as theory of knowledge or metaphysics in several of the philosophies. May be repeated for credit with consent of instructor. Concurrently scheduled with course C119. Mr. Adams, Mr. Flemming

**220. Seminar: Topics in History of Philosophy.** Seminar, three hours. Prerequisite: consent of instructor. Selected problems and philosophers which may be from different periods. May be repeated for credit with consent of instructor. Mr. Adams, Ms. Adams

## Group II. Logic, Semantics, and Philosophy of Science

**221A. Topics in Set Theory.** Prerequisite: Mathematics M112A or consent of instructor. Sets, relations, functions, partial and total orderings; well-orderings. Ordinal and cardinal arithmetic, finiteness and infinity, continuum hypothesis, inaccessible numbers. Formalization of set theory: Zermelo/Fraenkel; von Neumann/Gödel theory. May be repeated for credit with consent of instructor. Mr. D. Martin

**221B. History of Set Theory.** (Formerly numbered 221C.) Prerequisite: consent of instructor. Development of concept of set and axiomatic set theory by examining selected writings of Frege, Cantor, Russell, Zermelo, Gödel, and several others. Origins and significance of certain key ideas, such as set theory as logic, axiomatic set theory as a reaction to the paradoxes, formal first-order axiomatic set theory as opposed to informal axiomatics, type theory and rank hierarchy, ramification and predicativity, proper classes and sets as small classes, and particular Zermelo/Fraenkel axiomatic theory. Emphasis on actual expressed ideas and views of various influential authors. Mr. D. Martin

### 222A-222B-222C. Gödel Theory:

**222A.** Prerequisites: several courses in logic, preferably including course 135B. First in series of three courses leading to Gödel incompleteness theorem and Tarski definition of truth. Mr. D. Martin

**222B.** Prerequisite: course 222A. Second-order arithmetic. Second in series of three courses leading to Gödel incompleteness theorem and Tarski definition of truth. Mr. D. Martin

**222C.** Prerequisite: course 222B. Gödel numbering and Gödel theory. Final course in Gödel theory series. Mr. D. Martin

**224. Philosophy of Physics.** Prerequisite: consent of instructor. Selected philosophical topics related to physical theory, depending on interests and background of participants, including space and time; observation in quantum mechanics; foundations of statistical mechanics. May be repeated for credit with consent of instructor.

**225. Probability and Inductive Logic.** Prerequisites: course M134, or Mathematics M112A and 112B, or consent of instructor. Topics may include interpretations of probability, Bayesian and non-Bayesian confirmation theory, paradoxes of confirmation, coherence, and conditioning. Mr. Lange

**226. Topics in Mathematical Logic.** Prerequisite: consent of instructor. Content varies from term to term. May be repeated for credit with consent of instructor. Mr. Kaplan, Mr. D. Martin

**227. Philosophy of Social Science.** Prerequisite: consent of instructor. Examination of philosophical problems concerning concepts and methods used in social sciences. Topics may include relation between social processes and individual psychology, logic of explanation in social sciences, determinism and spontaneity in history, interpretation of cultures radically different from one's own. Students with primary interest and advanced preparation in a social science are encouraged to enroll. May be repeated for credit with consent of instructor.

**230. Seminar: Logic.** Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Mr. Almog, Mr. Fine, Mr. Kaplan, Mr. D. Martin

**231. Seminar: Intensional Logic.** Prerequisite: consent of instructor. Topics may include logic of sense and denotation, modal logic, logic of demonstratives, epistemic logic, intensional logic of *Principia Mathematica*, possible worlds semantics. May be repeated for credit with consent of instructor. Mr. Almog, Mr. Fine, Mr. Kaplan, Mr. D. Martin

**232. Philosophy of Science.** Prerequisite: consent of instructor. Selected topics in philosophy of science. May be repeated for credit with consent of instructor. Mr. Lange

**233. Seminar: Philosophy of Physics.** Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Mr. Lange

## Group III. Ethics and Value Theory

**241. Topics in Political Philosophy.** Prerequisites: course 150 or 156 or 157A or 157B or any two philosophy courses or consent of instructor. Examination of one or more topics in political philosophy (e.g., justice, democracy, human rights, political obligation, alienation). May be repeated for credit with consent of instructor.

**245. Seminar: History of Ethics.** Prerequisite: consent of instructor. Selected topics. May be repeated for credit with consent of instructor. Mr. Lawrence

**246. Seminar: Ethical Theory.** Prerequisite: consent of instructor. Selected topics. Content varies from term to term. May be repeated for credit with consent of instructor. Mr. Lawrence, Mr. Morris, Mr. Otsuka

**247. Seminar: Political Theory.** Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Mr. Otsuka

**248. Problems in Moral Philosophy.** Prerequisite: consent of instructor. Intensive study of some leading current problems in moral philosophy. May be repeated for credit with consent of instructor. Mr. Lawrence, Mr. Morris, Mr. Otsuka

**255. Seminar: Aesthetic Theory.** Prerequisite: consent of instructor. Selected topics. May be repeated for credit with consent of instructor.

**M256. Topics in Legal Philosophy.** (Same as Law M217.) Lecture, three hours. Prerequisite: consent of instructor. Examination of topics such as concept of law, nature of justice, problems of punishments, legal reasoning, and obligation to obey the law. May be repeated for credit with consent of instructor. Mr. Dolinko, Mr. Otsuka

**M257. Seminar: Philosophy of Law.** (Same as Law M524.) Lecture, three hours. Prerequisite: consent of instructor. Selected topics in philosophy of law. May be repeated for credit with consent of instructor. Mr. Morris, Mr. Otsuka

## Group IV. Metaphysics and Epistemology

**271. Seminar: Topics in Metaphysics and Epistemology.** Discussion, three hours. Prerequisite: consent of instructor. May be repeated for credit with consent of instructor.

**275. Human Action.** Prerequisites: two upper division philosophy courses or consent of instructor. Examination of theories, concepts, and problems concerning human actions. Topics may include analysis of intentional actions; determinism and freedom; nature of explanations of intentional actions. May be repeated for credit with consent of instructor. Mr. Donnellan

**280. 20th-Century Continental Philosophy.** Prerequisite: consent of instructor. Selected topics in 20th-century continental European philosophy. May be repeated for credit with consent of instructor.

**281. Seminar: Philosophy of Mind.** Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Mr. Burge

**282. Seminar: Metaphysics.** Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Mr. Almog, Mr. Burge

**283. Seminar: Theory of Knowledge.** Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Mr. Donnellan

**284. Seminar: Philosophy of Perception.** Prerequisite: consent of instructor. May be repeated for credit with consent of instructor.

**285. Philosophy of Psychoanalysis.** Prerequisite: consent of instructor. Examination of topics such as nature and validity of psychoanalytic explanations and interpretations, psychoanalysis and language, meta-psychological concepts such as the unconscious, the ego, id, superego, defense mechanisms, and psychoanalytic conception of human nature. Mr. Morris

**286. Philosophy of Psychology.** Relevance of computer simulation to accounts of thinking and meaning; relations between semantical theory and learning theory; psychological aspects of theory of syntax; behaviorism, functionalism, and alternatives; physiology and psychology. Mr. Burge

**287. Seminar: Philosophy of Language.** Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Mr. Burge, Mr. Donnellan, Mr. Fine

**288. Seminar: Wittgenstein.** Seminar, three hours. Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Mr. Hsu

**289. Seminar: Philosophy of Religion.** Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Mr. Adams, Ms. Adams

**290. Workshop: Philosophy of Language.** Seminar, two hours. Prerequisite: consent of instructor. Ongoing discussion of current issues in philosophy of language based on contemporary texts and current research. Presentations of ideas by attending faculty and graduate students with open discussion. May be repeated for credit with consent of instructor. Mr. Donnellan, Mr. Kaplan

**299. Seminar: Philosophical Research.** Lecture, three hours. Prerequisite: advancement to candidacy or consent of instructor. Presentation of ongoing research by graduate students or faculty members. Participants make presentations, analyze and discuss presentations of others, and read and discuss philosophical texts related to presentations. May be repeated for credit with consent of instructor. S/U grading. Mr. Donnellan

## Special Studies

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495. Teaching College Philosophy (2 to 4 units).**

Prerequisite: consent of instructor. Seminars, workshops, and apprentice teaching. Selected topics, including evaluation scales, various teaching strategies and their effects, and other topics in college teaching. May be repeated for credit. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596A-596B. Directed Individual Studies (2 to 8 units each).** Properly qualified graduate students who wish to pursue a problem through reading or advanced study may do so if their proposed project is acceptable to a staff member. May be repeated for credit. S/U (course 596B) and letter (course 596A) grading.

**597. Directed Studies for Graduate Examinations (2 to 8 units).** Preparation for M.A. comprehensive examination or Ph.D. oral qualifying examinations. S/U grading.

**599. Research for Ph.D. Dissertation (2 to 8 units).** Prerequisite: advancement to Ph.D. candidacy. May be repeated for credit. S/U grading.

## Physics

3-174 Knudsen Hall, (310) 825-3224

### Professors

Ernest S. Abers, Ph.D.  
Shlomo Alexander, Ph.D.  
Maha Ashour-Abdalla, Ph.D.  
Eric E. Becklin, Ph.D.  
Robijn F. Bruinsma, Ph.D.  
Charles D. Buchanan, Ph.D.  
Sudip Chakravarty, Ph.D.  
W. Gilbert Clark, Ph.D.  
David B. Cline, Ph.D.  
John M. Cornwall, Ph.D.  
Ferdinand V. Coroniti, Ph.D.  
Robert D. Cousins, Ph.D.  
John M. Dawson, Ph.D.  
Eric D'Hoker, Ph.D.  
Sergio Ferrara, Ph.D.  
Christian Fronsdal, Ph.D.  
Walter N. Gekelman, Ph.D., *in Residence*  
Graciela Gelmini, Ph.D.  
George Gruner, Ph.D.  
Karoly Holczer, Ph.D.  
George J. Igo, Ph.D.  
Charles F. Kennel, Ph.D.  
Steven Kivelson, Ph.D.  
Leon Knopoff, Ph.D.  
Ian McLean, Ph.D.  
George J. Morales, Ph.D.  
Steven A. Moszkowski, Ph.D.  
Bernard M.K. Nefkens, Ph.D.  
Richard E. Norton, Ph.D.  
C. Kumar N. Patel, Ph.D.  
Roberto Peccei, Ph.D., *Chair*  
Rene Pellat, Ph.D.  
Claudio Pellegrini, Ph.D.  
Seth J. Putterman, Ph.D.  
Joseph Rudnick, Ph.D.  
Peter E. Schlein, Ph.D.  
William E. Slater, Ph.D.  
Reiner L. Stenzel, Ph.D.  
E.T. Tomboulis, Ph.D.  
Charles A. Whitten, Jr., Ph.D.  
Gary A. Williams, Ph.D.  
Alfred Y. Wong, Ph.D.  
Chun Wa Wong, Ph.D.

### Professors Emeriti

Alfredo Baños, Jr., Dr.Eng., Ph.D.  
Hans E. Bommel, Ph.D.  
Rubin Braunstein, Ph.D.  
Nina Byers, Ph.D.  
Marvin Chester, Ph.D.  
Robert J. Finkelstein, Ph.D. (*Distinguished Teaching Award*)  
Burton D. Fried, Ph.D.  
Roy P. Haddock, Ph.D.  
Kenneth R. MacKenzie, Ph.D.  
J. Reginald Richardson, Ph.D.  
Isadore Rudnick, Ph.D.  
Robert A. Satten, Ph.D.  
David Saxon, Ph.D. (*University President Emeritus; Distinguished Teaching Award*)  
Julian S. Schwinger, Ph.D. (*University Professor Emeritus*)  
Donald H. Stork, Ph.D.  
Norman A. Watson, Ph.D.  
Eugene Y. Wong, Ph.D.  
Byron T. Wright, Ph.D.

### Associate Professors

Katsushi Arisaka, Ph.D.  
Shechao Feng, Ph.D.  
Thomas Müller, Ph.D.

### Assistant Professors

Zvi Bern, Ph.D.  
Stuart Brown, Ph.D.  
Steven Cowley, Ph.D.  
Douglas Durian, Ph.D.  
Jay Hauser, Ph.D.  
Hong-Wen Jiang, Ph.D.  
James Rosenzweig, Ph.D.  
Hidenori Sonoda, Ph.D.

### Adjunct Professors

Muzaffer Atac, Ph.D.  
Viktor Decyk, Ph.D.  
Phillip Pritchett, Ph.D.

## Scope and Objectives

Physics is a basic science with actual and potential applications in many fields. The undergraduate curriculum is broad and general with respect to physics but includes an introduction to theoretical and experimental work in specialized subfields of physics in the senior year. The Physics B.S. degree program is primarily directed at providing a basic foundation for students who intend to go on to graduate school in physics or related fields such as engineering or other physical sciences. However, for many this is a terminal degree preparatory to working as an engineer or technician in industry. The B.A. program in General Physics provides flexibility for students who are interested in fields outside of physics in which a strong background knowledge of physics would be helpful.

The department offers a comprehensive graduate program leading to the Master of Science degree (en route to the Ph.D.), the Master of Arts in Teaching (M.A.T.), and the Ph.D., which is offered in theoretical or experimental work in a choice of subfields. It is the policy of the department to admit only students who plan to earn the Ph.D. or M.A.T. degree.

## Undergraduate Study

The Department of Physics offers a choice of two undergraduate majors: the B.S. degree program in Physics and the B.A. degree program in General Physics. Courses taken to fulfill any of the requirements for either major must be taken for a letter grade.

## Bachelor of Science in Physics

This major should be taken if you intend to continue toward the Ph.D. in Physics.

### Preparation for the Major

*Required:* Physics 8A/8AL, 8B/8BL, 8C/8CL, 8D/8DL, 8E; Chemistry and Biochemistry 11A, 11B/11BL, 11C (11CL is recommended but not required); Mathematics 31A, 31B, 32A, 32B, 33A, 33B. A detailed brochure on the major is available in the Undergraduate Office, 3-160 Knudsen Hall.

### The Major

*Required:* Physics 105A, 105B, 110A, 110B, 112, 115A, 115B, 131, three courses from the 180 series; three additional upper division lecture courses selected from 108, 114, M122, 123, 124, 126, 132, 140. An upper division mathematics course may be substituted for Physics 132 with consent of an adviser. A C average is required in the above courses. Reading knowledge of Russian, German, or French is recommended.

If you are preparing for graduate school, you should take additional courses in physics and mathematics. Physics M122, 123, 124, 126, 132, and 140 are recommended.

**Transfer Students** — Junior transfer students should preferably have completed (1) a two-year calculus/analytic geometry sequence or equivalent and (2) the calculus-based physics course at their previous college, but in no case should less than three semesters or four quarters of the mathematics and one year of the physics sequence be completed before transferring to UCLA. Each mathematics and physics course must be passed with a grade of C or better.

### Honors Programs

The department offers three honors programs leading to graduation with honors or highest honors in physics. You are eligible after completing the preparation for the major and four upper division physics courses with an overall grade-point average of 3.0 and a 3.5 GPA in upper division physics and mathematics courses. Contact the Undergraduate Office for a complete description of the programs and an application.

## Bachelor of Arts in General Physics

The major is intended to provide the necessary flexibility for fields in which a strong back-

ground of knowledge in physics would be helpful. If you intend to continue work toward the Ph.D. in Physics, you are advised to work for the B.S. in Physics as described earlier.

### Preparation for the Major

*Required:* Physics 8A/8AL, 8B/8BL, 8C/8CL, 8D/8DL, 8E; Chemistry and Biochemistry 11A, 11B/11BL, 11C (11CL is recommended but not required); Mathematics 31A, 31B, 32A, 32B, 33A, 33B. A detailed brochure on the major is available in the Undergraduate Office.

### The Major

*Required:* Physics 105A, 110A, 110B, 112, 115A, 131, one course from the 180 series, two upper division physics electives (excluding 185 and 199), and five upper division courses in no more than two other UCLA departments. A C average in the upper division physics courses is required.

### Instructional Credentials

You may earn credentials for teaching physical sciences and other subjects in California elementary and secondary schools. Completion of the instructional credential program in the Teacher Education Laboratory is required. Consult the Graduate School of Education, 1605 Maxxam Building (122 Moore Hall in early 1994, 310-825-8328) for information.

### Graduate Study

The Department of Physics offers opportunities for graduate study leading to the M.S. (en route to the Ph.D.), M.A.T. (Master of Arts in Teaching), and Ph.D. degrees. Special emphasis is given to preparation in the following fields of physics: accelerator, acoustics/low-temperature, elementary particles, intermediate energy and nuclear physics, plasma and astrophysics, solid-state and condensed matter.

### Admission

You must have an excellent undergraduate record in addition to meeting the University minimum requirements. You are required to take the Graduate Record Examination (GRE) Subject Test in Physics and to submit three letters of recommendation. International applicants who are applying for financial support (fellowships, teaching assistantships, and graduate student researcher appointments) should have a letter of recommendation (included as one of the three required letters of recommendation) which comments on their verbal ability in English.

Application materials may be obtained by writing to the Graduate Office, Department of Physics, 3-164 Knudsen Hall, UCLA, Los Angeles, CA 90024-1547.

### Master of Arts in Teaching

#### Major Fields or Subdisciplines

It is not required to designate an area of specialization for the M.A.T. degree.

### Course Requirements

This degree is a physics master's degree which also leads to qualification for instructional credentials at the secondary school or junior college level. Five graduate courses, five professional (300 series) courses, and 12½ total courses are required.

(1) The five graduate physics courses must include Physics 370 and four courses from 210A, 210B, 215A, 221A, 221B.

(2) Also required are the courses necessary for completion of the preliminary State of California Single Subject Instructional Credential, K-12: Community Health Sciences 187, Education 100, 112, 312, 315A-315B, 330B, 330C.

Courses in the 500 series may not be applied toward the M.A.T. degree.

### Teaching Experience

Teaching experience is required insofar as the required education courses are concerned (supervised teaching at the secondary or junior college level).

### Comprehensive Examination Plan

A passing grade on a written comprehensive examination is required. M.A.T. candidates who fail to qualify at the master's level of achievement may take the examination a second time. Permission to take it a third time may be granted only under exceptional circumstances.

### Master of Science Degree

Except for the Master of Arts in Teaching program, the department does not offer a terminal master's degree. The M.S. degree is awarded to students in the Ph.D. program after they satisfy the requirements described below.

### Course Requirements

The University requires a total of nine courses with an average grade of B or better for the M.S. degree. The Physics Department requires that a minimum of six of the nine be graduate courses in physics of which you must pass the five fundamental (core) courses: Physics 210A, 210B, 215A, 221A, 221B. To complete the minimum six graduate courses you are required to pass one of the following courses with a grade of B or better: 220, 221C, 231A. The remaining three courses (to complete the nine courses for the M.S. degree) may be satisfied by upper division or graduate courses, not necessarily in physics, which are acceptable to the Physics Department. No more than two of the three may be from course 596 or seminar courses. Only eight units of 500-series courses may be applied toward the total course requirement for the M.S. degree (courses 597 and 598 may not be applied).

### Comprehensive Examination Plan

A passing grade on a written comprehensive examination is required. The examination must be taken no later than your fourth term in residence. This examination is given twice a year.

Although the department operates under the comprehensive examination plan rather than the thesis plan, arrangements generally can be made to write a master's thesis, provided you have a particularly interesting research problem and a professor willing to undertake the guidance of your work. You must petition the departmental committee of graduate advisers for permission to pursue the thesis plan. The comprehensive examination requirement is waived if the petition is approved.

### Ph.D. Degree

The graduate program in physics leads to the Ph.D. degree. Although you may obtain the M.S. degree en route to the Ph.D., the department does not admit candidates for the M.S. degree only.

### Major Fields or Subdisciplines

Ph.D. degrees are granted in the following fields of specialization: accelerator physics, elementary particles, intermediate energy and nuclear physics, low-temperature/acoustics, plasma and astrophysics, and condensed matter (including solid-state).

Arrangements can be made to obtain a Ph.D. in Physics while doing research in interdisciplinary fields such as biophysics, astrophysics, geophysics, etc. The details of each program should be established in consultation with the graduate affairs officer.

### Course Requirements

By the end of your first year of graduate study you are expected to acquire a mastery of the core graduate physics material presented in Physics 210A, 210B, 215A, 221A, 221B. Since knowledge of this material is tested on the written comprehensive examination, usually all or most of the five courses constitute your main course load in your first year of graduate study. Detailed syllabi for the courses are available in the Graduate Office, 3-164 Knudsen Hall.

You must fulfill a breadth requirement by passing course 220 or 221C or 231A with a grade of B or better. In addition, if you have not taken course 132 or its equivalent as an undergraduate, you must do so at the beginning of your graduate program. The core and breadth requirements should be completed by your fifth term in residence.

### Qualifying Examinations

All departmental graduate students (master's and Ph.D.) take the same written comprehensive examination, which is graded as follows: (1) pass at the Ph.D. level of achievement, (2) pass at the master's level of achievement, or (3) fail. This examination is normally taken prior to your fourth term in residence.

All students in the Ph.D. program must pass the examination at the Ph.D. level of achievement. Permission to take it a third time may be granted only under exceptional circumstances.

No later than your fourth term in residence you are expected, in consultation with your adviser, to begin taking a series of courses, seminars, and tutorials to prepare you for original research in a given area of specialization. No later than your fifth term in residence you are expected to begin taking a sequence of Physics 596 courses with a faculty member in your chosen field of specialization. By the third term of the 596 sequence you are expected to make a substantive oral presentation describing the results of a problem in your 596 program before an audience which includes the faculty member(s) with whom you are taking course 596 and three other faculty members. No later than the end of your eighth term in residence you are expected to make a formal arrangement with a faculty member to serve as your Ph.D. research sponsor.

The doctoral committee conducts the University Oral Qualifying Examination, which may include (1) material in your field of specialization, (2) related material that members of the committee from other departments may wish to ask, and (3) discussion of the proposed dissertation problem. Committee members guide, read, approve, and certify the dissertation. A decision is also made at this time as to whether a final oral examination is required.

When a satisfactory report on the completion of the written and oral qualifying examinations has been submitted, you are eligible to be formally advanced to candidacy for the Ph.D.

### Final Oral Examination

This examination ordinarily is a discussion of your original work, including your dissertation and other related matters to be determined by the committee. It may be, if the committee so desires, a survey or comprehensive examination.

### Lower Division Courses

Students who wish to use physics to satisfy part of the general education requirements in the physical sciences and who have no mathematics background beyond the high school mathematics required for admission to UCLA may take either Physics 10 or 3A if only one course is to be taken, or 3A and 3B as a two-course sequence.

Physics 1Q is intended for entering freshman physics majors and other interested students. Although it is not a required course or a part of or prerequisite to any general physics sequence of courses, its purpose is to indicate the nature of current research problems in physics on a level intended to be attractive to entering students with a good high school science and mathematics background.

Physics 3A, 3B, 3C form a one-year sequence of courses in general physics (with laboratory). In this sequence only algebra and trigonometry are used in providing a mathematical description of physical phenomena; calculus is not used.

Physics 6A, 6B, 6C form a one-year sequence of courses in basic physics for students in the biological and health sciences. However, unlike Physics 3A, 3B, 3C, calculus is used throughout, and successful completion of basic calculus courses is a prerequisite for admission to this sequence.

Physics 8A, 8B, 8C, 8D, 8E form a sequence of courses in general physics for majors in physics.

The department takes into account prior preparation in physics. If you feel your background would permit acceleration, you may be exempted from one or more of courses 8A through 8E by taking the final examination with a class at the end of any term. These serve as placement examinations. A satisfactory score on one or both parts of the College Entrance Examination Board Advanced Placement Physics C Test may also serve as a placement examination, but placement is not automatic. You should discuss such possibilities with your departmental adviser.

Physics 10 is a one-term, non-laboratory course which surveys the whole field of physics. Any two or more courses from Physics 3A, 6A, 8A, and 10 are limited to six units credit.

**1Q. Contemporary Physics (2 units).** Review of current problems in physics, with emphasis on those being studied at UCLA. Significance of the problems and their historical context. P/NP grading. (F)

**3A. General Physics: Mechanics of Solids and Fluids.** Lecture/demonstration, three hours; discussion, one hour; laboratory, two hours. Prerequisites: three years of high school mathematics including trigonometry or two years of high school mathematics and one-term college course in mathematics with trigonometry included in the group of courses or equivalent courses. Not open for credit to students with credit for course 8A or equivalent. Fundamentals of classical mechanics: Newton laws; conservation of momentum, angular momentum, energy; Kepler laws; dynamics of systems of particles; fluid mechanics. (F)

**3B. General Physics: Heat, Sound, Electricity and Magnetism.** Lecture/demonstration, three hours; discussion, one hour; laboratory, two hours. Prerequisite: course 3A or equivalent. Temperature, heat, and laws of thermodynamics. Introduction to wave motion, resonance. Sound and acoustics. Electric and magnetic fields. Electric power. Elements of DC and AC circuits. (W)

**3C. General Physics: Light, Relativity, and Modern Physics.** Lecture/demonstration, three hours; discussion, one hour; laboratory, two hours. Prerequisite: course 3B or equivalent. Light, optical instruments. Introduction to relativity. Electron and atom. Matter waves. Nuclear and particle physics. (Sp)

**6A. Physics for Life Sciences Majors: Mechanics.** Lecture/demonstration, three hours; discussion, one hour; laboratory, two hours. Prerequisites: Mathematics 3A, 3B, 3C (may be taken concurrently), or equivalent. (F,W,Sp)

**6B. Physics for Life Sciences Majors: Electricity and Magnetism.** Lecture/demonstration, three hours; discussion, one hour; laboratory, two hours. Prerequisite: course 6A. (F,W,Sp)

**6C. Physics for Life Sciences Majors: Light and Modern Physics.** Lecture/demonstration, three hours; discussion, one hour; laboratory, two hours. Prerequisite: course 6B. (F,W,Sp)

**8A. Physics for Scientists and Engineers: Mechanics.** Lecture/demonstration, four hours; discussion, one hour. Prerequisite: Mathematics 31A or equivalent. Recommended: high school physics and chemistry. Corequisites: course 8AL, Mathematics 31B. Motion, Newton laws, work, energy, linear and angular momentum, rotation, equilibrium, gravitation. (F,W,Sp)

**8AH. Physics for Scientists and Engineers: Mechanics (Honors).** Prerequisites: Mathematics 31A or equivalent, consent of instructor. Introduction to classical mechanics for engineering and physical sciences students. (W)

**8AL. Physics Laboratory for Scientists and Engineers: Mechanics (1 unit).** Lecture, one hour; laboratory, two hours. Corequisite: course 8A or consent of instructor. (F,W,Sp)

**8B. Physics for Scientists and Engineers: Waves, Sound, Heat.** Lecture/demonstration, three hours; discussion, one hour. Prerequisites: course 8A, Mathematics 31B. Corequisites: course 8BL, Mathematics 32A (or equivalent). Harmonic oscillators, standing and traveling waves, fluid dynamics, sound, kinetic theory of gases, laws of thermodynamics. (F,W,Sp)

**8BH. Physics for Scientists and Engineers (Honors).** Lecture/demonstration, three hours; discussion, one hour. Prerequisites: course 8A with a grade of A or recommendation of 8A instructor and Mathematics 31B completed and 32A concurrent, or consent of instructor. Same material as course 8B but in greater depth. (Sp)

**8BL. Physics Laboratory for Scientists and Engineers: Waves, Sound, Heat (1 unit).** Lecture, one hour; laboratory, two hours. Corequisite: course 8B or consent of instructor. (F,W,Sp)

**8C. Physics for Scientists and Engineers: Electricity and Magnetism.** Lecture/demonstration, four hours; discussion, one hour. Prerequisites: course 8B, Mathematics 32A. Corequisites: course 8CL, Mathematics 32B. Electrostatics: electric field and potential, capacitors and dielectrics. Currents, DC circuits, transients in RC circuits. Magnetism: magnetic fields and forces, Ampere law, Faraday law, magnetic properties of matter. Maxwell equations in integral form. Inductance and transients in RL circuits. (F,W,Sp)

**8CH. Physics for Scientists and Engineers (Honors).** Lecture/demonstration, four hours; discussion, one hour. Prerequisites: course 8BH or 8B with a grade of A or recommendation of 8B instructor and Mathematics 32A completed and 32B concurrent, or consent of instructor. Same material as course 8C but in greater depth. (F)

**8CL. Physics Laboratory for Scientists and Engineers: Electricity and Magnetism (1 unit).** Lecture, one hour; laboratory, two hours. Corequisite: course 8C or consent of instructor. (F,W,Sp)

**8D. Physics for Scientists and Engineers: Electromagnetic Waves, Light, and Relativity.** Lecture/demonstration, three hours; discussion, one hour. Prerequisites: course 8C, Mathematics 32B. Corequisites: course 8DL, Mathematics 33A. AC circuits, resonance. Maxwell equations in differential form. Electromagnetic waves. Light: reflection, refraction, interference, diffraction, polarization. Special theory of relativity. (F,W,Sp)

**8DH. Physics for Scientists and Engineers (Honors).** Lecture/demonstration, three hours; discussion, one hour. Prerequisites: course 8CH or 8C with a grade of A or recommendation of 8C instructor and Mathematics 32B completed and 33A concurrent, or consent of instructor. Same material as course 8D but in greater depth. (W)

**8DL. Physics Laboratory for Scientists and Engineers: Electromagnetic Waves, Light, and Relativity (1 unit).** Lecture, one hour; laboratory, two hours. Corequisite: course 8D or consent of instructor. (F,W,Sp)

**8E. Physics for Scientists and Engineers: Modern Physics.** Lecture/demonstration, three hours; discussion, one hour; laboratory, two hours. Prerequisites: course 8D, Mathematics 33A. Corequisite: Mathematics 33B or equivalent. Wave-particle duality, quantum theory, Schrödinger equation, hydrogen atom, exclusion principle. (W,Sp)

**10. Physics.** Lecture/demonstration, three hours; quiz/discussion, one hour. Not open for credit to students with credit for course 3A or 6A or 8A or equivalent course in mechanics. Special mathematical preparation beyond that necessary for admission to University in freshman standing not required. Topics include planetary motion, Newton laws, gravitation, electricity and magnetism, wave motion, light, sound, and heat, relativity, quantum mechanics, atoms, and subatomic particles. As time permits, development of physical ideas is placed in cultural and historical perspective. (F,W,Sp)

## Upper Division Courses

Prerequisites for all upper division courses (except Physics 105A, 116): Physics 8A through 8E, Mathematics 31A, 31B, 32A, 32B, 33A, and 33B, or consent of instructor. It is recommended that students take the 180 laboratories in their senior year.

**105A. Analytic Mechanics.** Lecture, three hours; discussion, one hour. Prerequisite: Mathematics 32A. Corequisite: Mathematics 32B. Newtonian mechanics and conservation laws, gravitational potentials, calculus of variations, Lagrangian and Hamiltonian mechanics, central force motion, linear and nonlinear oscillations. (F,Sp)

**105B. Analytic Mechanics.** Prerequisite: course 105A. Relativity with four vectors, noninertial reference frames, dynamics of rigid bodies, coupled oscillators, normal modes of oscillation, vibrating strings, and wave propagation. (F,W)

**108. Optical Physics.** Prerequisite: course 110B. Interaction of light with matter; dispersion theory, oscillator strength, line widths, molecular scattering. Coherence theory, Kirchhoff formulation of diffraction theory, crystal optics, optical rotation, electro and magneto optical effects. Additional topics of fundamental or current interest.

**110A. Electricity and Magnetism.** Lecture, three hours. Prerequisite: course 131. Electrostatics and magnetostatics. (W,Sp)

**110B. Electricity and Magnetism.** Prerequisite: course 110A. Faraday law and Maxwell equations. Propagation of electromagnetic radiation. Multipole radiation and radiation from an accelerated charge. Special theory of relativity. (F,Sp)

**112. Thermodynamics.** Lecture, three hours; discussion, one hour. Prerequisite: course 115A or consent of instructor. Fundamentals of thermodynamics, including first, second, and third laws. Statistical mechanical point of view and its relation to thermodynamics. Some simple applications. (F,Sp)

**114. Mechanics of Wave Motion and Sound.** Lecture, three hours. Prerequisites: courses 105A and 105B, or consent of instructor. Vibrating systems and wave propagation in gases, liquids, and solids, including elements of hydrodynamics and elasticity. Applications in ultrasonics, low-temperature physics, solid-state physics, architectural acoustics.

**115A. Elementary Quantum Mechanics.** Lecture, three hours; discussion, one hour. Prerequisites: courses 8E, 105B (may be taken concurrently), 131. Classical background, basic ideas, formulation of quantum mechanics, one-dimensional problems, and methods of quantum mechanics. (W,Sp)

**115B. Elementary Quantum Mechanics.** Lecture, three hours; discussion, one hour. Prerequisite: course 115A. Three-dimensional problems, angular momentum, Pauli exclusion principle, variational and perturbative methods of quantum mechanics. (F,Sp)

**116. Electronics.** Lecture, three hours; laboratory, three hours. Alternating current circuits, transmission line circuits, transistor and IC circuits to generate, modify, and detect electrical signals, introduction to digital circuits, analysis of noise and methods to reduce its influence in electrical measurements.

**M122. Plasma Physics.** (Same as Electrical Engineering M185.) Lecture, four hours; outside study, eight hours. Prerequisite: course 110A or Electrical Engineering 101. Senior-level introductory course to physics of plasmas and ionized gases and fundamentals of controlled fusion. Particle motion in magnetic fields; fluid behavior, plasma waves; resistivity and transport; equilibrium and stability; kinetic effects. Discussion of illustrative laboratory experiments.

**123. Atomic Structure.** Prerequisite: course 115B. Theory of atomic structure. Interaction of radiation with matter.

**124. Nuclear Physics.** Lecture, three hours; discussion, one hour. Prerequisite: course 115B. Nuclear properties, nuclear forces, nuclear structure, nuclear decays, and nuclear reactions.

**126. Elementary Particle Physics.** Lecture, three hours; discussion, one hour. Prerequisite: course 115B. Introduction to physics of elementary particles. The four basic interactions: strong, electromagnetic, weak, and gravitational. Properties of baryons, mesons, quarks, and leptons; conservation laws, symmetries and broken symmetries; the Standard Model; experimental techniques; new physics at the new accelerators.

**131. Mathematical Methods of Physics.** Lecture, three hours; discussion, one hour. Vectors and fields in space, linear transformations, matrices, and operators; Fourier series and integrals. (F,W,Sp)

**132. Mathematical Methods of Physics.** Lecture, three hours; discussion, one hour. Prerequisite: course 131. Functions of a complex variable, including Riemann surfaces, analytic functions, Cauchy theorem and formula, Taylor and Laurent series, calculus of residues, and Laplace transforms.

**140. Introduction to Solid-State Physics.** Prerequisite: course 115B or equivalent. Introduction to basic theoretical concepts of solid-state physics with applications. Crystal symmetry; cohesive energy; diffraction of electron, neutron, and electromagnetic waves in a lattice; reciprocal lattice; phonons and their interactions; free electron theory of metals; energy bands.

**160. Numerical Analysis Techniques and Particle Simulations.** Lecture, three hours; computer terminals, six hours. Prerequisites: courses 105A, 105B, 110A, 110B, minimum knowledge of computer programming (FORTRAN). Introduction to the field of computer modeling of physical systems using particle models; numerical models and methods, methods of diagnosing results, experience with running interesting physical problems.

**180A. Nuclear Physics Laboratory.**

**180B. Physical Optics and Spectroscopy Laboratory.**

**180C. Solid-State Laboratory.**

**180D. Acoustics Laboratory.**

**180E. Plasma Physics Laboratory.**

**180F. Elementary Particle Laboratory.**

**185. Foundations of Physics.** Prerequisite: senior standing in physics or consent of instructor. Historical development and philosophical sources of classical and modern physics.

**199. Special Studies in Physics (2 to 4 units).** May be repeated, but no more than 12 units may be applied toward Physics B.S. degree requirements.

## Graduate Courses

**201Q. Modern Physics Research Areas (2 units).** Review of modern physics research areas, with emphasis on those actively pursued at UCLA. S/U grading.

**210A. Electromagnetic Theory.** Boundary value problems in electrostatics and magnetostatics. Multipole expansions; dielectrics and macroscopic media. Maxwell equations and conservation laws. Wave guides and resonators; simple radiating systems. (W)

**210B. Electromagnetic Theory.** Electromagnetic potentials and Hertz vectors. Cylindrical waves. Spherical waves. Debye potentials. Multipole radiation. Classical relativistic electrodynamics. Radiation from moving charges. (Sp)

**213A. Advanced Atomic Structure.** Group representation theory. Angular momentum and coupling schemes. Interaction of radiation with matter.

**213B. Advanced Atomic Structure.**  $n$ -j symbols, continuous groups, fractional parentage coefficients,  $n$  electron systems.

**213C. Molecular Structure.** Application of group theory to vibrational and electronic states of molecules. Molecular orbital theory. Raman effect. Angular momentum and coupling in molecules.

**214A. Advanced Acoustics.** Propagation of waves in elastic and fluid media. Reflection, refraction, diffraction, and scattering of waves in fluids. Attenuation mechanisms in fluids.

**214B. Advanced Acoustics.** Propagation in nonhomogeneous fluids and in moving fluids. Radiation pressure, acoustic streaming, and attenuation in large amplitude sound fields. Propagation of sound in liquid helium. Mechanisms resulting in attenuation for elastic waves in solids.

**215A. Statistical Physics.** Thermodynamics and statistical mechanics with applications. (F)

**215B. Nonequilibrium Statistical Mechanics.** Probability theory, Markov processes, equations of change, BBGKY hierarchy and its consequences, Boltzmann equation, Chapman/Enskog method, transport coefficients, fluctuation/dissipation theorems, density matrix, H-theorems.

**215C. Quantum Statistical Mechanics and the Many Body Problem.** Classical methods for interacting systems; quantum field theory techniques in statistical mechanics; Green's function approach; Coulomb gas; imperfect Bose gas; electron/phonon interaction; superconductivity; phase transitions; theory of Fermi liquid. (F,W,Sp)

**220. Classical Mechanics.** Lecture, three hours. Hamilton/Jacobi theory, action-angle variables, classical perturbation theory, and selected topics such as introduction to physics of continuous media and fluids, nonlinear phenomena.

**221A-221B-221C. Quantum Mechanics.** Lecture, three hours. **221A.** Fundamentals of quantum mechanics, operators and state vectors, equations of motion. **221B.** Prerequisite: course 221A. Rotations and other symmetry operations, perturbation theory. **221C.** Formal theory of collision processes, quantum theory of radiation, introduction to relativistic quantum mechanics.

**222A-222B-222C. Plasma Physics.** Properties of a Coulomb gas with and without a magnetic field: equilibrium, oscillations, instabilities, fluctuations, collective phenomena, transport properties, and radiation. Description via single-particle orbit theory, magnetohydrodynamics, and kinetic equations of various types.

**223. Advanced Classical Mechanics.** Prerequisite: course 220. Topics such as nonlinear mechanics, ergodic theory, mechanics of continuous media.

**224. Introduction to the Strong Interaction.** Evidence concerning the strong interaction, particularly as exemplified in nucleon/nucleon and pion/nucleon systems. Isospin, scattering matrix, density matrix and polarization, properties of pions, one pion exchange potential, phase shift analysis.

**225A-225B. Advanced Nuclear Physics.** Prerequisites: courses 221A-221B. Normally preceded by course 224. Advanced course in structure of complex nuclei, nuclear models, scattering and reactions.

**226A-226B-226C. Elementary Particle Physics (6 units each).** Lecture, four hours. Prerequisites: courses 221A-221B-221C or equivalent and 230A-230B (may be taken concurrently). Modern theories of elementary particle physics beginning with symmetry principles and conserved quantities, classic V-A theory of weak interactions, gauge field theories (Abelian and non-Abelian), spontaneous symmetry breaking,  $SU(2) \times U(1)$  electroweak interactions of leptons, quarks,  $W_s$ ,  $Z^0$  and  $\gamma$ , quark theory of hadrons and quantum chromodynamics.

**226D. Beyond the Standard Model.** Lecture, three hours. Prerequisites: courses 226A-226B-226C, 230A-230B-230C. Discussion of possible extensions of the current standard model of electroweak and strong interactions, including axions, technicolor, grand unified theories, supersymmetry, supergravity, and superstrings. S/U grading.

**230A-230B-230C. Relativistic Quantum Theory (6 units each).** Lecture, four hours. Prerequisites: courses 221A-221B-221C or equivalent or consent of instructor. Modern quantum field theory, including quantum electrodynamics and quantum chromodynamics, renormalization group methods, path-integral quantization, spontaneous symmetry breakdown, monopoles and other solitons.

**231A. Methods of Mathematical Physics.** Not open for credit to students with credit for Mathematics 266A. Linear operators, review of functions of a complex variable, integral transforms, partial differential equations.

**231B. Methods of Mathematical Physics.** Not open for credit to students with credit for Mathematics 266B. Ordinary differential equations, partial differential equations, and integral equations. Calculus of variations.

**231C. Methods of Mathematical Physics.** Not open for credit to students with credit for Mathematics 266C. Perturbation theory. Singular integral equations. Numerical methods.

**232A-232B. Relativity.** Special and general theories, with applications to elementary particles and astrophysics.

**232C. Special Topics in General Relativity.**

**233. Introduction to High-Energy Astrophysics.** Introductory lectures on modern high-energy astrophysics. High-energy radiation processes. Neutron stars. Pulsars. X-ray sources. Black holes. Supermassive rotators and quasars.

**235. Group Theory and Quantum Mechanics.** Prerequisite: course 221A. Group representation theory and applications to quantum mechanics of atoms, molecules, and solids.

**241A. Solid-State Physics.** Prerequisites: courses 140, 215A, 221A. Symmetry, free electrons, electrons in a periodic potential, experimental measurement of band structure and Fermi surface parameters, cohesive energy, lattice vibrations, thermal properties.

**241B. Solid-State Physics.** Prerequisite: course 241A. Transport theory with applications, electron/electron interactions.

**241C. Solid-State Physics.** Prerequisite: course 241B. Semiconductors, magnetism, phase transitions, superconductivity.

**242A-242B. Advanced Solid-State Theory.** Prerequisites: courses 241A, 241B, and 241C (may be taken concurrently). Many body methods in solid-state physics.

**243A-243K. Special Topics in Solid-State Physics.** **243A.** Disordered Systems; **243B.** Magnetic Resonance; **243C.** Phase Transitions; **243D.** Magnetism; **243E.** Superconductivity; **243F.** Macromolecules; **243G.** Semiconductors; **243H.** Optical Interactions; **243I.** Nonlinear Optics; **243J.** Hopping Transport; **243K.** Low-Temperature Physics.

**250. Introduction to Acceleration of Charged Particles.** Lecture, three hours. Prerequisites: courses 210A, 210B, 215A. Principles of charged-particle acceleration, including principles of synchrotrons and storage rings, beam parameter determination, statistical behavior of beams and beam cooling techniques, synchrotron light sources, colliding beam storage rings, medical accelerators, and free electron lasers.

**260. Seminar: Problems in Plasma Physics.**

**261. Seminar: Special Problems in Theoretical Physics.**

**262. Seminar: Physics of the Solid State.**

**264. Seminar: Advanced Physical Acoustics.**

**266. Seminar: Propagation of Waves in Fluids.**

**268. Seminar: Spectroscopy.**

**269A. Seminar: Nuclear Physics (2 to 4 units).**

**269B. Seminar: Elementary Particle Physics (2 to 4 units).**

**280E. Advanced Plasma Laboratory.** Lecture, two hours; laboratory, four hours. Prerequisites: courses M122, 180E. Laboratory experiments on behavior of plasmas in magnetic fields. Study of basic physics of particle motions, distribution functions, and fluid dynamics. Plasma waves and nonlinear phenomena. Advanced probe, microwave and plasma diagnostics.

**290. Research Tutorial: Plasma Physics (2 or 4 units).** Three terms required of each graduate student doing research in this field, ordinarily during second or third year. Seminar and discussion by staff and students directed toward problems of current research interest in plasma physics group, both experimental and theoretical. May be repeated for credit. S/U grading.

**291. Research Tutorial: Elementary Particle Theory (2 or 4 units).** Prerequisites: courses 226A, 230A-230B. Required of each graduate student doing research in this field, ordinarily during second or third year. Seminar and discussion by staff, postdoctoral fellows, and graduate students. May be repeated for credit. S/U grading.

**292. Research Tutorial: Spectroscopy, Low-Temperature, and Solid-State Physics (2 or 4 units).** Required of each graduate student doing research in these fields, ordinarily during second or third year. Seminar and discussion by staff and students on problems of current research interest in spectroscopy, low-temperature, and solid-state physics. May be repeated for credit. S/U grading.

**293. Research Tutorial: Current Topics in Physics (2 units).** Lecture, one hour. Seminar and discussion by staff and students on current topics in physics, both experimental and theoretical (topics not limited to one field of physics). Strongly recommended for graduate students in physics. May be repeated for credit. S/U grading.

**294. Research Tutorial: Accelerator Physics (2 or 4 units).** Lecture, one hour; discussion, two hours. Required of each graduate student doing research in this field. Seminar and discussion by faculty, postdoctoral fellows, and graduate students on topics of current interest in accelerator physics. May be repeated for credit. S/U grading.

**295. Research Tutorial: Solid Earth Physics (2 or 4 units).** Required (or course 292 if appropriate) of each graduate student doing research in this field, ordinarily in second or third year. Seminar and discussion on solid earth physics. May be repeated for credit. S/U grading.

**296A-296Z. Research Topics in Physics (2 units each).** Prerequisite: consent of instructor. Advanced study and analysis of current topics in physics. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. S/U grading.

**296C. Condensed Matter/Low Temperature/Acoustics.**

**296H. High-Energy and Intermediate-Energy Physics.**

**296P. Plasma Physics.**

**296T. Theoretical Elementary Particle Physics.**

**M297. Research Tutorial: Astroparticle Physics (2 or 4 units).** (Same as Astronomy M297.) Lecture, one hour; discussion, two hours. Required of each graduate student doing research in this field. Seminar and discussion by faculty, postdoctoral fellows, and graduate students on topics of current interest in astroparticle physics. May be repeated for credit. S/U grading.

**298. Research Tutorial: Experimental Elementary Particle Physics (2 or 4 units).** Limited to six students. Required of each graduate student doing research in this field, ordinarily during second or third year. Seminar and discussion by staff and students on current problems in experimental elementary particle physics. May be repeated for credit. S/U grading.

**299. Research Tutorial: Nuclear Physics (2 or 4 units).** Required of each graduate student doing research in this field, ordinarily during second or third year. Seminar and discussion on nuclear physics by staff and students, in both experiment and theory. May be repeated for credit. S/U grading.

**370. Teaching Physics.** Prerequisite: consent of instructor. Study of physics laboratory experiments and demonstrations available today for secondary school and community college physics courses. Part of Master of Arts in Teaching (M.A.T.) program but open to other interested students.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495. Teaching College Physics (2 units).** Lecture/discussion (five or more one-hour meetings during term, plus intensive training week at beginning of Fall Quarter). Required of all new teaching assistants. Special course for teaching assistants designed to deal with problems and techniques of teaching college physics. Ideas and techniques learned are applied and evaluated in the sections of each teaching assistant. May be repeated for credit. S/U grading. (F)

**596. Directed Individual Studies (2 to 12 units).** May be repeated for credit. S/U grading.

**597. Preparation for Master's Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 8 units).** May be repeated. S/U grading.

**598. Master's Thesis Research and Writing (2 to 8 units).** May be repeated. S/U or letter grading.

**599. Ph.D. Research and Writing (8 to 12 units).**

## Physiological Science

2834 Slichter Hall, (310) 825-3891

### Professors

R. James Barnard, Ph.D., *Vice Chair*  
Scott H. Chandler, Ph.D. (*Neurosciences*)  
V. Reggie Edgerton, Ph.D. (*Neuromuscular Physiology*)  
Gordon L. Fain, Ph.D. (*Neurosciences*)  
Jack L. Feldman, Ph.D. (*Neurosciences*), *Chair*  
Robert J. Gregor, Ph.D. (*Biomechanics*)  
Judith L. Smith, Ph.D. (*Neuromotor Control; Distinguished Teaching Award*)

### Professors Emeriti

Camille Brown, Ed.D.  
Bryant J. Cratty, Ed.D.  
Glen H. Egstrom, Ph.D.  
Gerald W. Gardner, Ph.D.  
Donald T. Handy, Ed.D.  
Valerie V. Hunt, Ed.D.



Jack F. Keogh, Ed.D.  
Wayne W. Massey, Ph.D.  
Ben W. Miller, Ph.D.  
Norman P. Miller, Ed.D.  
Laurence E. Morehouse, Ph.D.

#### Associate Professors

Jeffrey C. Smith, Ph.D., *in Residence*  
(Neurosciences)  
James G. Tidball, Ph.D. (*Muscle Cell Biology*)  
Marjorie E. Latchaw, Ph.D., *Emerita*

#### Assistant Professors

David L. Glanzman, Ph.D. (*Neurosciences*)  
Scott A. Henderson, Ph.D. (*Muscle Cell Biology*)

#### Lecturers

Alan Garfinkel, Ph.D.  
George J. Salem, Ph.D.  
Eric Sternlicht, Ph.D.  
Jack E. Turman, Jr., Ph.D.  
William C. Whiting, Ph.D.

## Scope and Objectives

The cornerstone of the physiological science curriculum is vertebrate physiology, with emphases on integrative functions. The research and educational programs focus on integrative physiology at several levels of organization from molecules to living organisms, microscopic structures to macroscopic organization, and cellular properties to organ functions. Students receive comprehensive instruction in all areas of physiological science, while elective courses reflect faculty research expertise, including cardiopulmonary function and adaptation, musculoskeletal physiology, cell biology, biomechanics, neural control of movement and homeostasis, and neural integration and sensory transduction.

## Bachelor of Science Degree

### Preparation for the Major

**Required:** Physiological Science 17A, 17B, 17C; Biology 9, 100A; Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL, 132A, 132B/132BL; Mathematics 3A, 3B, 3C (or 31A, 31B, 32A); Physics 6A, 6B, 6C (or 8A, 8B, 8C); one introductory statistics course.

Preparation courses outside the department may be taken for a letter grade or on a P/NP basis; Physiological Science 17A, 17B, and 17C must be taken for a letter grade. All preparation courses must be passed with a grade of C- or better or a P and must be completed with an overall grade-point average of 2.0 or better. If you receive a grade of D, F, or NP in two preparation courses or in the repetition of a single preparation course, you are subject to dismissal from the major.

Transfer students with 80 or more units must complete the following courses prior to admission: one year of general chemistry with laboratory, one year of calculus, one calculus-based physics course. A second calculus-based physics course and/or one cellular biology course are strongly recommended.

Transfer students are required to take Physiological Science 17A, 17B, and 17C at UCLA because these courses emphasize the movement aspects of anatomy needed in preparation for upper division physiological science courses.

Transfer credit for UCLA Extension coursework and for any departmental courses (including courses 17A, 17B, 17C) is subject to prior approval by the department; consult the undergraduate counselor before enrolling in any courses for the major.

### The Major

**Required:** Physiological Science 111A (or M180A-M180B), 111B-111C, Chemistry and Biochemistry 153A, 153L.

A total of four upper division physiological science electives (16 units) is required. Four units of course 199 or 199H may be applied toward the elective requirement. Courses 193, 196A-196B, and graduate courses at the 300, 400, or 500 level may not be applied toward this requirement. One graduate course at the 200 level may be applied toward the elective requirement by petition.

All required and elective courses must be taken for a letter grade, and a C average must be maintained in all upper division courses taken for the major.

### Honors Program

The honors program provides exceptional students with the opportunity for individual research culminating in an honors thesis. Requirements for admission include a 3.0 overall grade-point average and a 3.2 GPA in preparation for the major courses. After completion of all requirements and with the recommendation of the faculty adviser, the undergraduate affairs committee confers departmental honors at graduation.

### Graduate Study

The department offers Master of Science and Doctor of Philosophy degrees. Current faculty research specializations focus on mechanisms of musculoskeletal and cardiac development and adaptation, neural control mechanisms, biomechanics, and neural integration and sensory transduction.

### Admission

Applicants for graduate study are expected to have completed an undergraduate degree in the biological or physical sciences. At the time of admission, you should have completed one year of coursework in each of the following: biology, calculus, inorganic chemistry, organic chemistry/biochemistry, and physics. A grade-point average of at least 3.0 (B) in all upper division undergraduate coursework is required, as are scores from the Graduate Record Examination (GRE). A departmental faculty committee considers applicants on the following bases: (1) prior scholastic perfor-

mance, (2) three letters of recommendation, and (3) applicant's statement of purpose, which should include (a) relevant background or preparation, (b) field of emphasis, specific study interests, and type of research sought, (c) expectations, goals, degree objective, (d) the names of departmental faculty members whose research area parallels the study interest.

A list of faculty names and research interests is available from the Department of Physiological Science, 2834 Slichter Hall, UCLA, Los Angeles, CA 90024-1568. Applicants are encouraged to communicate directly with the faculty; personal interviews are required for Ph.D. applicants.

Applications for all terms must be submitted by Fall Quarter deadlines, since applications for all terms are reviewed only in January/February each year.

## Master of Science Degree

### Course Requirements

The Master of Science in Physiological Science requires nine courses, including a second-level statistics or research design course. A minimum of six of the nine courses must be graduate-level (200) courses, toward which two 596 courses may be applied. Courses 597 and 598 may not be applied toward any of the course requirements for the degree; however, there is no limit on the number of times you may enroll in course 597 or 598.

Coursework is selected by you and your advisory committee, with approval by the graduate affairs committee. All coursework must be completed by the end of your second year.

### Thesis Plan

If you elect the thesis plan for the master's degree, you must report the results of an original research investigation. Under the guidance of the thesis committee, you must propose a problem area or outline of study, conduct original research in a specific area, and report the results. With committee approval, you may submit either a thesis manuscript or a manuscript suitable for publication.

### Comprehensive Examination Plan

Students who elect this plan must achieve a passing mark on a comprehensive examination. The general purpose of the plan is that students acquire a thorough understanding of a reasonably broad problem area, which must be specified in consultation with an adviser. The selection of courses in the department and the related field must be pertinent to the problem area, and justification is required with the petition for advancement to candidacy.

While a written examination is required, the committee may use additional means to evaluate your competency.

If you fail the comprehensive examination, you may not repeat it until the following term. Only one repetition is allowed.

## Ph.D. Degree

The goal of the department is to produce Ph.D. candidates who demonstrate academic breadth in physiological science and have the ability to design, perform, and conduct high-quality academic research that leads to the successful defense of a dissertation.

## Course Requirements

Eleven courses are required for the doctoral degree, including eight graduate courses in your area of specialization, one graduate-level course on a topic outside your research area, and two courses in methods of experimental design or analysis or in research methods. One course requirement may be met by enrolling in two terms of Physiological Science 290. Two 596 courses may be applied toward the degree requirements.

Coursework is selected by you and your advisory committee, with approval by the graduate affairs committee.

## First- and Second-Year Doctoral Review

At the end of your first and second years, you meet with your advisory committee which reviews your progress and makes recommendations to the graduate affairs committee concerning your doctoral coursework. At the end of your second year, you prepare a progress report for the same committee detailing your laboratory research experience and any abstract presentations or publications.

## Teaching Experience

You must complete two terms as a teaching assistant. All teaching evaluations become a permanent part of your departmental record.

## Qualifying Examinations

Your breadth of knowledge is demonstrated when you pass the two-day written preliminary examination at the end of your first year that tests your knowledge of and ability to interpret information on physiological systems. The examination, administered in the week preceding Fall Quarter of your second year, is scored (1) passed at the Ph.D. level of achievement, (2) passed at the master's level of achievement, requiring you to pass a second examination at the Ph.D. level within the following six months, or (3) failed, requiring you to leave the program. If you receive a master's level of achievement score, you may leave the Ph.D. program and complete the M.S. degree.

After successfully passing the departmental written qualifying examination, and before advancement to candidacy, the University Oral Qualifying Examination is conducted by your doctoral committee and must be passed by the end of your fourth year of study. You must present a written research proposal of your intended dissertation project to your advisory committee and one member of the graduate

affairs committee at least two weeks prior to the examination. You are expected to have formulated a research plan, have demonstrated appropriate research capability, and be knowledgeable of the relevant research literature. If you do not pass, the examination may be rescheduled once at the discretion of your doctoral committee.

## Dissertation/Final Oral Examination

After advancement to candidacy, you must complete and submit a dissertation which meets the approval of your doctoral committee. Your committee also determines whether a final oral examination (a defense of your dissertation) is required.

## Lower Division Courses

**3. Introduction to Human Physiology.** Lecture, three hours; discussion, one hour. Not open to physiological science majors. Courses 3 and 5 may be taken independently, concurrently, or in either sequence. Presentation of integrative approach to basic anatomy and physiology of major organs and organ systems. P/NP or letter grading.

Mr. Barnard, Mr. Sternlicht

**5. Issues in Human Physiology: Diet and Exercise.** (Formerly numbered Kinesiology 5.) Lecture, three hours; discussion, one hour. Not open to physiological science majors. Basic introduction to principles of human biology, with special emphasis on roles that exercise and nutrition play in health, and prevention and management of such illnesses as hypertension, diabetes, and heart disease.

Mr. Barnard, Mr. Sternlicht

**6. The Human Machine: Physiological Processes.** Prerequisite: Physics 3A or equivalent. Not open to physiological science majors. General introduction to human musculoskeletal, cardiovascular, and respiratory systems and their function, with special emphasis on mechanical and physiological aspects of homeostasis and environmental interaction. Application of physical principles in selected areas of biomechanics, hemodynamics, ergonomics, orthopedics, and robotics. P/NP or letter grading.

Mr. Gregor, Mr. Salem, Mr. Whiting

**13. Introduction to Human Anatomy (6 units).** (Formerly numbered Kinesiology 13.) Lecture, four hours; laboratory, four hours. Not open to physiological science majors; any combination of courses 13 and 17A or 17B or 17C is equivalent to eight units. Structural survey of human body, including skeletomuscular, nervous, circulatory, respiratory, digestive, and genitourinary systems. Laboratory includes examination of human cadaver specimens.

Mr. Whiting (Sp)

**17A. Musculoskeletal Anatomy and Biomechanics (5 units).** (Formerly numbered Kinesiology 17A.) Lecture, three hours; laboratory, four hours. Prerequisites: Physics 6A, physiological science major. Thorough study of skeletal, articular, muscular, and connective tissue systems, including components of biomechanical function and physiological adaptation. Some emphasis on musculoskeletal structure to movement capabilities. Laboratory includes examination of prosected human cadaver specimens.

Mr. Gregor, Mr. Salem (F)

**17B. Human Visceral Anatomy (2 units).** (Formerly numbered Kinesiology 17B.) Lecture, two hours; laboratory, one hour. Prerequisites: course 17A, physiological science major. Structural survey of human circulatory, respiratory, digestive, urinary, and reproductive systems. Laboratory includes examination of human cadaver specimens.

Mr. Gregor, Mr. Salem (W)

**17C. Human Neuroanatomy (2 units).** (Formerly numbered 17B.) Lecture, two hours; laboratory, one hour. Prerequisites: course 17A, physiological science major. Introduction to structure of human nervous system, with emphasis on cellular neuroanatomy, chemical neuroanatomy, regional neuroanatomy, and basic neuronal circuits. Laboratory includes examination of human cadaver specimens.

Ms. Smith, Mr. Turman (W)

**90. Introduction to Physiological Science (2 units).** (Formerly numbered Kinesiology 90.) Lecture, one hour; discussion, one hour. Prerequisite: freshman or sophomore standing. Introduction to current topics in physiological science by a team of departmental faculty members. P/NP grading.

Mr. Whiting (W)

## Upper Division Courses

**111A-111B-111C. Foundations in Physiological Science (6 units each).** (Formerly numbered Kinesiology 111A-111B-111C.) Lecture, four hours; laboratory, two hours:

**111A.** Prerequisites: course 17B, Biology 9, Chemistry 132A, Physics 6B. Introduction to principles of neurophysiology: cellular and systems neuroscience, including factors controlling membrane excitability, neuronal circuits, sensorimotor regulation, special senses, cortical functions, and neuronal plasticity.

Mr. Chandler, Mr. Glanzman, Ms. Smith (Sp)

**111B.** Prerequisites: course 111A or M180A, Chemistry 132B. Principles of skeletomuscular and cardiopulmonary physiology.

Mr. Feldman, Mr. Henderson, Mr. Tidball (F)

**111C.** Prerequisites: course 111A or M180A, Chemistry 153A. Principles of gastrointestinal, renal, endocrine, and reproductive physiology.

Mr. Fain (W)

**133. Exercise Physiology.** (Formerly numbered Kinesiology 133.) Lecture, three hours; laboratory, two hours. Prerequisite: course 111C. Physiological responses and adaptations to acute and chronic exercise.

Mr. Henderson, Mr. Sternlicht

**C135. Dynamical Systems Modeling of Physiological Processes (5 units).** Lecture, four hours. Prerequisite: course 111B. Examination of art of making and evaluating dynamical models of physiological systems and of dynamical principles inherent in physiological systems. Concurrently scheduled with course C235.

Mr. Garfinkel

**136. Exercise and Cardiovascular Function.** (Formerly numbered Kinesiology 136.) Prerequisite: course 133. Consideration of acute and chronic effects of exercise in diagnosis, prevention, and treatment of cardiovascular disorders.

Mr. Barnard, Mr. Sternlicht

**C137. Molecular Mechanisms of Muscle Growth and Adaptation.** (Formerly numbered 137.) Prerequisites: course 111B, Biology 100A. Intracellular regulation of muscle gene expression during myocyte development and adaptation to trophic stimuli. Concurrently scheduled with course C237.

Mr. Henderson

**138. Neuromuscular Physiology and Adaptation.** (Formerly numbered Kinesiology 138.) Prerequisites: course 111B, Chemistry 153A. Cellular responses to acute and chronic exercise and environmental states of neuromuscular system.

Mr. Edgerton

**142. Sensorimotor Physiology.** (Formerly numbered Kinesiology 142.) Lecture, three hours; laboratory, two hours. Prerequisite: course 111A or M180A. Not open to students with credit for former Kinesiology 126. Neurophysiological principles governing control of limb movements, including regulation by spinal cord circuits, cerebellum, basal ganglia, and sensorimotor cortices.

Mr. Chandler, Ms. Smith

**C143. Neuromotor Control of Posture and Movement.** (Formerly numbered Kinesiology C143.) Prerequisite: course 142 or M180B. Examination of theories for neuromotor control of posture, walking, and voluntary arm movements. Concurrently scheduled with course C243.

Ms. Smith

**C144. Neural Control of Physiological Systems.** (Formerly numbered 144.) Prerequisite: course 111B or M180B. Role of central nervous system in control of respiration, circulation, sexual function, and bladder control. Material for each section to be developed by combination of lecture and open discussion. Concurrently scheduled with course C244. Mr. Feldman

**C145. Neural Mechanisms Controlling Movement.** (Formerly numbered Kinesiology 145.) Prerequisite: course 111A or M180A. Examination of central nervous system organization required for production of complex movements such as locomotion, mastication, and swallowing. Concurrently scheduled with course C245. Mr. Chandler

**147. Neurobiology of Learning and Memory.** (Formerly numbered Kinesiology 147.) Prerequisite: course 111A or M180A. Changes in central nervous system that accompany learning, with emphasis on cellular mechanisms. Mr. Glanzman

**148. Advanced Neurophysiology.** (Formerly numbered Kinesiology 148.) Prerequisite: course 111A or M180A. Advanced treatment of selected topics in cellular and systems neurophysiology. Mr. Smith

**151. Limb Dynamics.** (Formerly numbered Kinesiology 151.) Lecture, three hours; laboratory, two hours. Prerequisite: course 111B. Not open to students with credit for former Kinesiology 122. Kinematic and kinetic principles underlying limb movements. Mr. Gregor

**C152. Skeletal-Arthrodiol Adaptation.** (Formerly numbered Kinesiology C152.) Prerequisite: course 111B. Anatomical, physiological, and mechanical characteristics of skeletal and diarthrodiol joint structures in normal and abnormal loading environments. Concurrently scheduled with course C252. Mr. Whiting

**153. Dissection Anatomy.** (Formerly numbered Kinesiology 153.) Lecture, two hours; laboratory, six hours. Prerequisites: course 111B, departmental application. Study and dissection of upper and lower extremities of human cadavers; dissection of thorax and abdomen limited to musculature and neurovascular supply. Mr. Salem

**155. Development and Structure of Musculoskeletal Soft Tissue.** (Formerly numbered Kinesiology 155.) Prerequisite: course 111B. Development, histology, cell biology, and biochemistry of musculoskeletal soft tissues. Integration of knowledge of muscle and connective tissue structure and function on each of these levels to understand organization and physiological behavior of the intact system. Mr. Tidball

**M173. Anatomy and Physiology of Sense Organs.** (Same as Biology M173.) Lecture, three hours; discussion, one hour. Prerequisites: courses 111A (or Biology 171) or M180A-M180B (or Biology M175A-M175B) or equivalent. Structure and function of sense organs. Adoption of quantitative and comparative approach to provide insight into evolution of sense organs in both invertebrates and vertebrates. Mr. Fain, Mr. Narins, Mr. Simmons

**M180A-M180B-M180C. Neuroscience: From Molecules to Mind (5 units each).** (Formerly numbered Kinesiology M180A-M180B-M180C.) (Same as Biology M175A-M175B-M175C. Neuroscience M101A-M101B-M101C, and Psychology M117A-M117B-M117C.) Lecture, four hours; discussion, one hour.

**M180A. Cellular Mechanisms.** Prerequisites: Biology 9, Chemistry 132A, Physics 3B or 6B or 8C; any combination of Physiological Science 111A and M180A is equivalent to eight units. Cellular physiology, pharmacology, molecular biology, and development of nervous system. Mr. Feldman, Mr. Narins (F)

**M180B. Integrative Mechanisms.** Prerequisite: course 111A (or Biology 171 or Psychology 115) or M180A (or Biology M175A or Neuroscience M101A or Psychology M117A); any combination of course M180B and former Kinesiology 126 is equivalent to 10 units. Central and reflex mechanisms of homeostasis, sensory information processing, and motor control. Mr. Schein, Ms. Smith (W)

**M180C. Neural Bases of Behavior.** Prerequisite: course 111A (or Biology 171 or Psychology 115) or M180B (or Biology M175B or Neuroscience M101B or Psychology M117B). Neural mechanisms underlying motivation, learning, and cognition. Mr. Gallistel (Sp)

**191A-191Z. Proseminars: Physiological Science.** (Formerly numbered Kinesiology 191A-191Z.) Prerequisite: upper division standing. Limited to 15 students. Advanced study of special topics. May be repeated for credit with topic change.

**193. Field Studies in Physiological Science.** (Formerly numbered Kinesiology 193.) Lecture, one hour; fieldwork, six to eight hours. Prerequisites: senior standing, departmental application. Supervised field studies in specific careers related to physiological science. May not be repeated for credit and may not be applied toward elective requirements for the major. P/NP grading. (Sp)

**195. Honors Research in Physiological Science (2 units).** Lecture, one hour; discussion, one hour. Prerequisite: physiological science honors program standing. Preparation for honors thesis (courses 199HA, 199HB). Instruction in principles of scientific method and writing; critique of current journal articles and research projects. Students present individual research proposal with background literature. P/NP grading. Mr. Gregor (W)

**196A-196B. Laboratory Practicum in Physiological Science (2 units each).** (Formerly numbered Kinesiology 196A-196B.) Laboratory, four hours. Prerequisites or corequisites: course 153, departmental application. Supervised practicum and training for advanced students who serve as undergraduate assistants in basic anatomy course in preparation of laboratory materials and innovative projects. May not be applied toward elective requirements for the major. Mr. Salem, Mr. Whiting

**197A-197Z. Variable Topics in Physiological Science.** (Formerly numbered Kinesiology 197A-197Z.) Prerequisite: upper division standing. Variable topics courses which cover specific subjects of special interest. May be repeated for credit with topic change.

**199. Special Studies in Physiological Science.** (Formerly numbered Kinesiology 199.) Prerequisites: physiological science major with advanced junior standing and 3.0 GPA in the major, or senior standing, courses 111A-111B, consent of instructor and department chair. Directed independent research with a faculty member. *Course application (available in 2834 Slichter Hall) must be submitted to the chair during first week of classes. Only four units of course 199/199H may be applied toward elective requirements for the major.*

**199HA. Honors Thesis.** (Formerly numbered Kinesiology 199HA.) Prerequisites: courses 111A-111B, physiological science honors program standing. Directed independent research for departmental honors with a faculty member, involving definition of research topic and extensive reading and research in the field of proposed honors thesis. In Progress grading (credit to be given only on completion of course 199HB).

**199HB. Honors Thesis.** (Formerly numbered Kinesiology 199HB.) Prerequisite: course 199HA. Continued reading and research that culminate in final honors thesis. Only four units of course 199/199H may be applied toward elective requirements for the major.

**199HC. Advanced Studies for Honors Thesis.** Prerequisite: course 199HB. Not required for honors thesis. Additional course to provide further research opportunities for departmental honors students.

## Graduate Courses

**M202. Cellular Neurophysiology.** (Same as Neuroscience M202.) Lecture, three hours; discussion, one hour. Prerequisites: course 111A or M180A or Physics 6B or equivalent, Biology 166 or 171 or equivalent. Advanced course in cellular physiology of neurons. Action and membrane potentials, channels and channel blockers, gates, ion pumps and neuronal homeostasis, synaptic receptors, drug-receptor interactions, transmitter release, modulation by second messengers, and sensory transduction. Mr. Fain

**M205. Behavioral and Systems Neuroscience.** (Same as Neuroscience M205 and Psychology M205Z.) Lecture, three hours. Prerequisites: Neuroscience M201, M202, M203, and M204, or consent of instructor. Introduction to fundamentals of behavioral and systems neuroscience, with emphasis on role of behavioral analysis in understanding the functioning of nervous system and identifying anatomical circuits, cell physiological processes, and molecular mechanisms that mediate behaviorally defined functions. Mr. Feldman, Mr. Gallistel

**206. Metabolism of Organ Systems Affected by Exercise.** (Formerly numbered Kinesiology 206.) Prerequisite: Chemistry 132B/132BL. Key regulatory mechanisms of metabolism involved in exercise response and adaptation. Mr. Sternlicht

**211. Exercise Cardiovascular Physiology.** (Formerly numbered Kinesiology 211.) Prerequisite: Physiology 201A. Attention to cardiovascular adaptations to acute exercise as well as adaptations associated with regular exercise training. Mr. Barnard, Mr. Henderson

**M212. Introduction to Cellular Physiology and Biophysics (6 units).** (Same as Biology M237 and Physiology M212.) Lecture, five hours. Prerequisite: graduate standing; for upper division undergraduates: consent of instructor. Development of fundamental physiological and biophysical concepts associated with all membranes, membrane channels and transporters, membrane potential, membrane excitability, electrical signal transmission and transduction, and muscle contraction and their application to study of basic cellular processes. Emphasis in laboratory on development of skills using computer programming languages, spreadsheets, and graphics for modeling and analysis of cellular processes.

**M213. Integrative Physiology (6 units).** (Same as Physiology M213.) Lecture, four hours; tutorial, one hour. Prerequisite: graduate standing; for upper division undergraduates: consent of instructor. Advanced treatment of fundamental human organ systems. Topics include homeostatic regulation and cardiopulmonary, renal, gastrointestinal, and muscle function, with emphasis on molecular, cellular, and physical principles underlying integrative behavior of these systems. Mr. Feldman, Mr. Wright

**C235. Dynamical Systems Modeling of Physiological Processes (5 units).** (Formerly numbered Kinesiology 235.) Lecture, four hours. Prerequisite: consent of instructor. Examination of art of making and evaluating dynamical models of physiological systems and of dynamical principles inherent in physiological systems. Concurrently scheduled with course C135. Mr. Garfinkel

**C237. Molecular Mechanisms of Muscle Growth and Adaptation.** Prerequisite: consent of instructor. Intracellular regulation of muscle gene expression during myocyte development and adaptation to trophic stimuli. Concurrently scheduled with course C137. Mr. Henderson

**M240. Neural Systems for Motor Control.** (Formerly numbered Kinesiology M240.) (Same as Neuroscience M262.) Prerequisite: course C143 or consent of instructor. Advanced topics on neural mechanisms related to control of posture, locomotion, and highly skilled arm and hand movements. Emphasis on role of movement-dependent feedback at spinal segments and within sensorimotor areas of cerebral cortex, with respect to modification of motor output. Ms. Smith

**C243. Neuromotor Control of Posture and Movement.** (Formerly numbered Kinesiology C243.) Prerequisite: course 142 or M180B. Examination of theories for neuromotor control of posture, walking, and voluntary arm movements. Concurrently scheduled with course C143. Ms. Smith

**C244. Neural Control of Physiological Systems.** Prerequisite: consent of instructor. Role of central nervous system in control of respiration, circulation, sexual function, and bladder control. Material for each section to be developed by combination of lecture and open discussion. Concurrently scheduled with course C144. Mr. Feldman

**C245. Neural Mechanisms Controlling Movement.** Prerequisite: course 111A or M180A. Examination of central nervous system organization required for production of complex movements such as locomotion, mastication, and swallowing. Concurrently scheduled with course C145. Mr. Chandler

**M247. Neural Control of Cardiopulmonary Function.** (Formerly numbered Kinesiology M247.) (Same as Neuroscience M247.) Lecture, two hours; discussion, two hours. Prerequisites: courses 111A, 111B or 133 or 142 or M180A, M180B or equivalent. Cardiorespiratory homeostasis is accomplished via central nervous system (CNS) control of respiratory and circulatory pumping systems. Focus on CNS mechanism underlying (1) generation of respiratory rhythm, sympathetic and parasympathetic tone, (2) determination of patterns of motor outflow, and (3) responses to changes in behavioral state or afferent signals. Emphasis on critical reading of literature.

Mr. Feldman

**250A. Muscle Dynamics.** (Formerly numbered Kinesiology 250A.) Prerequisite: course 151. Integrated study of electrical and dynamic parameters of muscle-action, including topics in length-tension and force-velocity interrelationships; critical analysis of electromyographic and digital computer techniques.

Mr. Gregor

**250B. Musculoskeletal Mechanics.** (Formerly numbered Kinesiology 250B.) Prerequisites: course 151, Mathematics 3A, 3B. Mechanical parameters of moving human musculoskeletal system, including use of cinematographic, force platform, and digital computer techniques. Topics include biostatistics, biodynamics, and empirical data modeling.

Mr. Whiting

**C252. Skeletal-Arthrodial Adaptation.** (Formerly numbered Kinesiology C252.) Prerequisite: course 111B. Anatomical, physiological, and mechanical characteristics of skeletal and diarthrodial joint structures in normal and abnormal loading environments. Concurrently scheduled with course C152.

Mr. Whiting

**M260. Neuromuscular Factors in Movement Regulation.** (Formerly numbered Kinesiology M260.) (Same as Neuroscience M260.) Prerequisite: course 138 or consent of instructor. Interaction of neural and muscular factors in regulation of muscle fiber properties and importance of these properties in neural strategies of movement regulation. S/U or letter grading.

Mr. Edgerton

**M263. Neuronal Mechanisms Controlling Rhythmic Movements.** (Formerly numbered Kinesiology M263.) (Same as Neuroscience M263.) Prerequisite: course C145 or consent of instructor. Advanced topics on brainstem mechanisms responsible for controlling cyclic and stereotypic movements such as mastication and locomotion. Emphasis on cellular neurophysiology and interaction between neuronal networks. Introduction to primary literature and techniques used in these areas. Students expected to critically evaluate data and conclusions drawn.

Mr. Chandler

**290. Research Issues in Physiological Science (2 units).** (Formerly numbered Kinesiology 290.) Seminar. Prerequisite: consent of instructor. Discussion of current research issues. Topics selected by participants in class. Two 290 courses may be used to satisfy one seminar course requirement for graduate program.

**291A-291B-291C. Seminars: Cardiorespiratory Function and Adaptation (2 to 4 units each).** (Formerly numbered Kinesiology 291A-291B-291C.) Prerequisite: course M260 or consent of instructor. Selected topics on cardiorespiratory function and adaptation. Students required to present two-hour seminar.

Mr. Barnard, Mr. Henderson

**292A-292B-292C. Seminars: Biomechanics (2 to 4 units each).** (Formerly numbered Kinesiology 292A-292B-292C.) Prerequisites: courses 250A, 250B, consent of instructor. Selected topics in biomechanics of movement. Students required to present two-hour seminar.

Mr. Gregor

**293A-293B-293C. Seminars: Musculoskeletal Function and Adaptation (2 to 4 units each).** (Formerly numbered Kinesiology 293A-293B-293C.) Prerequisites: courses 138 and M260, or consent of instructor. Selected topics on muscular determinants of movement, metabolic aspects of exercise, and mechanics of connective tissue. Students required to present two-hour seminar.

Mr. Edgerton

**M294A-M294B-M294C. Seminars: Neural Control of Movement (2 to 4 units each).** (Formerly numbered Kinesiology M294A-M294B-M294C.) (Same as Neuroscience M265A-M265B-M265C.) Prerequisite: course M240 or M247 or M263 or consent of instructor. Selected topics on neural determinants of movement behavior. Students required to present two-hour seminar.

Mr. Chandler, Mr. Feldman, Ms. Smith

**M295A-M295B-M295C. Seminars: Cellular Neurosciences (2 to 4 units each).** (Same as Neuroscience M266A-M266B-M266C.) Prerequisite: course M202 or consent of instructor. Selected topics in sensory transduction, cellular integration, synaptic processing, central nervous system function, and learning. Students required to present two-hour seminar.

Mr. Fain, Mr. Feldman, Mr. Glanzman

**296AA-296ZZ. Research Seminars: Physiological Science (2 units each).** Prerequisite: consent of instructor. Review of literature, discussion of original research, and analysis of current topics in physiological science. May not be applied toward M.S. or Ph.D. course requirements. May be repeated for credit. S/U grading.

**297A-297B-297C. Seminars: Muscle Cell Biology (2 to 4 units each).** Prerequisite: consent of instructor. Selected topics in muscle cell biology. Students required to present two-hour seminar.

Mr. Tidball

**375. Teaching Apprentice Practicum (1 to 4 units).** (Formerly numbered Kinesiology 375.) Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495. In-Service Practicum for Teaching Assistants in Physiological Science (2 units).** (Formerly numbered Kinesiology 495.) Prerequisite: consent of instructor. Required of all teaching assistants. Supervised practicum in teaching laboratory courses in physiological science; material preparation and use of teaching aids. May not be applied toward degree requirements. S/U grading. (F)

**501. Cooperative Program (2 to 8 units).** (Formerly numbered Kinesiology 501.) Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Individual Studies for Graduate Students (2 to 8 units).** (Formerly numbered Kinesiology 596.) Petition signed by faculty sponsor, graduate adviser, and graduate affairs committee chair must be submitted prior to second week of class. Eight units may be taken for credit and may be applied toward minimum of six graduate courses required for M.S. Eight units may be applied toward the eight graduate courses required in area of specialization for Ph.D.

**597. Preparation for M.S. Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 16 units).** (Formerly numbered Kinesiology 597.) To be arranged with faculty member serving as student's comprehensive examination chair or doctoral committee chair. Course section identified by two-letter code using faculty member's initials (see department for code). May not be applied toward M.S. or Ph.D. course requirements. May be repeated as necessary. S/U grading.

**598. Research for and Preparation of M.S. Thesis (2 to 16 units).** (Formerly numbered Kinesiology 598.) To be arranged with faculty member serving as student's thesis committee chair. Course section identified by two-letter code using faculty member's initials (see department for code). May not be applied toward M.S. course requirements. May be repeated as necessary. S/U grading.

**599. Research for and/or Preparation of Ph.D. Dissertation (2 to 16 units).** (Formerly numbered Kinesiology 599.) Course section identified by two-letter code using faculty member's initials (see department for code). May not be applied toward Ph.D. course requirements. May be repeated as necessary. S/U grading.

## Political Science

4289 Bunche Hall, (310) 825-4331

### Professors

Joel D. Aberbach, Ph.D.  
Richard E. Ashcraft, Ph.D.  
Richard D. Baum, Ph.D.  
Leonard Binder, Ph.D., *Chair*  
L. Blair Campbell, Ph.D.  
James DeNardo, Ph.D.  
Leonard Freedman, Ph.D.  
Robert C. Fried, Ph.D.  
Jeffrey A. Frieden, Ph.D.  
Edward Gonzalez, Ph.D.  
Arnold Horelick, Ph.D.  
Michael D. Inrilligator, Ph.D.  
Shanto Iyengar, Ph.D.  
Edmond Keller, Ph.D.  
Andrzej Korbonski, Ph.D.  
Michael F. Lofchie, Ph.D.  
Karen J. Orren, Ph.D.  
Carole Pateman, D.Phil.  
John R. Petrocik, Ph.D.  
David C. Rapoport, Ph.D.  
Ronald L. Rogowski, Ph.D.  
Richard Rosecrance, Ph.D.  
Thomas Schwartz, Ph.D.  
David O. Sears, Ph.D.  
Richard L. Sklar, Ph.D. (*Distinguished Teaching Award*)  
Steven L. Spiegel, Ph.D.  
Arthur A. Stein, Ph.D.  
David O. Wilkinson, Ph.D.  
James Q. Wilson, Ph.D.  
E. Victor Wolfenstein, Ph.D.  
Charles E. Young, Ph.D.

### Professors Emeriti

Hans H. Baerwald, Ph.D.  
Irving Bernstein, Ph.D.  
David T. Cattell, Ph.D.  
Winston W. Crouch, Ph.D.  
Mattei Dogan, Docteur ès Lettres  
Ernest A. Engelbert, M.P.A., Ph.D.  
David G. Farrelly, Ph.D.  
J.A.C. Grant, Ph.D., LL.D. (*Distinguished Teaching Award*)  
Marvin Hoffenberg, M.A.  
Roman Kolkowicz, Ph.D.  
Dwaine Marvick, Ph.D.  
Charles R. Nixon, Ph.D.  
Foster H. Sherwood, Ph.D., LL.D.  
Duane E. Smith, Ph.D. (*Distinguished Teaching Award*)  
David A. Wilson, Ph.D.  
Ciro Zoppo, Ph.D.

**Associate Professors**

Barbara Geddes, Ph.D.  
 Franklin D. Gilliam, Jr., Ph.D.  
 Douglas S. Hobbs, Ph.D. (*Distinguished Teaching Award*)  
 Deborah Larson, Ph.D.  
 Raymond A. Rocco, Ph.D.  
 Leo M. Snowiss, Ph.D.  
 James Tong, Ph.D.  
 George Tsebelis, Ph.D.  
 Michael Wallerstein, Ph.D.  
 John Zaller, Ph.D.

**Assistant Professors**

Richard Anderson, Ph.D.  
 Kathleen Bawn, Ph.D.  
 Donald Chisholm, Ph.D.  
 Miriam A. Golden, Ph.D.  
 Susanne Lohmann, Ph.D.  
 Frances Rosenbluth, Ph.D.

**Scope and Objectives**

The undergraduate program in political science aims to provide understanding of basic political processes and institutions as these operate in different national and cultural contexts. It also covers the interaction between national states, the changing character of the relations between citizens and governments, and the values and criteria by which the quality of political life is judged. The program may be individually focused to serve the needs of the liberal arts major, the student seeking preparation for graduate work in political science, public administration, law, and other professional fields, and the student preparing for specialized roles in political and public organizations.

The graduate program leads to the Ph.D. degree in Political Science (a master's degree may be earned in the process of completing Ph.D. requirements). It is designed to give students a strong foundation in the discipline while enabling them to acquire additional skills for advancing their professional careers.

**Bachelor of Arts Degree**

Students officially admitted to the political science major for Fall Quarter 1993 and thereafter are expected to fulfill the requirements listed below. Continuing students admitted prior to Fall Quarter 1993 should consult the 1992-93 *UCLA General Catalog*.

**Prepolitical Science Major**

All students intending to major in political science must enroll as prepolitical science majors. After completion of preparation for the major courses, you need to petition to enter the major in the Undergraduate Office, 4256 Bunche Hall.

**Preparation for the Major**

**Required:** Four lower division courses from Political Science 10, 20, 30, 40, 50, 70, 80, including at least two courses from 10, 20, and 50. These lower division courses are prerequisites to upper division courses and 10, 20, 40, and 50 are required in those fields designated as your concentration or distribution field. You

must also take Political Science 6 or one of the following statistics courses: Anthropology 80, Economics 40, Geography 40, Psychology 41, Social Sciences 40, Sociology 18, Statistics 50.

You must complete all premajor courses with a 2.0 grade-point average by the time you attain 135 units. Admission to the major is granted only after successful completion of all lower division requirements.

**The Major**

**Required:** Ten upper division courses (40 units) selected from Political Science 102 through 199 taken for a letter grade. You are also required to complete four upper division courses (16 units) in one or two of the following social sciences: anthropology, communication studies (only Communication Studies 160), economics, geography, history, management (only Management 150, 190), psychology (except Psychology 115, 116), sociology. These courses must be taken for a letter grade. You are required to maintain a 2.0 overall grade-point average in all upper division political science courses.

Upper division political science courses are organized into four fields and two subfields: (I) political theory, (II) international relations, (III) American politics, with subfields (IIIa) public law and (IIIb) public organization and policy, and (IV) comparative politics.

In fulfilling the requirement of 10 upper division political science courses, you must satisfy the following:

- (1) A **concentration** in one field by completing the lower division course and at least four upper division courses in that field.
- (2) A **distribution** of the lower division course and two upper division courses in each of two other fields (four upper division courses). As specified below, restrictions apply to subfields IIIa and IIIb in satisfying the distribution requirement.
- (3) Two additional elective courses in political science to comprise the total of 10.

**Field Concentration Requirements** — The lower division course is prerequisite to upper division courses in those fields designated as the concentration field and the two distribution fields for majors. Specific requirements for the field concentration are as follows:

- (I) *Political Theory* — Political Science 10 and any four courses in Field I.
- (II) *International Relations* — Course 20 and any four upper division courses in Field II. Four units from courses 175A-175B may be applied as one of the four courses in Field II. Only one of the defense studies courses — 138A, 138B, 138C — may be applied toward the field concentration requirement.
- (III) *American Politics* — Course 40 and any four courses in Field III.

(IV) *Comparative Politics* — Courses 50, 168, and any three additional courses in Field IV. Course 115, 181, or 183C — but no more than one of them — may also be applied toward concentration in this field.

**Special Distributions in American Politics** — Students concentrating in American politics (Field III) may fulfill the major's distribution requirement by selecting one of the special American politics subfields — public law (IIIa) or public organization and policy (IIIb) — as one of the two distribution fields. You may not use both to fulfill this requirement.

Students not concentrating in American politics may elect distribution fields in the general area of American politics (Field III) and in one of the special subfields (IIIa or IIIb), or may satisfy the distribution requirement by taking the necessary courses in the two special subfields (IIIa and IIIb).

Course 70 and two upper division courses in public law are required for a special distribution in Subfield IIIa; course 80 and two upper division courses in public organization and policy are required for a special distribution in Subfield IIIb.

**Note:** No course may be applied toward both concentration and distribution requirements.

Also, courses 119, 139, 149, 169, 179, and 189 may be applied no more than twice toward the field concentration requirement. No more than three of these courses may be applied toward the major.

Courses 195A-195B-195C and 199 may not be applied toward either the concentration or distribution requirement.

**Undergraduate Seminars**

Each term the department offers a series of seminars (Political Science C197A-C197F) in each field. The prerequisites are two upper division courses in the field in which the seminar is offered, a 3.25 average at the upper division level in political science, or discretion of the instructor. These courses may be applied toward either the concentration or distribution requirement, and students who qualify are encouraged to take them.

**Honors Program**

The department honors program is open to seniors and to students who (1) have completed five upper division political science courses (two of which are in one field), (2) have a 3.5 grade-point average in upper division political science courses, and (3) are eligible for College of Letters and Science honors. You should have substantial experience in writing research papers and take at least one seminar course in the Political Science C197 series before you enter the honors program or course 195A.

Students wishing to qualify for graduation with departmental honors must complete the following: (1) courses 195A-195B-195C, in which a senior thesis is written; (2) eight upper division courses (excluding courses 119, 139,

149, 169, 179, and 189) distributed as follows: four courses in one field and four additional courses, two in each of two other fields; (3) four upper division courses in one or two of the social sciences other than political science.

## M.A. and Ph.D. Degrees

The aim of the graduate program is to train scholars in the discipline of political science. The department only accepts students seeking the Ph.D. degree (a master's degree may be earned as part of the process of completing the requirements for the Ph.D.).

## Admission

In addition to University minimum requirements, the department requires three letters of recommendation, scores of the General Test of the Graduate Record Examination (GRE), and a sample of your analytical writing skills (e.g., senior or M.A. thesis, term paper). Applicants are selected on the basis of perceived promise. Prospective students may write for departmental brochures to the Graduate Studies Office, Department of Political Science, 4289 Bunche Hall, UCLA, Los Angeles, CA 90024-1472. The department does not have an application form in addition to the one used by UCLA Graduate Application Processing. The deadline for receipt of all application materials is December 15 prior to the Fall Quarter in which you plan to register.

## Fields of Study

Five fields of study are offered to graduate students in the department: political theory, international relations, American politics, comparative politics, and formal theory and quantitative methods.

## Foreign Language or Research Methodology Requirement

There is no foreign language requirement for the M.A. degree.

Prior to advancement to candidacy for the Ph.D., you must fulfill one of the following requirements:

(1) **Foreign Language** — You may fulfill this requirement by obtaining a minimum score of 550 on a Graduate School Foreign Language Test (GSFLT). In languages for which no GSFLT is given, you may take a department examination to test your proficiency at a level comparable to a GSFLT score of 550. You may also satisfy the requirement by completing, with a grade of B or better, the final course in a two-year sequence of college courses in a foreign language.

(2) **Mathematics, Mathematical Economics, or Statistics** — You must complete either (a) a sequence of three courses in mathematics or mathematical economics at or above Mathematics 31A (Mathematics 38A, 38B may not be applied) or (b) a sequence of three courses in statistics at or above the level of Political Science

200B. Courses applied toward this requirement may not be applied toward any other course requirements.

You are required to pass the foreign language or methodology requirement before you can be advanced to candidacy for the Ph.D., but you may pass the requirement after the University Oral Qualifying Examination.

## Course Requirements

You must take Political Science 200A and 200AL, four courses in each of two major fields, one course in each of two minor fields, and four additional graded courses, including no more than two independent study courses. Fields decide which courses meet major and minor field requirements.

Of the 16 required courses, you must take at least seven during your first year of graduate study and 12 by the end of your second year.

**Transfer Students** — With the approval of the graduate adviser and the dean of the Graduate Division, graduate courses taken elsewhere may be applied toward departmental course requirements. The maximum number of such courses is six if you transfer to UCLA with a master's degree in political science and choose to forego another master's degree from UCLA. In all other cases, the maximum is four for courses taken at another UC campus and two for courses taken outside the UC system.

## Research Paper Requirement

You must submit two research papers, one by the beginning of your seventh term of graduate study, both by the beginning of your eighth term. You may also use these papers to meet course requirements. Each is graded not qualified, qualified, or qualified with distinction by a standing committee from all five fields. This committee may solicit the opinions of non-members. If a paper is graded not qualified, you may submit a revised version or another paper, once only, at most six months after your first submission.

For the Ph.D., you must receive at least a grade of qualified on both papers. You receive the M.A. degree after successful completion of 12 of the 16 required courses with an average grade of 3.0 or better and a grade of qualified or qualified with distinction on one paper.

Papers are evaluated for knowledge of subject, originality of ideas, and craftsmanship of research. They are also evaluated for conciseness — good ones may vary in length but are not expected to exceed 30 pages. They need not be publishable, but in their structure and format and in their coverage of topics and tasks are expected to resemble papers published in peer-reviewed journals of their fields. The committee evaluating your papers assumes that you have not devoted all of your research time to two papers but have selected

for submission, or for revision and submission, the best two from a portfolio of several seminar papers.

## Research Design and Oral Examination

By your tenth term of graduate study, you must present a research design for your dissertation in a seminar or colloquium. It need not be the version you submit for the University Oral Qualifying Examination.

You may take that examination after you have completed your course and paper requirements and written a dissertation proposal accepted by your research adviser. You must take it no later than your twelfth term of graduate study, and the examination committee must have your proposal at least two weeks before the examination. The committee judges the feasibility and worth of your project and your ability to undertake it, and may recommend changes in your research design.

After successful completion of the University Oral Qualifying Examination and the language or methodology requirement, you are advanced to candidacy. This must take place no later than your fifteenth term of graduate study.

## Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

## Dissertation/Final Oral Examination

Approval of a written dissertation by your doctoral committee constitutes the final requirement for the Ph.D. degree in Political Science.

The doctoral committee for each candidate decides whether or not a final oral examination should be required.

## Lower Division Courses

**1. Introduction to American Government.** Lecture, three hours; discussion, one hour. Introduction to principles and problems of government, with particular emphasis on national government in the U.S. Fulfills American History and Institutions requirement but does not fulfill a preparation for the major requirement.

**6. Introduction to Quantitative Research.** Lecture, three hours; discussion, one hour. Introduction to collection and analysis of political data, with emphasis on application of statistical reasoning to study of relationships among political variables. Use of computer as an aid in analyzing data from various fields of political science, among them comparative politics, international relations, American politics, and public administration.  
Mr. Petrocik, Mr. Zaller

**10. Introduction to Political Theory.** Lecture, three hours; discussion, one hour. Exposition and analysis of selected political theorists and concepts from Plato to the present.  
Mr. Ashcraft, Mr. Campbell, Mr. Rapoport

**20. World Politics.** Lecture, three hours; discussion, one hour. Required of all students concentrating in Field II. Introduction to problems of world politics.  
Mr. Spiegel

**30. Introduction to Political Economy.** Lecture, three hours; discussion, one hour. Introduction to political economy, especially application of economic reasoning to political and social phenomena. P/NP or letter grading.  
Mr. Frieden, Ms. Rosenbluth

**40. Introduction to Politics.** Lecture, three hours; discussion, one hour. Basic institutions and processes of democratic politics. Treatment of themes such as constitutionalism, representation, participation, and leadership coupled with particular emphasis on the American case. Mr. Gilliam, Mr. Schwartz

**50. Introduction to Comparative Politics.** Lecture, three hours; discussion, one hour. Comparative study of constitutional principles, governmental institutions, and political processes in selected contemporary states, with emphasis on major European governments. Mr. Lofchie, Mr. Sklar

**70. Supreme Court.** Lecture, three hours; discussion, one hour. Required of all students concentrating in Subfield IIIa. Introduction to American constitutional development and role of Supreme Court as interpreter of the U.S. Constitution. Reading of Supreme Court cases as well as various historical and current commentaries. Mr. Hobbs

**80. Introduction to Public Organization and Policy.** Lecture, three hours; discussion, one hour. Introduction to processes of policy formation and implementation. Exploration of emergence and performance of government bureaucracies and their role in American political process. P/NP or letter grading. Mr. Fried

**88A-88F. Lower Division Seminars.** Seminar, three hours. Prerequisite: freshman or sophomore standing. Opportunity to enhance writing, verbal, and reasoning skills. General introduction to a subfield of a major area, or intensive exploration of a particular theme or topic. Variable topics; consult *Schedule of Classes* for topics to be offered in a specific term. May not be repeated for credit except by students who receive a grade of C-, D, or F. P/NP or letter grading. **88A.** Political Theory; **88B.** International Relations; **88C.** Politics; **88D.** Comparative Politics; **88E.** Public Law; **88F.** Public Organization and Public Policy.

## Upper Division Courses

Prerequisite for all upper division courses: upper division standing or consent of instructor.

**102. Statistical Analysis of Political Data.** Prerequisite: course 6. Introduction to statistical inference. Topics include measures of central tendency, elementary probability theory, common probability distributions, least-squares and maximum likelihood estimation, confidence intervals and statistical tests, comparison of means, analysis of variance, and multiple regression and correlation. Statistical techniques and topics illustrated with applications to a variety of political data. Mr. Petrocik, Mr. Zaller

**104A-104B. Introduction to Survey Research.** Discussion, three hours. Prerequisite: course 6. Courses in fundamentals of survey research as a method. **104A.** Sampling theory and methods, writing of questions, questionnaire construction, and interviewing. Attitudes, attitude measurement, and attitude change. Participation in formulation of research problem. **104B.** Prerequisite: course 104A. Conducting a survey. Development of survey questionnaire, designing a sample, collecting interviews, maintaining quality control, and coding interviews for machine tabulation. Performance of computer-aided analysis of some part of data and submission of written report of that research.

**M105. Economic Models of Public Choice.** (Same as Economics M135.) Prerequisites: Economics 11, any lower division political science course other than Political Science 1, and junior/senior standing, or consent of instructor. Analysis of methods and consequences of arriving at collective decisions through political mechanisms. Topics include free-rider problem, voting and majority choice, demand revelation, and political bargaining. Ms. Bawn, Mr. Wallerstein

**M106. Economic Models of Political Conflict and Conflict Resolution.** (Same as Economics M136.) Prerequisites: Economics 11, any lower division political science course other than Political Science 1, and junior/senior standing, or consent of instructor. Biological, cultural, and organizational sources of political conflict. Role of threats, promises, commitments. Models of the onset and termination of conflict. Conduct of war: strategy and tactics.

## Field I: Political Theory

**111A-111B-111C. History of Political Thought.** Exposition and critical analysis of major political philosophers and schools:

**111A.** Ancient and Medieval Political Theory from Plato to Machiavelli. Mr. Campbell

**111B.** Early Modern Political Theory from Hobbes to Bentham. Mr. Ashcraft, Mr. Campbell

**111C.** Late Modern and Contemporary Political Theory from Hegel to the Present. Mr. Ashcraft, Mr. Wolfenstein

**112. Nature of the State.** Systematic analysis of modern concepts and problems of political association. Ms. Golden

**113. Problems in 20th-Century Political Theory.** Study and interpretation of theorists who have focused their analyses on social and political problems of the 20th century. Mr. Rocco

**114A-114B. American Political Thought:**

**114A.** Exposition and critical analysis of American political thinkers from the Puritan period to 1865.

**114B.** Prerequisite: course 114A or consent of instructor. Exposition and critical analysis of American political thinkers from 1865 to the present.

**115. Theories of Political Change.** Critical examination of theories of political change, relation of political change to changes in economic and social systems, and relevance of such theories for experience of both Western and non-Western societies. May be applied toward either Field I or IV. Mr. Lofchie

**116. Marxism.** Critical analysis of origins, nature, and development of Marxist political theory. Mr. Ashcraft, Mr. Wolfenstein

**117. Jurisprudence.** Development of law and legal systems; consideration of fundamental legal concepts; contributions and influence of modern schools of legal philosophy in relation to law and government. May be applied toward either Field I or Subfield IIIa.

**118. Political Violence.** Examination of one or several different uses of violence in the revolutionary process: demonstrations, mass uprisings, coup d'état, assassination, and terrorism. May be applied toward either Field II or IV. Mr. Rapoport, Mr. Tong

**119A-119Z. Special Studies in Political Theory.** Prerequisites: course 10, one additional course in Field I, consent of instructor. Intensive examination of one or more special problems appropriate to political theory. Sections offered on regular basis, with topics announced in preceding term. Courses 119, 139, 149, 169, 179, and 189 may be applied no more than twice toward field concentration requirement. No more than three of these courses may be applied toward the major.

## Field II: International Relations

**120. Foreign Relations of the U.S.** Lecture, three hours; discussion, one hour. Survey of factors and forces entering into formation and implementation of American foreign policy, with special emphasis on contemporary problems. Mr. Frieden, Ms. Larson, Mr. Rosecrance

**121. Studies in Formulation of American Foreign Policy.** Study of formation of American foreign policy with respect to individual cases. Consult *Schedule of Classes* for topics to be offered in a specific term. Mr. Spiegel

**122. World Order.** Lecture, three hours; discussion, one hour. Prerequisite: course 20. Study of problems of the international system seen as a community capable of cooperation and development. Mr. Wilkinson

**124. International Political Economy.** Prerequisite: course 20. Study of political aspects of international economic issues. Mr. Frieden

**125. Arms Control and International Security.** Arms control in context of international security in the nuclear age. Nuclear arms race; relationship between deterrence doctrines and nuclear war; roles of technology and ideology; nuclear proliferation; outer space.

**126. Peace and War.** Prerequisites: courses 6, 20. Theory and research on causes of war and conditions of peace. Ms. Larson, Mr. Wilkinson

**127A-127B. Atlantic Area in World Politics:**

**127A.** Western Europe. External relations of United Kingdom, West Germany, France, Italy, and other European members of NATO, in regard to European security in context of the Atlantic Alliance.

**127B.** U.S. and Europe. Prerequisite: course 127A or consent of instructor. Relations between the U.S. and Western European members of the Atlantic Alliance, in context of U.S./Soviet relations.

**128A-128B. Soviet Sphere in World Politics.** Prerequisite: course 20. Course 128A or consent of instructor is prerequisite to 128B. Contemporary survey of foreign policies and aspirations of the Soviet Union and other states in Soviet bloc; analysis of content and effects of Communist doctrine affecting relations between Soviet and democratic spheres. Mr. Anderson, Mr. Korbonksi

**129. Comparative Foreign Economic Policy.** Examination of foreign trade, monetary, and investment policies of the U.S., Japan, France, and Federal Republic of Germany since 1945.

**130. Politics of Latin American Economic Development.** Interaction of international and domestic factors in political and economic evolution of Latin America. Mr. Frieden

**131. Latin American International Relations.** Prerequisite: course 20. Major problems of Latin American international relations and organization in recent decades. Mr. Gonzalez

**132A-132B. International Relations of the Middle East:**

**132A.** Prerequisite: course 20. Contemporary regional issues and conflicts, with particular attention to inter-Arab politics, Arab-Israeli problem, and Persian Gulf area. Mr. Binder

**132B.** Role of the great powers in the Middle East, with emphasis on American, Soviet, and West European policies since 1945. Mr. Binder

**133. International Relations of Sub-Saharan Africa.** Contemporary regional issues and conflicts; foreign policies of African states; role of external powers. Mr. Keller, Mr. Lofchie, Mr. Sklar

**134. Foreign Policy Decision Making and Tools of Statecraft.** Prerequisite: course 120 or consent of instructor. Contrasts purposive and process models of individual and group decision making. Impact of strategic interaction and situational factors on foreign policy decision making. Implications for policy choice of tools of statecraft (i.e., threats/promises, military/economic/diplomacy). P/NP or letter grading. Mr. Stein

**135. International Relations of China.** Prerequisite: course 20. Relations of China with its neighbors and the other powers, with emphasis on contemporary interests and policies of China vis-à-vis the U.S. and Soviet Union. Mr. Baum

**136. International Relations of Japan.** Prerequisite: course 20. Foreign policies of Japan and interests and policies of other countries, particularly the U.S., as they relate to Japan. Ms. Rosenbluth

**137A-137B. International Relations Theory:**

**137A.** (Formerly numbered C137A.) Examination of various theoretical approaches to international relations. P/NP or letter grading.

**137B.** Alternative approaches to analysis of international politics and their application to historical and contemporary cases. Mr. Stein

**138A-138B-138C. Defense Studies.** Prerequisite: course 20:

**138A.** Defense Strategy and Policies. Analysis of national and international security problems in the nuclear era, with special emphasis on the U.S.

**138B.** Conduct of Modern War. Study of recent and contemporary wars, with special emphasis on political and strategic problems.

**138C.** Military Policy and Organization. Study of institutional and policy framework in the national military field. May be applied toward either Field II or Subfield IIIb.

**139A-139Z. Special Studies in International Relations.** Prerequisites: two courses in Field II, or course 20 and one course in Field II, and consent of instructor. Intensive examination of one or more special problems appropriate to international relations. Sections offered on regular basis, with topics announced in preceding term. Courses 119, 139, 149, 169, 179, and 189 may be applied no more than twice toward field concentration requirement. No more than three of these courses may be applied toward the major:

**M139A.** Political and Economic Issues in the Proliferation of Nuclear Weapons. (Same as Economics M103A.) Interdisciplinary approach to the problem of nuclear proliferation. Economic aspects of acquisition of nuclear weapons and economic aspects of nuclear energy treating technological, bargaining, and stability issues. Mr. Intriligator (alternate years)

Also see courses 175A-175B

**Field III: American Politics**

**M140. Political Psychology.** (Same as Psychology M138.) Prerequisite: Psychology 10. Examination of political behavior, political socialization, personality and politics, racial conflict, and psychological analysis of public opinion on these issues.

Mr. Sears, Mr. Sidanius

**141. Public Opinion and Voting Behavior.** Lecture, three hours; discussion, one hour. Study of character and formation of political attitudes and public opinion. Role of public opinion in elections, relationship of political attitudes to the vote decision, and influence of public opinion on public policy formulation.

Mr. Petrocik, Mr. Zaller

**142. Politics of Interest Groups.** Systematic investigation of role of political interest groups in governmental process, with attention to internal organization, leadership, and politics of such groups to goals and functions of various types of groups and to strategy and tactics of influence. Ms. Orren

**143. Legislative Politics.** Study of those factors which affect character of the legislative process and capacity of representative institutions to govern in contemporary society. Ms. Bawn, Mr. Snowiss

**144. The American Presidency.** Study of nature and problems of presidential leadership, emphasizing impact of the bureaucracy, congress, public opinion, interest groups, and party system on the presidency and national policy-making.

Ms. Orren, Mr. Snowiss

**145. Political Parties.** Lecture, three or four hours; discussion, one hour (optional). Organization and activities of political parties in the U.S. Attention to historical development of the parties, nature of party change, campaign functions and electoral role of the parties, membership problems and party activists, political finance, and policy formulation practices. P/NP or letter grading. Mr. Petrocik

**146. Political Behavior Analysis.** Prerequisites: courses 6, 141. Advanced course in use of quantitative methods in study of political behavior, especially in relation to voting patterns, political participation, and techniques of political action. Students conduct computer-aided analyses of issues and problems treated in course 141 and similar courses.

Mr. Petrocik, Mr. Zaller

**M147A. Chicano/Latino Politics.** (Same as Chicana and Chicano Studies M147A.) Lecture, three hours; discussion, one hour. Prerequisite: one 140-level course or one upper division course on race or ethnicity from history, psychology, or sociology, or consent of instructor. Introduction to political economy of racial domination in the U.S., concentrating on study of Mexican origin communities. Emphasis on identifying and explaining the historically changing relationship between class, race, and power by studying the interaction between state policies and practices, class and racial stratification systems, and cultural codes and modes of ideological discourse in each historical period. Mr. Rocco

**M147B. Minority Group Politics.** (Same as Afro-American Studies M147.) Lecture, three hours; discussion, one hour. Prerequisite: one 140-level course or one upper division course on race or ethnicity from history, psychology, or sociology, or consent of instructor. Course M147A is not prerequisite to M147B. Emphasis on dynamics of minority group politics in the U.S., touching on conditions facing racial and ethnic groups, with black Americans being the primary case for analysis. Three primary objectives: (1) to provide descriptive information about social, political, and economic conditions of the black community, (2) to analyze important political issues facing black Americans, (3) to sharpen students' analytical skills.

Mr. Gilliam, Mr. Keller

**M148. Mass Media and Elections.** (Same as Communication Studies M161.) Assessment of manner in which Americans' political beliefs, choices, and actions are influenced by mass media presentations, particularly during election campaigns. Topics include processes of political attitude formation and change, different types of media "effects," and role of the media in the American political process. Mr. Iyengar

**149A-149Z. Special Studies in Politics.** Prerequisites: two courses in Field III, consent of instructor. Intensive examination of one or more special problems appropriate to American politics. Sections offered on regular basis, with topics announced in preceding term. Courses 119, 139, 149, 169, 179, and 189 may be applied no more than twice toward field concentration requirement. No more than three of these courses may be applied toward the major.

**Field IV: Comparative Politics**

**152. British Government.** Government and politics of the United Kingdom; British constitution, parliament, parties and elections, foreign policies, administrative problems, and local governments.

Mr. Freedman

**153. Governments of Western Europe.** Constitutional and political structure and development of France and other states of continental Western Europe, with particular attention to contemporary problems.

Mr. Rogowski, Mr. Tsebelis

**153A. Game-Theoretic Approach to West European Politics.** Course 153 is not prerequisite to 153A. Uses of elementary game-theory to investigate post-World War II Western European politics: social and political forces, and political institutions. Particular emphasis on study of three West European countries — United Kingdom, France, and Federal Republic of Germany (West Germany). Consideration of current developments and comparisons with the U.S.

Mr. Tsebelis

**154. Governments of Central Europe.** Constitutional and political structure and development of Germany and other Central European states, with particular attention to contemporary problems.

Mr. Korbonski, Mr. Rogowski

**155. Advanced Pluralist Democracies.** Main features and basic problems of economically advanced democracies, analyzed in comparative framework, topic by topic. Emphasis on cross-Atlantic comparisons, not only political but also sociological.

**156. Government of the Soviet Union.** Intensive study of political and institutional organization of the Soviet Union and its component parts, with special attention to contemporary political issues, as well as party and governmental structures.

Mr. Anderson, Mr. Korbonski

**157. Governments of Eastern Europe.** Study of political and governmental organization of the Communist countries of Eastern and Central Europe (exclusive of the U.S.S.R.), with special reference to institutions, practices, and ideologies including interregional relations. Mr. Korbonski

**158A-158B. Socialism in Europe.** Origins as a mass movement, split into electoral and insurrectionary wings, development into social democracy in West Europe and into state socialism in Russia and East Europe, successes and failures of the welfare state, central planning and collapse of state socialism. P/NP or letter grading:

**158A.** West European Socialism. Mr. Wallerstein

**158B.** East European Socialism. Mr. Anderson

**159. Chinese Government and Politics.** Organization and structure of Chinese government, with particular attention to policies, doctrines, and institutions of Chinese Communism; political problems of contemporary China. Mr. Baum, Mr. Tong

**160. Japanese Government and Politics.** Structure and operation of contemporary Japanese political system, with special attention to domestic political forces and problems. Ms. Rosenbluth

**161. Government and Politics in Southeast Asia.**

Institutional and political processes and problems of states in Southeast Asia (Burma, Thailand, Malaysia, Laos, Cambodia, Vietnam, Indonesia, and the Philippines).

**162. Government and Politics in South Asia.** Comparative study of political change and development and performance of public institutions in Southern Asia, with special emphasis on India, Pakistan, and Bangladesh.

**163A-163B. Government and Politics in Latin America.** Comparative study of governmental and political development, organization, and practices:

**163A.** States of Middle America. Mr. Gonzalez

**163B.** States of South America.

Ms. Geddes, Mr. Gonzalez

**164. Government and Politics in the Middle East.** Comparative study of government in the Arab States, Turkey, Israel, and Iran. Mr. Binder

**165. Government and Politics in North Africa.** Comparative study of government and politics of the North African states, including relationship between political development, political organization, and social structure.

**166A-166B-166C. Government and Politics in Sub-Saharan Africa.** Patterns of political change in Africa south of the Sahara, with special reference to nationalism, nation building, and problems of development.

**166A.** Western Africa; **166B.** Eastern Africa; **166C.** Southern Africa. Mr. Keller, Mr. Lofchie, Mr. Sklar

**166D. Special Topics in African Politics.** Consult *Schedule of Classes* for topics to be offered in a specific term. P/NP or letter grading.

Mr. Keller (F,W,Sp)

**167. Ideology and Development in World Politics.** Comparative study of major modes of political and economic development in the world today. Relations between industrial and nonindustrial societies in light of current debate about imperialism. Mr. Sklar



**168. Comparative Political Analysis.** (Formerly numbered 168L.) Lecture, three or four hours; discussion, one hour (optional). Prerequisites: two courses in Field IV, or course 50 and one course in Field IV. Required of all students concentrating in Field IV. Major approaches to study of comparative politics. Concepts and methodology of comparative analysis.

Mr. Baum, Ms. Golden

**169A-169Z. Special Studies in Comparative Politics.** Prerequisites: two courses in Field IV, consent of instructor. Intensive examination of one or more special problems appropriate to comparative politics. Sections offered on regular basis, with topics announced in preceding term. Courses 119, 139, 149, 169, 179, and 189 may be applied no more than twice toward field concentration requirement. No more than three of these courses may be applied toward the major.

Also see courses 115, 181, 183C

### Subfield IIIa: Public Law

**170. Anglo-American Legal System.** Lecture, four hours; discussion, one hour. Evolution of English common law courts and their legal system, with emphasis on development of basic concepts of law which were received from that system in the U.S. and remain relevant today.

**172A-172B. American Constitutional Law.** Prerequisite: course 70. **172A.** Constitutional questions concerning separation of powers, federalism, and relationship between government and property. **172B.** Protection of civil and political rights and liberties under the constitution.

Mr. Hobbs

**173. Government and Business.** Nature of the corporation; regulation of competition; government promotion of economic interests; regulation of industries clothed with a public interest; government ownership and operation. May be applied toward either Subfield IIIa or IIIb.

Ms. Orren

**174. Government and Labor.** Labor force and nature of trade union; regulation of labor relations; programs to encourage full employment and to mitigate unemployment; protective labor legislation. May be applied toward either Subfield IIIa or IIIb.

Ms. Orren

**175A-175B. International Law.** Study of nature and place of international law in conduct of international relations. May be offered in consecutive terms or simultaneously. If offered consecutively, course 175A is prerequisite to 175B, and students may take 175A alone for four units credit. If offered simultaneously, student must take both courses for eight units. Maximum of four units may be applied toward Field II.

Mr. Wilkinson

**179A-179Z. Special Studies in Public Law.** Prerequisites: course 70, one additional course in Subfield IIIa, any special requirements, consent of instructor. Intensive examination of one or more special problems appropriate to public law. Sections offered on regular basis, with topics announced in preceding term. Courses 119, 139, 149, 169, 179, and 189 may be applied no more than twice toward field concentration requirement. No more than three of these courses may be applied toward the major.

Also see courses 117, 185

### Subfield IIIb: Public Organization and Policy

**180. Theories of Organization and Decision Making.** Examination of the theoretical frameworks for studying public and private bureaucracies, with emphasis on ideologies, values, behavioral patterns, and concepts of organization. P/NP or letter grading.

Mr. Chisholm, Mr. D. Wilson

**181. Comparative and Development Administration.** Analysis of bureaucratic structures and function in the U.S., other industrialized, and less developed countries, primarily at national level. Special attention to methods of comparative analysis and utility of various models. May be applied toward either Field IV or Subfield IIIb. P/NP or letter grading.

Mr. Fried

**182A-182D. Topics in National Policy Development and Implementation.** Investigation of complex process of policy development and implementation in the U.S., including roles of federal, state, and local agencies as well as private organizations. Subsections offered on particular policy areas, with topics announced in preceding term. P/NP or letter grading.

**183A-183B-183C. Subnational Institutions:**

**183A.** American State Government. Examination of governments of states of federal union as major sources of public policy in the U.S., with government of California as principal topic. P/NP or letter grading.

Mr. D. Wilson

**183B.** Government of American Cities. Intensive analysis of contemporary urban governance in the U.S. Emphasis on such student participatory activities as fieldwork, research, and gaming of urban politics and policy problems. P/NP or letter grading.

Mr. Fried

**183C.** Comparative Urban Government. Cross-national exploration of urban government performance in such areas as crime control, planning, and finance. Considerable emphasis on empirical analysis of comparative performance. May be applied toward either Field IV or Subfield IIIb. P/NP or letter grading.

Mr. Fried

**184. Bureaucracy and Public Management.** Prerequisite: familiarity with American government. Nature of bureaucracy in modern government, with emphasis on the U.S.; explanation of why government agencies behave as they do. Focus on real and imagined problems with bureaucratic rule; evaluation of commonly proposed solutions for these problems. Examples from schools, armies, welfare bureaus, regulatory agencies, and intelligence services, among others. P/NP or letter grading.

Mr. Chisholm

**185. Judicial Oversight of Public Organizations.** Legal controls of administration action. Substantive and procedural limits on administrative discretion imposed by legislation, executive and judicial agencies, and sources of legal powers of administrative bodies within these limits. May be applied toward either Subfield IIIa or IIIb. P/NP or letter grading.

Mr. Hobbs

**186. Governing the Bureaucracy in the U.S.** Prerequisites: course 40, and junior standing or consent of instructor. Relationship between elected officials and administrators in the U.S., especially efforts of elected and appointed officials to monitor and control behavior of those in "permanent government" (career bureaucrats).

Mr. Aberbach

**189A-189Z. Special Studies in Public Organization and Policy.** Prerequisites: two courses in Subfield IIIb, consent of instructor. Intensive examination of one or more special problems appropriate to public organization and policy. Sections offered on regular basis, with topics announced in preceding term. Courses 119, 139, 149, 169, 179, and 189 may be applied no more than twice toward field concentration requirement. No more than three of these courses may be applied toward the major.

Also see courses 138C, 173, 174

### Special Studies

**195A-195B-195C. Honors Seminars and Thesis.** Prerequisites: one course in C197 series, 3.5 GPA in upper division political science courses, eligibility for Letters and Science honors. Course 195A is prerequisite to 195B, which is prerequisite to 195C. One-year honors seminar and thesis-writing sequence. Students entering course 195A are expected to have some experience in writing research papers and to have in mind a research topic suitable for treatment at length and in depth:

**195A.** Students define their research topic, select a suitable research method, determine appropriate sources of information, prepare research proposal, find a thesis director, begin their research, and submit progress reports or preliminary drafts. Class sessions emphasize critical and constructive discussions of students' topics, methods, and problems in research, as well as general consideration of political science research topics and methods of current or continuing interest. Students also meet privately with instructor to discuss progress of their research.

**195B-195C.** Writing of honors thesis under direction of a faculty member. Thesis is read by appropriate field committee and graded high honors, honors, or no honors. In Progress grading.

**C197A-C197F. Seminars for Majors.** Seminar, three hours. Prerequisites: political science major, upper division standing, 3.25 GPA in upper division political science courses, two upper division courses in field in which seminar is offered. Consult *Schedule of Classes* for topics to be offered in a specific term. May be applied toward distribution or concentration requirement. May be concurrently scheduled with various graduate courses.

**M197G. Introduction to Development Studies: Political Economy of Development.** (Same as Development Studies M100B.) Seminar, three hours. Prerequisite: some beginning experience in social sciences at college level. Seminar for undergraduates designed to examine concepts and issues arising from economic, social, and political change in the Third World.

Mr. Sklar (Sp)

**199. Readings in Political Science (2 to 4 units).** Prerequisites: upper division standing, 3.0 overall GPA, consent of instructor and department chair. Individual studies. May not be applied toward concentration or distribution requirement. May be repeated for a maximum of 16 units.

## Graduate Courses

### Formal Theory and Quantitative Methods

**200A. Statistical Methods I (0 units).** (Formerly numbered 204A.) Lecture, three hours. Corequisite: course 200AL. Introduction to statistical analysis of political data. Methods of data analysis, estimation, and inference.

Mr. DeNardo

**200AL. Statistical Methods Laboratory I (8 units).** (Formerly numbered 204A.) Laboratory, three hours. Corequisite: course 200A.

Mr. DeNardo

**200B. Statistical Methods II.** (Formerly numbered 204B.) Lecture, three hours. Prerequisites: courses 200A/200AL. Recommended: knowledge of elementary calculus. Applications of multiple regression in political science.

**200C. Statistical Methods III.** (Formerly numbered 204C.) Lecture, three hours. Prerequisites: courses 200A/200AL, 200B, knowledge of elementary calculus. Statistical modeling of political processes. Topics include simultaneous equations models, discrete choice models, time-series models.

**M200E. Advanced Regression Analysis.** (Same as Psychology M256.) Seminar, three hours. Prerequisite: consent of instructor. Diagnostics, robust regression, cross validation, resampling, outliers, missing data, geometry of regression, validity of assumptions, categorical dependent variables, transformation of variables. Access to Macintosh computer very helpful.

Mr. de Leeuw, Mr. DeNardo

**201A. Introduction to Formal Political Analysis.** (Formerly numbered 205A.) Seminar, three hours. Survey of formal political theory to enhance literacy and provide analytical tools without presupposing mathematical background. Model building, collective goods, unanimity and the social contract, voting rules, paradoxes and impossibility theorems, stability, individual liberty and decentralization, strategic manipulation representation, vote trading.

Mr. Schwartz

**201B. Theory of Collective Choice.** (Formerly numbered 205B.) Seminar, three hours. Recommended (but not prerequisite) for political science students: course 201A. Open to any student of politics, economics, philosophy, or mathematics with ability for deductive reasoning. Introduction to abstract, deductive study of voting systems and other collective-choice processes. Axiomatic method applied to politics and political economy, concept of rationality, and agenda control, choice-set or solution concepts. Mr. Schwartz

**202. Mathematics for Political Science.** (Formerly numbered 206.) Lecture, three hours. Prerequisite: working knowledge of high school algebra. Survey of mathematical methods useful in political science. Topics include differential and integral calculus, differential equations, optimization, and linear algebra. Ms. Bawn, Mr. Wallerstein

**203A. Economic Theory and Methods for Political Science I.** (Formerly numbered 203.) Discussion, three hours. Prerequisite: knowledge of elementary calculus. Introduction to techniques of economic analysis and survey of major topics in formal political economy. Investigation of models of regulation, trade protection, collective bargaining, and economic growth as time permits. Ms. Bawn, Mr. Wallerstein

**203B. Economic Theory and Methods for Political Science II.** Discussion, three hours. Prerequisite: course 203A. Continuing survey of microeconomic techniques used in formal political science, with focus on market failures and on modeling individual choice in nonmarket situations. Specific topics include externalities, public goods and allocation mechanisms, collective action, spatial models, structure-induced equilibrium, and information asymmetries. Ms. Bawn, Mr. Wallerstein

**204. Game Theory in Politics.** (Formerly numbered 240.) Seminar, three hours. Survey of game theory, with emphasis on utilizing mathematical models to understand political and economic phenomena. Applications concern political participation, public goods, legislatures, industrial regulation, bureaucracies, interest groups, and party competition. Designed to help students become informed consumers of game theoretical literature in political science. Mr. Tsebelis

**M208A. Game Theory.** (Formerly numbered M242A.) (Same as Economics M214B.) Lecture, three hours. Prerequisites: Economics 213A or suitable mathematics courses. Bargaining theory, the core, the value, other solution concepts. Applications to oligopoly, general exchange and production economies, and allocation of joint costs. S/U or letter grading. Mr. Shapley

**M208B. Topics in Applied Game Theory.** (Formerly numbered M241.) (Same as Economics M215.) Lecture, three hours. Prerequisites: calculus or introductory probability, and graduate standing in economics or consent of instructor. Survey and applications of major solution concepts to models of bargaining, oligopoly, cost allocation, and voting power. S/U or letter grading. Mr. Shapley

**M208C. Large Economies.** (Formerly numbered M242B.) (Same as Economics M214C.) Lecture, three hours. Prerequisites: Economics 213A or suitable mathematics courses. Consideration of economics with a continuum of consumers and with a continuum of goods. Basic model applied to perfectly competitive equilibrium, the core, location models, and other models with nonconvex preferences and/or technology. S/U or letter grading. Mr. Ellickson

**M208D. Multivariate Analysis with Latent Variables.** (Formerly numbered M247.) (Same as Psychology M257.) Lecture, three hours. Prerequisite: consent of instructor. Introduction to models and methods for analysis of data hypothesized to be generated by unmeasured latent variables, including latent variable analogues of traditional methods in multivariate analysis. Causal modeling: theory testing via analysis of moment structures. Measurement models such as confirmatory, higher-order, and structured-means factor analytic models. Structural equation models, including path and simultaneous equation models. Parameter estimation, hypothesis testing, and other statistical issues. Computer implementation. Applications. Mr. Bentler

**M208E. Bayesian Econometrics.** (Formerly numbered M249.) (Same as Economics M232A.) Lecture, three hours. Prerequisites: Economics 231A, 231B. Subjective probability, introduction to decision theory, Bayesian analysis of regression, sensitivity analysis, simplification of models, criticism. S/U or letter grading. Mr. Leamer

**209. Special Topics in Formal Theory and Quantitative Methods.** Seminar, three hours.

## Political Theory

**210A-210B. Introduction to Political Theory.** Lecture, three hours. Exploration of major texts and issues in political theory:

**210A.** Classical and Medieval Formulations from Plato through Aquinas.

Mr. Campbell, Mr. Rapoport, Mr. Wolfenstein

**210B.** Early Modern Period from Machiavelli through the Enlightenment.

Mr. Ashcraft, Mr. Campbell, Mr. Rapoport

**M211. Morality of Capitalism.** (Same as Management M293B.) Lecture, three hours. Prerequisite: consent of instructor. Examination of major philosophical writings that defend or criticize capitalism on basis of principles of right conduct and just social arrangements (i.e., on moral grounds). Mr. J. Wilson

**212. Seminar: Political Theory.** (Formerly numbered 257.) Discussion, three hours.

Mr. Ashcraft, Mr. Binder

**213. The Bible as Political Theory.** Seminar, three hours. Examination of the Bible as a political document. Particular attention to concepts which have played an essential part in Western political thought (i.e., covenant, charisma, history, law, states of nature, human nature, and the state). Mr. Rapoport

**C217. Selected Texts in Political Theory.** (Formerly numbered C221.) Discussion, three hours. Critical examination of major texts in political theory, with particular attention to their philosophic system, their relations to contemporary political and intellectual currents, and importance of the system for present-day political analysis. May be concurrently scheduled with course C197A.

**C218. Selected Topics in Political Theory.** (Formerly numbered C222.) Discussion, three hours. Critical examination of a major problem in political theory. May be concurrently scheduled with course C197A.

**219. Workshop: Political Theory.** Discussion, three hours.

## International Relations

**220. International Relations Theory.** (Formerly numbered 212A.) Discussion, three hours. Approaches to and central problems of international relations theory.

Mr. Rosecrance, Mr. Stein

**C221. Advanced International Relations Theory.** (Formerly numbered C231D.) Discussion, three hours. Introduction to contemporary problems in international relations theory. May be concurrently scheduled with course C197B.

Mr. Stein, Mr. Wilkinson

**222. Seminar: Strategic Interaction.** Seminar, three hours. A strategic move influences the other person's choice by affecting his expectations of how we will behave. Discussion of theories of deterrence, coercive diplomacy, crisis management, war termination, and negotiation. Use of various theoretical approaches to explaining strategic interaction, including psychology, bargaining theory, and game theory.

Ms. Larson

**C223. Politics and Strategies of Modern War.** (Formerly numbered C231B.) Seminar, three hours. Analysis of various national security problems in both their military/technical and political dimensions. Development in some depth of issues likely to be raised in course 138A (not prerequisite). May be concurrently scheduled with course C197B.

Mr. Rosecrance

**225. American Foreign Policy.** Discussion, three hours. Discussion of approaches used to explain foreign policy-making at individual, small group, bureaucratic, and domestic politics levels. Application to selected cases in American foreign policy.

Ms. Larson

**C226. The Making of American Foreign Policy.** (Formerly numbered C231A.) Seminar, three hours. Intensive analysis of policy formulation process and substance of selected contemporary problems in foreign policy. Political and institutional factors affecting foreign policies; analysis of policy options. May be concurrently scheduled with course C197B.

Mr. Spiegel

**C227. Foreign Policy Process.** (Formerly numbered C231C.) Discussion, three hours. Prerequisites: courses 120 and 220, or consent of instructor. Political science and policy science approaches to national foreign policy process, with primary focus on formulation and implementation of American foreign policy. May be concurrently scheduled with course C197B.

**230. Contending Perspectives on International Political Economy.** (Formerly numbered 232A.) Discussion, three hours. Survey of various theoretical approaches to international political economy.

**231. Markets, States, and International Political Economy.** (Formerly numbered 232B.) Discussion, three hours. Interaction between international trade and investment and domestic political economics of both industrialized and industrializing societies.

Mr. Frieden

**233A-233B-233C. Political Economy Workshops (0 units, 0 units, 12 units).** Discussion, two hours. Open only to graduate students who have successfully completed major field examinations. Workshop for students writing or preparing to write dissertations. Reading and discussion of research in progress presented by UCLA faculty, visiting scholars, and advanced graduate students. Research paper of publishable length and quality required. In Progress grading.

Mr. Frieden

**234A-234B-234C. Workshops: National Security, Foreign Policy, and International Relations (0 units, 0 units, 12 units).** Discussion, two hours. Course 234A is prerequisite to 234B, which is prerequisite to 234C. Courses must be taken in sequence. Open to graduate students who have successfully completed major examinations and intended for students preparing for or working on dissertations. Reading and discussion of research in progress presented by UCLA faculty, visiting scholars, and advanced graduate students. Major research paper required. In Progress grading.

Mr. Rosecrance, Mr. Stein

**C239. Selected Topics in International Relations.** (Formerly numbered C253.) Discussion, three hours. May be concurrently scheduled with course C197B.

## Comparative Politics

**240A-240B. Comparative Politics.** (Formerly numbered 215A-215B.) Discussion, three hours. Course 240A or consent of instructor is prerequisite to 240B. Approaches to study of comparative politics and problems of comparative political analysis.

Mr. Binder, Mr. Rogowski

**C241. African Studies.** (Formerly numbered C250E.) Discussion, three hours. May be concurrently scheduled with course C197D.

Mr. Keller, Mr. Lofchie, Mr. Sklar

**C242. Chinese and East Asian Studies.** (Formerly numbered C250C.) Discussion, three hours. May be concurrently scheduled with course C197D.

Mr. Baum, Mr. Tong

**C243. Japanese and Western Pacific Studies.** (Formerly numbered C250D.) Discussion, three hours. May be concurrently scheduled with course C197D.

Ms. Rosenbluth

**C244. Latin American Studies.** (Formerly numbered C250A.) Discussion, three hours. May be concurrently scheduled with course C197D.

Ms. Geddes, Mr. Gonzalez

**C245. Middle Eastern Studies.** (Formerly numbered C250F.) Discussion, three hours. May be concurrently scheduled with course C197D. Mr. Binder

**C247. Russian and Slavic Studies.** (Formerly numbered C250B.) Discussion, three hours. May be concurrently scheduled with course C197D.

Mr. Anderson, Mr. Horelick

**247A. Evolution of Soviet Politics.** Discussion, three hours. Discussion seminar surveying principal scholarly controversies concerning transitions between various stages in political evolution of the Soviet Union. Mr. Anderson

**C247B. Domestic Context of Soviet Foreign Policy.** Discussion, three hours. Examination of domestic social, political, bureaucratic, and organizational sources of Soviet foreign and strategic policy, with emphasis on *Perestroika* and its implications. May be concurrently scheduled with course C197B.

**C248. South Asian Studies.** (Formerly numbered C250L.) Discussion, three hours. May be concurrently scheduled with course C197D.

**C250A. Western European Studies.** (Formerly numbered C250H.) Seminar, three hours. May be concurrently scheduled with course C197D.

Ms. Golden, Mr. Rogowski, Mr. Tsebelis

**250B. Political Development of Modern Europe.** Discussion, three hours. Principal phases of political development from high feudalism to the present, together with theories of causation. Mr. Rogowski

**251. Political Economy of Structural Adjustment.** Discussion, three hours. Some familiarity with economics helpful. Principal arguments for structural adjustment (trade and economic liberalization) and consideration of political issues that arise from this process. Mr. Lofchie

**252A. Parties and Party Systems.** Discussion, three hours. Theories and practices of political parties, party systems, and elections in comparative perspective. Mr. Tsebelis

**252B. Foundations of Representative Government.** (Formerly numbered 236A-236B.) Discussion, three hours. Analysis of factors affecting development and functions of representative institutions in the U.S., Europe, and selected political systems of Africa, Asia, and Latin America. American politics or comparative politics field credit. Mr. Snowiss

**253. Political Change in Communist Systems.** Discussion, three hours. Examination of political context and consequences of structural reform in Communist systems; theories of post-Leninist political pluralization and convergence. Mr. Baum

**254. Seminar: Social Class and Political Analysis.** (Formerly numbered 227.) Discussion, three hours. Investigation of concept of social class as a tool of political analysis, with emphasis on current debates regarding definition and utility of class as an analytic category. S/U or letter grading.

Mr. Ashcraft, Mr. Wallerstein

**255. Seminar: Political Change.** (Formerly numbered C271.) Seminar, three hours. Interdisciplinary seminar directed toward comparative analysis of political development and modernization.

Mr. Binder, Mr. Sklar

**256. External Sources of Domestic Politics.** Discussion, three hours. Theoretical and historical studies of impact of war and trade on domestic cleavages, policy, and institutions. Mr. Rogowski

**257. Labor and Working-Class Politics.** Discussion, three hours. Questions and topics on comparative labor and working-class politics. Ms. Golden

**258. Seminar: Political Violence.** Seminar, three hours. Empirical theory and research on causes, processes, and outcomes of violent social conflict, including mass political protest, riot, revolt, terrorism, and revolution. Mr. Tong

**259. Selected Topics in Comparative Politics.** (Formerly numbered 235.) Discussion, three hours. Critical examination of a major problem in comparative politics.

## American Politics

**260A. Survey Course in American Politics: Political Parties and the Electoral Process.** (Formerly numbered 214A.) Discussion, three hours.

Mr. Petrocik, Mr. Zaller

**260B. Survey Course in American Politics: American Political Institutions.** (Formerly numbered 214B.) Discussion, three hours.

Mr. Aberbach, Ms. Orren

**M261A. Proseminar: Political Psychology.** (Formerly numbered M224G.) (Same as History M236A and Psychology M228A.) Discussion, three hours. Introduction to political psychology: psychobiography, personality and politics, mass attitudes, group conflict, political communication, and elite decision making. Mr. Iyengar, Ms. Larson, Mr. Sears, Mr. Zaller

**C261B. Mass Attitudes and Political Behavior.** (Formerly numbered C224H.) Discussion, three hours. Prerequisite: course 141 or 260A or consent of instructor. Analysis of development and change of political attitudes in mass publics and their relationship to voting, protest, and violence. May be concurrently scheduled with course C197C.

Mr. Petrocik, Mr. Sears, Mr. Zaller

**261C. Political Communication.** Discussion, three hours. Broad survey of research bearing on role of mass media in the American political process. Topics include theories of persuasion, evolution of "media effects" research, reporting and advertising as determinants of election outcomes, adversarial versus deferential journalism, and analyses of media bias.

Mr. Iyengar

**M261D. Seminar: Political Psychology.** (Formerly numbered M224G.) (Same as Psychology M228B.) Discussion, three hours. Prerequisite: course M261A or Psychology 220A or consent of instructor. Examination of political behavior, political socialization, racial conflict, mass political movements, and public opinion. Mr. Sears

**M261E. Critical Problems in Political Psychology.** (Same as Psychology M228C.) Discussion, three hours.

**C262. Political Parties.** (Formerly numbered C224I.) Discussion, three hours. Critical examination of literature on party systems and organization. Special attention to political functions, electoral campaigns, and party cadres. May be concurrently scheduled with course C197C.

Mr. Petrocik

**C263. Political Recruitment.** (Formerly numbered C224B.) Discussion, three hours. Critical evaluation of literature concerned with backgrounds of public figures and with screening and sponsoring mechanisms affecting their careers and political perspectives. May be concurrently scheduled with course C197C.

**C264. Politics and Society.** (Formerly numbered C224C.) Discussion, three hours. Application of selected classical and contemporary sociological theories to politics. May be concurrently scheduled with course C197C.

Mr. Gilliam

**265. Politics and Economy.** (Formerly numbered 224A.) Discussion, three hours. Analysis of theoretical and practical relationships between economic organization and governmental institutions. Development and political implications of the market system, banking and finance, corporate enterprise, and organized labor. Ms. Orren

**266. Group Theories of Politics.** (Formerly numbered 224D.) Discussion, three hours. Critical appraisal of "group theory" approaches to study of political decision making, with special attention to empirical research problems and findings. Ms. Orren

**268. Seminar: Political and Electoral Problems.** (Formerly numbered 259.) Seminar, three hours. Prerequisites: two graduate courses in politics.

Mr. DeNardo, Mr. Schwartz

**269. Seminar: Political Behavior.** Seminar, three hours.

**C270. Legislative Behavior.** (Formerly numbered C224E.) Discussion, three hours. Analysis of major approaches to study of representative institutions, with special emphasis on assumptions, concepts, methods, and theoretical implications associated with each approach. May be concurrently scheduled with course C197C. Ms. Bawn, Mr. Snowiss

**C271. Executive Politics and the Presidency.** (Formerly numbered C224F.) Discussion, three hours. Analysis of executive organization and leadership, with emphasis on the American Presidency. Special attention to theories of organization and personality and relationship between the executive and other institutions and groups. May be concurrently scheduled with course C197C. Mr. Aberbach, Mr. Snowiss

**272. Political Environment of the Federal Executive.** (Formerly numbered 224J.) Discussion, three hours. Examination of political environment of the federal executive in the U.S. Special attention to executive/legislative relations. Mr. Aberbach

**273. American Political Development.** Discussion, three hours. National political institutions in historical perspective, theories of state building, state societal relations, political culture. Ms. Orren

**275. Seminar: American Political Institutions.** Seminar, three hours.

**C276. Public Law.** (Formerly numbered C216.) Discussion, three hours. Systematic analysis of scope and nature of public law, with particular attention to its materials and methods as illustrated in concepts and doctrines from various of its subjective fields. May be concurrently scheduled with course C197F.

Mr. Hobbs

**C277. Making of the Constitution.** (Formerly numbered C238B.) Discussion, three hours. Examination of development of constitutional law during selected periods of American history, such as founding, Marshall and Taney eras, and New Deal. Emphasis on both judicial and nonjudicial materials. May be concurrently scheduled with course C197E. Mr. Hobbs

**C278. Bill of Rights and the States.** (Formerly numbered C238C.) Discussion, three hours. Examination of problems surrounding application to the states of Amendments 1 through 9. May be concurrently scheduled with course C197E. Mr. Hobbs

**C279. Seminar: Public Law.** (Formerly numbered C252.) Discussion, three hours. May be concurrently scheduled with course C197E.

**C280. Organization Theory Approaches to Organizational Analysis.** (Formerly numbered C218.) Discussion, three hours. Analysis of several major conceptual alternatives for study of organizations, with emphasis on public administrative organizations. Topics include structural/functional and systemic approaches to organization, rational-choice models, and social psychological analyses. Each alternative critically evaluated for its strengths and weaknesses as guide to understanding organizational analysis. May be concurrently scheduled with course C197F. Mr. Chisholm

**C281. Public Policy Studies.** (Formerly numbered C219.) Discussion, three hours. Systematic analysis of nature and scope of public policy and its programmatic implications. Special emphasis on government organizations and process, as well as types of government intervention and stages of the policy process. Substantive focus primarily on American public policy and analysis. May be concurrently scheduled with course C197F.

**C282. Subnational Administrative Systems.** (Formerly numbered C229.) Discussion, three hours. Analysis of state administrative systems, their local subsystems, and their outputs. May be concurrently scheduled with course C197F. Mr. Fried

**C283. Seminar: Public Organization and Policy.** (Formerly numbered C254.) Seminar, three hours. May be concurrently scheduled with course C197F.

Mr. Chisholm

**284. Seminar: Bureaucracy and Organization.** (Formerly numbered 261.) Discussion, three hours. Prerequisite: consent of instructor. Exploration of topics in analysis of public and private bureaucracies and organizational theory. Topics include empirical theories of bureaucratic behavior; bureaucratic growth; bureaucratic behavior and political culture; organizational structures and strategies; and function of the executive. Mr. Chisholm

### Special Studies

With consent, credit may be applied toward any field.

**290. Modern Political Economy.** (Formerly numbered 225A.) Discussion, three hours. Discussion of implications for understanding politics of the thinking of politicians, bureaucrats, producers, consumers, and nations as utility maximizers. Topics include microfoundations for macromodels, forms of political participation, the state, government regulation, growth of government, bureaucracy elections, public policy, inflation. Mr. Stein

**M291A-M291B. Social Theory and Comparative History.** (Formerly numbered M223A-M223B.) (Same as History M203A-M203B and Sociology M296A-M296B.) Colloquium, three and one-half hours every other week. Introduction to historically rooted social theory and theoretically sensitive history, following the program of the Center for Social Theory and Comparative History. Each course may be taken independently for credit.

Mr. Ashcraft, Mr. Brenner

**292A-292B. Introduction to Political Inquiry.** (Formerly numbered 203A-203B.) Discussion, three hours. **292A.** Problems of Scientific Inquiry and Normative Discourse; **292B.** Major Conceptual Frameworks and Approaches to Political Science. Prerequisite: course 292A or equivalent.

**293. Terrorism.** Discussion, three hours. Analysis of the concept, relationship of terrorism to other forms of violence, history of the phenomena, various forms, and costs. Mr. Rapoport

**294. Religion, Revolution, and Violence.** Discussion, three hours. Critical examination of various accounts of religion as a revolutionary and conservative force. Special attention to millenarianism and revolution and to the revealed religions, Christianity, Judaism, and Islam. Mr. Rapoport

**295. Comparative Fundamentalism.** Discussion, three hours. Study of political meaning of the fundamentalist phenomena in various religions, especially Christianity, Judaism, and Islam. Mr. Rapoport

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495. Teaching Political Science.** Workshop in teaching techniques, including evaluation of each student's own performance as a teaching assistant. Normally to be taken by all new teaching assistants in first term of their assistantships. May be taken only in term in which students are teaching assistants. May not be applied toward M.A. or Ph.D. course requirements. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**590A. Directed Reading for Ph.D. Dissertation Proposal (0 units).** Required of all Ph.D. students. Must be taken under supervision of research adviser prior to term in which oral examination is taken. Research for proposed dissertation topic and submission of bibliographic essay on that topic. In Progress grading (credit to be given only on completion of course 590B).

**590B. Directed Research for Ph.D. Dissertation Proposal (8 units).** Prerequisite: course 590A. Required of all Ph.D. students. Must be taken under supervision of research adviser prior to or during term in which oral examination is taken. Development and writing of research design for Ph.D. dissertation. With consent of research adviser, courses 233A-233B-233C may, by petition, be accepted as equivalent to courses 590A and 590B.

**596. Directed Individual Study or Research (2 to 4 units).** May be applied only three times toward minimum course requirement in first two years. May be repeated.

**597. Preparation for Ph.D. Qualifying Examinations (2 to 12 units).** May be repeated. S/U grading.

**599. Research for and Preparation of Ph.D. Dissertation (2 to 12 units).** May be repeated. S/U grading.

## Program in Computing

See Mathematics

## Psychology

1285 Franz Hall, (310) 825-2961

### Professors

Paul R. Abramson, Ph.D.  
Howard S. Adelman, Ph.D.  
Arthur P. Arnold, Ph.D. (*Neurosciences*)  
Bruce L. Baker, Ph.D. (*Luckman Distinguished Teaching Award*)  
Jackson Beatty, Ph.D. (*Neurosciences*)  
Peter M. Bentler, Ph.D.  
Elizabeth L. Bjork, Ph.D., *Undergraduate Affairs Vice Chair*  
Robert A. Bjork, Ph.D. (*Distinguished Teaching Award*)  
Larry L. Butcher, Ph.D. (*Neurosciences*)  
Andrew Christensen, Ph.D.  
Barry E. Collins, Ph.D.  
Jan de Leeuw, Ph.D.  
Gaylord D. Ellison, Ph.D. (*Neurosciences*)  
Michael S. Fanselow, Ph.D.  
Seymour Feshbach, Ph.D.  
Rosslyn Gaines, Ph.D., *in Residence*  
C.R. Gallistel, Ph.D. (*Neurosciences*)  
R. Edward Geiselman, Ph.D.  
Rochel Gelman, Ph.D.  
Michael J. Goldstein, Ph.D. (*Distinguished Teaching Award*)  
Patricia M. Greenfield, Ph.D. (*Distinguished Teaching Award*)  
Constance L. Hammen, Ph.D.  
Barbara A. Henker, Ph.D.  
Nancy M. Henley, Ph.D.  
Eric W. Holman, Ph.D.  
Keith Holyoak, Ph.D.  
John P. Houston, Ph.D.  
Harry J. Jerison, Ph.D., *in Residence*  
Franklin B. Krasne, Ph.D. (*Neurosciences*)  
John C. Liebeskind, Ph.D. (*Neurosciences*)  
O. Ivar Lovaas, Ph.D., Litt.D.  
Donald G. Mackay, Ph.D.  
Neil M. Malamuth, Ph.D.  
Irving Maltzman, Ph.D., *Graduate Affairs Vice Chair*  
Albert Mehrabian, Ph.D.

Hector F. Myers, Ph.D.  
Donald Novin, Ph.D. (*Neurosciences*)  
L. Anne Peplau, Ph.D.  
Tara Scanlan, Ph.D.  
Richard Schmidt, Ph.D.  
David O. Sears, Ph.D.  
David Shapiro, Ph.D.  
Marion Sigman, Ph.D., *in Residence*  
James W. Stigler, Ph.D.  
Stanley Sue, Ph.D.  
Shelley E. Taylor, Ph.D.  
James P. Thomas, Ph.D., *Academic Personnel Affairs Vice Chair*  
Bernard Weiner, Ph.D.  
John R. Weisz, Ph.D.  
Thomas D. Wickens, Ph.D. (*Distinguished Teaching Award*)  
J. Arthur Woodward, Ph.D., *Chair*  
Eran Zaidel, Ph.D. (*Neurosciences*)

### Professors Emeriti

Richard P. Barthol, Ph.D.  
William E. Broen, Jr., Ph.D.  
Edward C. Carterette, Ph.D.  
James C. Coleman, Ph.D.  
Andrew L. Comrey, Ph.D.  
Morton P. Friedman, Ph.D.  
John Garcia, Ph.D.  
Joseph A. Gengerelli, Ph.D.  
Harold B. Gerard, Ph.D.  
Milton E. Hahn, Ph.D.  
Wendell E. Jeffrey, Ph.D.  
F. Nowell Jones, Ph.D.  
Harold H. Kelley, Ph.D.  
George F.J. Lechner, Ph.D.  
Donald B. Lindsley, Ph.D., Sc.D.  
John H. Lyman, Ph.D.  
George Mount, Ph.D.  
Charles Y. Nakamura, Ph.D.  
Allen Parducci, Ph.D. (*Distinguished Teaching Award*)  
Bertram H. Raven, Ph.D.  
Jessie L. Rhulman, Ed.D.  
Eliot H. Rodnick, Ph.D.  
Edwin S. Shneidman, Ph.D.  
Gerald H. Shure, Ph.D.

### Associate Professors

Terry K. Au, Ph.D.  
Patricia Cheng, Ph.D.  
Christine A. Dunkel-Schetter, Ph.D.  
Patrice L. French, Ph.D.  
Gerald M. Goodman, Ph.D.  
Carlos V. Grijalva, Ph.D. (*Neurosciences*)  
Steven R. Lopez, Ph.D.  
Vickie M. Mays, Ph.D.  
Thomas Minor, Ph.D.  
Stanley J. Schein, Ph.D., M.D.  
James H. Sidanius, Ph.D.

### Assistant Professors

David Boninger, Ph.D.  
Thomas N. Bradbury, Ph.D.  
Michelle Craske, Ph.D.  
John Hummel, Ph.D.  
Nancy G. Kanwisher, Ph.D.  
Brett Pelham, Ph.D.  
Rena L. Repetti, Ph.D.  
Cindy Yee-Bradbury, Ph.D.

### Adjunct Professors

Joseph Bogen, Ph.D.  
Marion Jacobs, Ph.D.  
Claire Kopp, Ph.D.  
James G. Miller, Ph.D.  
Jill Waterman, Ph.D.

### Adjunct Associate Professors

Jacqueline D. Goodchilds, Ph.D.  
Dennis McGinty, Ph.D.

**Adjunct Assistant Professors**

William McCarthy, Ph.D.  
Lynn A. Olzak, Ph.D.  
Dahlia Zaidel, Ph.D.

**Scope and Objectives**

We all practice some form of intuitive psychology to understand ourselves and the world around us. In contrast, the psychology curriculum at UCLA focuses on psychology as a scientific discipline that uses systematic methods of investigation to understand general principles of human behavior, cognition, and emotion.

The curriculum treats psychology as a biosocial science; human behavior is viewed from both biological and social viewpoints. The biosocial perspective allows students to study a broad range of topics such as psychobiology, animal behavior, learning, motivation, perception, cognition, measurement, memory, social psychology, personality, and clinical, developmental, community, and health psychology.

According to recent surveys, the UCLA Psychology Department is ranked as one of the top departments of its kind in the country in terms of faculty quality. The curriculum is both wide in terms of range of courses, and deep in terms of quality of the faculty.

The undergraduate curriculum provides a basic liberal arts foundation. It does not focus on training students to be only professional psychologists, but rather helps them to understand the world and our place in it. A choice of three majors, leading to either the B.A. or B.S. degree, is offered.

At the graduate level, the department offers training leading to the Ph.D. degree with emphases in various fields. The program is designed to prepare psychologists to function effectively as scientific investigators, college and university teachers, and professional psychologists.

**Undergraduate Study**

To meet the diverse needs of students, there are three different major curricula: the psychology major, the cognitive science major, and the psychobiology major. The first leads to a Bachelor of Arts degree; the other two culminate in a Bachelor of Science degree.

All courses required for these majors (which include lower division courses and major courses) must be taken for a letter grade. Graduate-level courses may not be applied toward degree requirements for any Psychology Department undergraduate major.

**Bachelor of Arts in Psychology**

The general psychology major emphasizes the experimental and research aspects of the field. It is a good choice for students with an interest in human behavior who wish to receive a general

education in the liberal arts and sciences. For additional information, contact the Undergraduate Advising Office, 1531 Franz Hall, early in your career.

**Preparation for the Major**

You must file a petition in the Undergraduate Advising Office to declare the prepsychology major; you are identified as a prepsychology major until the preparation for the major requirements have been satisfied and you file a petition to declare the psychology major. The following required courses must be taken for a letter grade (a C – or better in each course and a 2.3 overall grade-point average in the preparation courses) before you reach 110 total units (effective Fall Quarter 1990 for all entering freshmen; transfer students must complete all preparation courses by the end of the first year of enrollment): Anthropology 7 or 10 or 12 or 15; Biology 2 or 5; Chemistry and Biochemistry 2 (if you have completed one year of high school chemistry with a C or better, this requirement is waived) or 11A; Mathematics 2 or two terms of calculus; Physics 10 or 3A or 6A or 8A/8AL; one course from Philosophy 1, 4, 6, 7, 8, 9, 21, 22; Psychology 10 or 11, 42; Psychology 41 (recommended) or Statistics 50. Psychology 41 and 42 should be taken early in your career; enrollment in these courses is open to prepsychology majors only. You cannot take Psychology 42 until you have passed one of the statistics courses with a grade of C – or better.

Repetition of more than two preparation courses in which a grade of D or F was received or of any preparation course more than once results in automatic denial of admission to the major (effective Fall Quarter 1990 for all entering freshmen and transfer students).

These are minimum requirements in preparing for the major. More advanced courses in psychology, science, and statistics would provide stronger preparation and are highly recommended for students planning to pursue graduate work in psychology.

**The Major**

After completing the preparation courses, you must petition to enter the major at the Undergraduate Advising Office.

Effective Fall Quarter 1990 students who complete Psychology M117A-M117B-M117C will receive equivalent credit for course 115 and two upper division psychology electives.

*Required:* (1) Psychology 110, 115, 120, 130, 135; (2) one course from 111, 113, 116, 121, 136A, 136B, 171A, 174, 186A, 186B; (3) four additional upper division elective courses (16 units) in psychology.

All upper division courses must be taken for a letter grade. Effective Fall Quarter 1992 for all entering freshmen and transfer students, a C – or better is required in each core course (item 1 above) and in each laboratory (item 2),

and you must have a 2.0 grade-point average in all upper division major courses.

**Bachelor of Science in Cognitive Science**

This major focuses on the study and implementation of intelligent systems, both human and artificial. Cognitive science involves the study of cognitive psychology, computer science, mathematics, and related disciplines. For additional information, contact the Undergraduate Advising Office, 1531 Franz Hall, early in your career.

**Preparation for the Major**

You must file a petition in the Undergraduate Advising Office to declare the precognitive science major; you are identified as a precognitive science major until the preparation for the major requirements have been satisfied and you file a petition to declare the cognitive science major. The requirements listed below are effective Fall Quarter 1992 for all freshmen and new transfer students and for any students who have not declared the cognitive science major by Fall Quarter 1992. Questions about the major should be directed to the Undergraduate Advising Office, 1531 Franz Hall.

The following required courses must be taken for a letter grade (a C or better in each course and a 2.5 overall grade-point average in the preparation courses): Biology 2 or 5; Chemistry and Biochemistry 2 (if you have completed one year of high school chemistry with a C or better, this requirement is waived) or 11A; Mathematics 31A, 31B; Philosophy 7, 8, or 9; Physics 10 or 3A or 6A or 8A/8AL; Program in Computing 10A, 10B, 15; Psychology 10 or 11, 42, 85; Psychology 41 (recommended) or Statistics 50. Psychology 41 and 42 should be taken early in your career; these courses are open only to students who have declared the precognitive science major one term before the term in which they plan to enroll. You cannot take Psychology 42 until you have passed one of the statistics courses with a grade of C – or better.

Repetition of more than two preparation courses in which a grade of D or F was received or of any preparation course more than once results in automatic denial of admission to the major (effective Fall Quarter 1990 for all entering freshmen and transfer students).

**The Major**

After completing the preparation courses, you must petition to enter the major at the Undergraduate Advising Office.

Effective Fall Quarter 1992 students who complete Psychology M117A-M117B-M117C will receive equivalent credit for course 115 and two upper division cognitive science electives.

*Required:* (1) Psychology 115, 120, and one course from 124A through 124F; (2) one course from 186A or 186B and one course from 121, 186A, 186B, or Computer Science 161; (3) three

upper division elective courses (12 units) from Psychology 110, 112A through 119N, 123, 124A through 124F (if taken for the major, may not be applied as an elective), 130, 133B, 135, M142, 150, 151, 187, 189, 190B or 190C (if content is approved by the Undergraduate Advising Office and courses have not been applied toward the Psychology 188 requirement), 197 (content must be approved by the Undergraduate Advising Office before elective credit may be granted), Computer Science 111 through M196B, Linguistics 103 through C185B, Mathematics 110A through 151, Philosophy 126A through 136, Statistics M152A through M153B; (4) two terms of Psychology 188 (may be fulfilled by taking any two courses from 188, 190C, or 199, provided content is approved by the Undergraduate Advising Office).

You must have a 2.0 grade-point average in all upper division major courses. With the exception of Psychology 188, each course must be taken for a letter grade.

### Quantitative Methods Concentration

This concentration is intended to give students more extensive preparation in statistics. The following additional courses are required: Mathematics 32A, 32B, 33A, 33B, and either M150A-150B and 151, or Statistics M152A and 152B-152C. Psychology 41 is not required if you select this specialization.

### Bachelor of Science in Psychobiology

This major is designed for students who plan to go on to postgraduate work in physiological psychology, neuroscience, behavioral aspects of biology, or the health sciences. Psychobiology involves the study of brain-behavior relations and laboratory training in standard brain research techniques. For additional information, contact the Undergraduate Advising Office, 1531 Franz Hall, early in your career.

### Preparation for the Major

You must file a petition in the Undergraduate Advising Office to declare the prepsychobiology major; you are identified as a prepsychobiology major until the preparation for the major requirements have been satisfied and you file a petition to declare the psychobiology major. The following required courses must be taken for a letter grade (a C- or better in each course and a 2.0 overall grade-point average in the preparation courses): Biology 5, 6, 9; Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL, 132A, 132B/132BL; Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A; Physics 6A, 6B, and 6C, or 8A/8AL, 8B/8BL, and 8C/8CL; Psychology 10 or 11, 42; Psychology 41 (recommended) or Statistics 50. Psychology 41 and 42 should be taken early in your career; these courses are open only to students who have declared the prepsychobiology major one term before the term in which they plan to enroll. You cannot take Psychology

42 until you have passed one of the statistics courses with a grade of C- or better.

Repetition of more than two preparation courses in which a grade of D or F was received or of any preparation course more than once results in automatic denial of admission to the major (effective Fall Quarter 1990 for all entering freshmen and transfer students).

### The Major

After completing the preparation courses, you must petition to enter the major at the Undergraduate Advising Office.

Effective Fall Quarter 1990 students who complete Psychology M117A-M117B-M117C will receive equivalent credit for course 115 and two upper division psychobiology electives.

*Required:* (1) Biology 100A, 108, 129 or Psychology 118 or Anthropology 128A and 128B, and Psychology 110, 115, 116, 120; (2) one course from Psychology 127, 130, 135; (3) 16 units of graded elective courses from the following list: Biology 107, 112, 113A, 114 (no more than one from this group); Psychology 119A through 119N, 190C (only if content is approved by the Undergraduate Advising Office), 197 (content must be approved by the Undergraduate Advising Office before elective credit may be granted), Biology 102, C104, 105, 106, 110, 111, 115, 117, C119, 120, 122, 124 (only four units may be applied toward the major), 131 (only four units may be applied toward the major), 135, 138, 146, 153, CM156, 157, 158, 164, 166, 167, 168, 170, 171, M173, 179, Chemistry and Biochemistry 153A, 153L.

You must have a 2.0 grade-point average in all upper division major courses, and each must be taken for a letter grade.

### Fieldwork and Research Opportunities

Many research and fieldwork opportunities are open to students who wish to expand their knowledge and broaden their background in the field of psychology. These experiences can be enriching and help bring undergraduates closer to understanding research and its applications in the everyday world. At least one of the following courses is recommended for students planning postgraduate study: Psychology 188, 192, 193, 194, 199, or the Student Research Program (SRP) through the College of Letters and Science. Information about these courses and programs is available in the Undergraduate Advising Office, 1531 Franz Hall.

### Developmental Disabilities Immersion Program and Concentration

The Developmental Disabilities Immersion Program is cosponsored by the Department of Psychology, the Department of Psychiatry and Bio-

behavioral Sciences, and the Office of Instructional Development — Field Studies Development. Each year a group of 30 students is selected for the program which runs during Winter/Spring Quarters. Students participate in courses, fieldwork, and research at selected University and community facilities serving persons with developmental disabilities.

Required courses include Psychology/Psychiatry M180A, M180B, M181A-M181B. Students also take other courses related to developmental disabilities. Many of the courses fulfill psychology undergraduate major requirements (consult the Undergraduate Advising Office for details). Student individualized research projects are also part of the immersion experience.

To earn a concentration, majors in psychology, cognitive science, and psychobiology must be accepted into the Developmental Disabilities Immersion Program. Information and applications are available from Field Studies Development, 70 Powell Library. The following courses are required for the concentration: Psychology 127 (may also be applied as one of the three upper division electives required for the psychology major), 130 (also satisfies a core requirement for the psychology major), M180A, M180B, M181A-M181B, 193 (two terms). With the exception of course 193, each course must be taken for a letter grade. Students in the department who complete the requirements receive a certificate of completion from the department at graduation.

For more information, contact the Undergraduate Advising Office (1531 Franz Hall) or Field Studies Development (70 Powell Library).

### Specialization in Computing

Majors in psychology, psychobiology, and cognitive science may select a specialization in computing by (1) satisfying all the requirements for a bachelor's degree in the specified major, (2) completing Program in Computing 10A, 10B, and at least one course from 10C, 15 (recommended), 30, 60, and (3) completing Psychology 85 and at least two courses from M142, 150, 151, 186A, 186B. A grade of C or better is required in each course. You graduate with a bachelor's degree in your major and a specialization in computing. Consult the Undergraduate Advising Office if you plan to enter this specialization.

### Honors

#### Honors Courses

Each year the department offers a selection of honors courses, designated with an H suffix. The courses provide close contact with faculty members, emphasize readings in the original literature, student reports, and small group discussions, and may include field or research experience. All such courses offer credit toward the departmental honors program. Consult the Col-

lege of Letters and Science for information on requirements for College Honors. Enrollment priority in honors courses is given to students in the departmental honors program.

### Honors Program

Psychology, cognitive science, and psychobiology majors intending to continue study at the graduate level are encouraged to apply for the departmental honors program. You work for a year with a faculty sponsor on a research project that is the basis of a formal honors thesis. During that year you also participate in a weekly seminar (Psychology 190A-190B-190C) in which thesis projects are presented and discussed and other topics of interest are explored with invited faculty members and other guests. In addition, you must take two (or more) psychology honors courses selected from a list provided by the department, with a grade of B or better in each. Satisfactory completion of the program and the other requirements for the major leads to awarding of the degree with honors or highest honors. Consult the Undergraduate Advising Office early in your educational planning for further information and application forms.

### Infant Development Program

The Infant Development Program is designed as a teaching and research facility for the department and is set up to accommodate both cross-sectional and longitudinal investigation of infants, toddlers, and their parents. In addition, the program provides an opportunity for students in developmental psychology and other areas to acquire firsthand experience working with infants and toddlers through a two- or three-term sequence of Psychology 193. The program is located in Franz Hall and provides child care for about 13 infants ranging in age from four months to two and one-half years.

### Clinic for the Behavioral Treatment of Children

The Clinic for the Behavioral Treatment of Children carries out diagnosis, treatment, and research on children with severe psychological problems, such as children with autism and those with severe developmental disorders. The treatment philosophy is largely behavioral/educational, with emphasis on language acquisition, peer and school integration, and parent training. Students are taught behavioral treatment procedures and work in an apprenticeship relation to senior staff. Prior research has focused on variables controlling self-destructive behavior, perceptual deficits, language acquisition, and emotional/social attachments. The clinic serves as a teaching and research environment for both graduate and undergraduate students.

### National Research Center on Asian American Mental Health

The National Research Center on Asian American Mental Health (NRCAAMH) is one of several centers in the nation devoted to ethnic minority research, and the only one focusing on Asian Americans. NRCAAMH acts in a national multidisciplinary leadership role in the conduct and promotion of applied and basic research regarding the mental health of various Asian groups (e.g., Chinese, Japanese, Koreans, Filipinos, Southeast Asians, etc.) in the U.S. The center provides undergraduate and graduate students with opportunity to participate in research projects, publish scholarly articles, and collaborate with other researchers in the field.

### Preparation for Graduate Study

The curriculum for the undergraduate major fulfills admission requirements at most universities. However, candidates seeking graduate training in psychology should strengthen their preparation by accruing research experience through laboratory and research assistantships and through advanced undergraduate courses and seminars (especially in statistics and research design and methods). Independent study projects, honors theses, community placements, and fieldwork positions are also strongly recommended. Consult the Undergraduate Advising Office in 1531 Franz Hall or the Graduate Admissions Office in 3453 Franz Hall for more information.

### Ph.D. Degree

The graduate program in psychology leads to the Ph.D. degree. Although you may obtain the M.A. degree en route to the Ph.D., the department does not admit candidates for the M.A. degree only. For the Ph.D. degree, a thorough background in research methodology and psychological theory is required. Major specialized training is available in the areas of psychology listed below under "Major Fields or Subdisciplines."

A departmental brochure describing the graduate program in psychology is available in 3453 Franz Hall.

### Admission

Successful applicants to the Ph.D. program usually possess an undergraduate psychology degree and extensive research experience. However, students from other disciplines (particularly the mathematical, physical, biological, and social sciences) may be admitted. Admission is for Fall Quarter only and only on a full-time basis. Applicants must mail the following documents directly to the Psychology Department, 3453 Franz Hall, UCLA, Los Angeles, CA 90024-1563, by January 3 to be considered for admission the following Fall Quarter:

- (1) The University's *Application for Graduate Admission* and the departmental supplementary materials, available in 3453 Franz Hall.
- (2) Three letters of recommendation (preferably from research psychologists).
- (3) One official transcript from each college attended.
- (4) Official scores from the Graduate Record Examination (GRE) General Test and the Subject Test in Psychology (taken within the last three years).
- (5) The Test of English as a Foreign Language (TOEFL), required of all international applicants whose native language is not English.

Students who are being considered as finalists for the clinical program may be required to meet with the clinical faculty for an interview.

Admitted students are expected to have taken courses equivalent to the following: (1) Psychology 41; (2) two courses from Psychology 110, 115, 120; (3) two courses from the following alternatives: (a) Psychology 127, (b) 130, and (c) 135; (4) one course in biology or zoology, one course in mathematics (preferably calculus or probability), and two courses in the physical sciences (i.e., physics and/or chemistry; a course in anthropology, philosophy, or sociology may be substituted for one of the physical sciences courses). If you have completed one of the UCLA Psychology Department majors, you will have satisfied the undergraduate preparation requirements. Although it is possible to gain admission into the Ph.D. program with some deficiencies in these basic requirements, they must be remedied within your first four terms of graduate study by taking appropriate coursework or examinations.

### Major Fields or Subdisciplines

You may major in behavioral neuroscience, clinical, cognitive, developmental, learning and behavior, measurement and psychometrics, or social psychology. Training is also available in community psychology.

### Course Requirements

**General Course Requirements** — All students, regardless of area, must fulfill the requirements listed below.

The core program must be completed within your first two years in residence. The core program includes four core courses, plus Psychology 250A, 250B, 251A-251B (and 251C, if an additional term is needed to complete the course).

Nine graduate courses (36 units), including Psychology 250A, 250B, 251A-251B (research project must be complete), and at least three of the four core courses are required for the M.A. degree. One 596 course (four units) may be applied. Courses in the 400 series may not be applied. All undergraduate deficiencies must be cleared.

By the end of the second year, you must complete at least one individual research course (596) and at least three second-year graduate courses, including one quantitative course from Psychology 252A, 252B, 253, 254A, 254B, 255, M256, M257, 258, 259, 287.

During the third year, you must enroll in a minimum of three graduate-level courses, plus one term of course 596. At least one term of course 596 or 599 should be taken during the fourth year and each remaining year in the graduate program.

**Major Area Course Requirements** — Each area has its own specific requirements. A course may not be applied toward requirements in more than one major or minor area unless no other course options are designated. Requirements are as follows: *behavioral neuroscience* — eight units from the 205 series, three terms of course 212, two approved behavioral neuroscience seminars, and Neuroscience M201 and either M202 and M204 or Psychology M117A; *clinical* — Psychology 270A-270B-270C, 271A-271B-271C, 277A, and at least four additional clinical courses, distributed among the 272 series (zero to two courses) and advanced courses beyond 272 (two to four courses); *cognitive* — courses 260A-260B, plus four additional courses, including at least two selected from 259, 261 through 266, and at least one from 268A through 268E or 269; *developmental* — courses 240A-240B, two courses from 242A through 242F or 244; *learning and behavior* — courses 200A, 200B, plus two courses from 204A through 204E, 208, 210, 281, 290, 293; *measurement and psychometrics* — five courses from 249, 252A, 252B, 253, 254A, 254B, 255, M256, M257, 258; *social* — courses 220A, 220B, 220C, three social seminars taught by three different faculty members, course 226A in the first year of the program, and 226B-226C each year for the first three years of the program.

**Minor Area Course Requirements** — The minor area requirement is normally satisfied by taking three to four specified courses in one of the following areas: behavioral neuroscience, cognitive, developmental, experimental psychopathology, health, learning and behavior, measurement and psychometrics, political, or social psychology. You may also petition for an individualized minor. See departmental bulletins for further details.

### Qualifying Examinations

The qualifying examination generally consists of three separate sections. The first is an examination administered by the major area, which examines in breadth your knowledge of the major field. The second section is an individualized examination which examines in depth your knowledge of your area of specialization within the major field. The third section is the University Oral Qualifying Examination. All Ph.D. requirements listed above must be completed before the oral qualifying examination can be taken. After successful completion

of the oral examination, you are advanced to candidacy and may begin work on the dissertation.

Contact the department for the specific examination requirements of the various areas of specialization.

### Practicum and Internship Requirements for Clinical Students

(1) At least six terms of approved supervised preinternship practicum (Psychology 401 — 10 to 15 hours per week) are required and are usually taken in the second and third years.

(2) The equivalent of at least nine months of supervised internship (Psychology 451) in an acceptable setting approved by the faculty, taken prior to the award of the degree, is required. This is usually taken in the fourth or fifth year. The remaining three months of supervised internship must be completed as outlined in the internship contract after the award of the degree. Contact the department for further information on internship assignments.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Final Oral Examination

The final oral examination is required of all candidates for the Ph.D. degree.

### Psychology Clinic

The Psychology Clinic in the Department of Psychology is a major training center for clinical psychology students in the Ph.D. program. It provides a broad range of psychological services to clients, including assessment and individual, couples, family, and group therapy. Clients cover the entire age range and represent diverse populations in the community.

Student therapists receive very close supervision and are encouraged to relate their case material to academic learning and current research. Students and faculty members are also involved in a variety of clinical research projects.

### Lower Division Courses

**10. Introductory Psychology.** Not open to students with credit for course 11. General introduction including topics in cognitive, experimental, personality, developmental, social, and clinical psychology; six hours of psychological research.

**11. Principles of Psychology (5 units).** Lecture, three hours; discussion, one hour; laboratory, one hour. Recommended for premajors. Not open to students with credit for course 10. Introduction to psychology, with emphasis on critical analysis and research. Readings include selections from primary research literature. Discussion sections focus on writing assignments; laboratories focus on research simulation.

**15. Introductory Psychobiology.** Lecture, three hours. Designed for nonmajors. Survey of genetic, evolutionary, physiological, pharmacological, and experimental factors affecting behavior. Using comparative approach where appropriate, emphasis on relevance of biological mechanisms to understanding of humans and their interaction with their environment.

**41. Psychological Statistics.** Lecture, five hours. Prerequisites: course 10, Mathematics 2, and psychology premajor standing or consent of instructor. Basic statistical procedures and their application to research and practice in various areas of psychology.

**42. Research Methods in Psychology (6 units).** Lecture, two hours; laboratory, four hours. Prerequisites: courses 10, 41, with grades of C- or better. Introduction to research methods and critical analysis in psychology. Lecture and laboratory topics include experimental and nonexperimental research methods, statistical design and analysis as applied to a broad range of basic and applied research issues.

**85. Introduction to Cognitive Science.** (Formerly numbered 97.) Lecture, three hours. Exploration of computer metaphor of mind as an information-processing system, focusing especially on perception, knowledge representation, and thought based on research in cognitive psychology, neuropsychology, and artificial intelligence. Many examples from visual information processing.

**88A-88Z. Lower Division Seminars.** (Formerly numbered 88.) Seminar, three hours. Prerequisite: course 10. Limited to freshmen and sophomores. Intensive analysis in seminar situations of selected topics of current psychological interest. Consult *Schedule of Classes* for topics and instructors. May be repeated for credit:

**88A. Stress, Adaptation, and Coping.** Prerequisite: freshman standing. Physiological and psychological processes related to stresses and strains of daily living and potential relation of these processes to disease states. Examination of multifaceted nature of coping with stressors and exploration of strategies for stress management. P/NP or letter grading.

Mr. Grijalva

**97. Variable Topics in Psychology.** Lecture, three hours. Prerequisite: course 10 or 11. Study of selected topics in psychology at introductory level; lecture format designed for freshmen and sophomores.

### Upper Division Courses

**M107. Asian American Personality and Mental Health.** (Same as Asian American Studies M107.) Lecture, three hours. Prerequisite: course 10. Foundations of personality development and mental health among Asian Americans. Topics include culture, family patterns, achievements, stressors/resources, and immigrant and minority group status.

**110. Fundamentals of Learning.** Lecture, three hours; discussion, one hour. Prerequisites: courses 10, 41, junior standing. Experimental findings on animal and human conditioning; retention and transfer of training; relation of learning and motivation. Intended to provide empirical basis for theory and research in this area.

**111. Learning Laboratory.** Lecture, two hours; laboratory, three hours. Prerequisites: courses 41, 42, 110 (may be taken concurrently), psychology major standing. Laboratory experience with techniques in study of learning, especially with animals.

**112A. Basic Processes of Motivated Behavior.** Lecture, 90 minutes; discussion, 90 minutes. Prerequisites: courses 10, 41, 110, junior standing. Examination of some basic processes underlying motivated behavior, stressing environmental determinants of behaviors such as feeding, drinking, and reproduction-related behavior. Discussion of physiological mechanisms that contribute to such behaviors. Consideration of topics such as reinforcement, acquired motivation, and drug addiction. Evaluation of evidence obtained in laboratory studies conducted with animals.

**112B. Psychobiology of Fear and Anxiety.** Lecture, three hours. Prerequisites: courses 10, 41, 110, junior standing. Presentation of biological and behavioral approaches to fear and anxiety, taken from laboratory and applied research. In addition to overview of major principles from each approach, emphasis on areas in which significant research advances have recently occurred. Examination of concordance and discordance between results from laboratory and applied research.



**112C. Principles of Skill Acquisition.** Lecture, three hours. Prerequisites: course 110 or 120 (recommended), and psychology major standing or consent of instructor. Investigation into principles of human skill learning, with focus on general principles of skill learning derived from laboratory settings. These principles have relevance to various industrial or occupational settings, musical performances, vehicle control, sport, and other activities in which complex perceptual-motor skills must be acquired with practice. Major topics include laboratory measurement procedures, effective structure of practice settings, feedback and knowledge of results, learning of automaticity, individual differences, and evaluation of various theories of skill learning.

**113. Behavior and Alcohol Laboratory.** Discussion, two hours; laboratory, four hours. Prerequisites: courses 10, 41, 42. Students conduct an experiment studying effects of alcohol on learning and complex processes using paid volunteers. Examination of set and setting and role of individual differences in relation to current theories of alcohol use and abuse.

**113H. Behavior and Alcohol Laboratory (Honors).** Discussion, two hours; laboratory, four hours. Prerequisites: courses 10, 41, 42. Honors course parallel to course 113.

**114. Alcoholism.** Prerequisite: upper division standing. Theories and research on impact, causes, characteristics, and treatment of alcoholism considered from a biobehavioral point of view.

**115. Principles of Behavioral Neuroscience.** Lecture, three hours; discussion, one hour. Prerequisites for majors: course 41, Biology 2, junior standing; for nonmajors: Biology 5, 9, consent of instructor. Nervous system anatomy, physiology, pharmacology, and their relationship to behavior.

**116. Behavioral Neuroscience Laboratory.** Lecture, one hour; laboratory, three hours. Prerequisites: courses 41, 42, 115 (may be taken concurrently), psychobiology or psychology major standing. Laboratory experience with various topics in behavioral neuroscience.

**M117A-M117B-M117C. Neuroscience: From Molecules to Mind (5 units each).** (Same as Biology M175A-M175B-M175C, Neuroscience M101A-M101B-M101C, and Physiological Science M180A-M180B-M180C.) Lecture, four hours; discussion, one hour.

**M117A. Cellular Mechanisms.** Prerequisites: Biology 9, Chemistry 132A, Physics 3B or 6B or 8C. Cellular physiology, pharmacology, molecular biology, and development of nervous system.

**M117B. Integrative Mechanisms.** Prerequisite: course 115 (or Biology 171 or Physiological Science 111A) or M117A (or Biology M175A or Neuroscience M101A or Physiological Science M180A). Central and reflex mechanisms of homeostasis, sensory information processing, and motor control.

**M117C. Neural Bases of Behavior.** Prerequisite: course 115 (or Biology 171 or Physiological Science 111A) or M117B (or Biology M175B or Neuroscience M101B or Physiological Science M180B). Neural mechanisms underlying motivation, learning, and cognition.

**118. Comparative Psychobiology.** Prerequisites: course 115, junior psychology major standing. Survey of determinants of species-specific behavior, including genetic influences and learning.

**119A. Neuropsychopharmacology.** (Formerly numbered 119C.) Lecture, three hours. Prerequisites: course 115, junior standing. Analysis of basic pharmacologic principles to include interaction of drugs with neurochemically significant substances in the brain.

**119AH. Neuropsychopharmacology (Honors).** (Formerly numbered 119CH.) Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Honors course parallel to course 119A.

**119B. Human Neurophysiology.** Lecture, three hours. Prerequisites: course 115, junior standing. Exploration of biological basis of human cognitive processing, with emphasis on function of cerebral cortex.

**119D. Behavioral Pharmacology.** Prerequisites: course 115, junior standing. Experimental and theoretical treatment of drug-behavior relationships. Particular emphasis on behavior and pharmacological mechanisms of drug action and interaction with neuronal function.

**119DH. Behavioral Pharmacology (Honors).** Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Experimental and theoretical treatment of drug-behavior relationships; pharmacological approaches to mood, aggression, learning, motivation; experimental studies of addiction.

**119E. Stress and Bodily Disease.** Lecture, three hours. Prerequisites: course 115, junior standing. Psychobiological processes as they pertain to development of stress responses and disease states. Consideration of stress-related topics, including behavioral and pharmacological variables in stress and stress management.

**119F. Neuron Circuitry and Behavior.** Prerequisites: course 115, Biology 171, and junior standing, or consent of instructor. Presentation of current data and theory concerning how neuron circuits produce behavior. Mechanisms of perception, response selection, motor pattern generation, learning, and motivation, with emphasis on operation of these processes in well-defined neural circuits.

**119G. Psychobiology of Pain and Pain Inhibition.** Lecture, three hours. Prerequisites: course 115 and senior standing, or consent of instructor. Lectures and discussions on neural mechanisms of pain and problem of chronic pain disease.

**119I. Psychophysiology of Motivation.** Lecture, three hours. Prerequisites: course 115, junior standing. Basic psychophysiology, including brain and endocrine mechanisms, involved in control of motivation. Discussion of homeostatic drives such as hunger and thirst and nonhomeostatic drives such as reproduction behavior.

**M119J. Ethology: Physiology of Behavior and Learning in Animals.** (Same as Psychiatry M190.) Prerequisites: course 115, junior standing. Basic course for undergraduate students which integrates systematic overview of common forms of behavioral plasticity and standard training procedures in laboratory animals (in behavioral, neurophysiological, and pharmacological studies) with broad biological, evolutionary perspective.

**M119K. Evolution of Intelligence.** (Same as Psychiatry M119.) Lecture, two hours; discussion, two hours. Prerequisites: course 15 or 115, introductory statistics course, junior or senior standing, consent of instructor. Intelligence treated as neural information-processing capacity; its evolution in vertebrates correlated with evolution of enlarged brains. Quantitative approaches in evolutionary biology and neurosciences.

**119L. Human Neuropsychology.** Lecture, two hours. Prerequisites: courses 115, 120, consent of instructor. Survey of experimental and clinical human neuropsychology; neural basis of higher cognitive functions.

**119M. Physiological Psychology of Learning.** Lecture, 90 minutes; discussion, 90 minutes. Prerequisites: course 115 and junior standing, or consent of instructor. Introduction to classical and current literature on mechanisms of learning, considering both cell-biological mechanisms and brain circuitry.

**119N. The Visual System.** Lecture, three hours. Prerequisite: junior standing. The ability to image and analyze the visual world is a truly remarkable feat. Coverage of anatomy and physiology of visual processing from the retina to visual cortex through lectures, extensive reading, and discussions.

**120. Cognitive Psychology.** Lecture, three hours; discussion, one hour. Prerequisites: courses 10, 41, junior standing. Survey of cognitive psychology: how people acquire, represent, transform, and use verbal and nonverbal information. Perception, attention, imagery, memory, representation of knowledge, language, action, decision making, thinking.

**121. Laboratory in Cognitive Psychology.** Prerequisites: courses 10, 41, 42, 120 (may be taken concurrently), psychology or cognitive science major standing. Laboratory experience with methods and phenomena from research on human perception, memory, and cognition.

**122. Language and Communication.** Lecture, three hours. Prerequisite: course 10. Introduction to psychology of language and communication; verbal and non-verbal channels; interlinguistic and intralinguistic variation; animal communication; biological bases of language; production and comprehension of speech and writing; relation to perception, memory, and thought; conversational interaction; language development.

**123. Psycholinguistics.** Prerequisite: junior standing. Current theory and research in psycholinguistics: survey of language acquisition, language perception, and language production; language physiology and pathology; problems of representation, sequencing, and timing in language and other cognitive skills; errors in speech production and perception.

**124A. Sensation and Perception.** (Not the same as course 124A prior to Fall Quarter 1990.) Lecture, three hours. Prerequisites: courses 10, 41, 120, junior standing. Contemporary research and theory about visual and auditory perception. Topics include physiological mechanisms, psychophysical studies and models, and computational approaches.

**124B. Visual Information Processing.** Lecture, two hours; discussion, one hour. Prerequisites: courses 10, 41, and 120, or consent of instructor. Exploration of issues in visual information, such as storage and representation of visual information in memory, pattern recognition, nature and role of attention in visual processing, word and picture recognition, object perception, and imagery. Possible consideration of developmental aspects.

**124C. Human Memory.** Lecture, two hours; discussion, one hour. Prerequisites: course 120, junior standing. Analysis of recent research on basic processes and structural components that comprise the human memory system. Discussion topics include practical implications of such research for instruction, marketing, and witness testimony.

**124D. Principles of Human Performance.** Prerequisite: psychology major standing or consent of instructor. Investigation into laboratory-based methods and principles of human performance. Major topics include research methods for human performance, central control of movements, anticipation and timing, automaticity, sensory involvement in action such as vision and kinesthesia, role of reflexes, speed-accuracy trade-offs, and individual differences and abilities. Principles discussed should have relevance for numerous real-world situations in which complex perceptual-motor skills are required, such as in industrial or occupational settings, musical performances, vehicle control, and sport.

**124E. Language and Cognition.** Seminar, three hours. Prerequisites: courses 10, 41, 120, junior standing. Recent theories of language and cognition; nature of categories, feedback, and error detection in language and cognition; modularity; ambiguity; knowledge acquisition; processes and representations underlying perception, production, attention, and awareness in language and cognition.

**124F. Thinking.** Lecture, three hours. Prerequisite: course 120. Analysis of experimental studies of human categorization, reasonings, decision making, problem solving, creativity, and related topics.

**127. Abnormal Psychology.** Lecture, three hours. Prerequisite: course 10. Study of dynamics and prevention of abnormal behavior, including neuroses, psychoses, character disorders, psychosomatic reactions, and other abnormal personality patterns.

**127H. Abnormal Psychology (Honors).** Lecture, three hours. Prerequisite: consent of instructor. Overview of characteristics of major forms of psychopathology, theories and research on causes of disorder, types of treatment, social and legal issues in mental illness.

**129A. Personality Measurement.** Lecture, three hours. Prerequisites: courses 10, 41. Rationale, methods, and content of studies dealing with problems of describing persons in terms of a limited set of dimensions. Detailed consideration of research literature dealing with a few representative personality dimensions.

**129B. Introduction to Psychoanalysis.** (Not the same as course 129B prior to Summer Quarter 1990.) Lecture, three hours. Prerequisites: courses 10, 41. Development of Freud's ideas from 1895 to 1926, with emphasis on how his theory evolved from a drive-based reinforcement model to the structural theory in which unconscious fantasy plays a crucial role. Coverage of developments beyond Freud, especially work of the British school under leadership of Klein, Winnicott, and Bion.

**129E. Human Sexuality.** Lecture, three hours. Prerequisite: senior psychology major standing. Overview of psychology of human sexuality. Psychological research, assessment, and therapy described in a format which highlights their significance for understanding human sexual functioning. Psychological mechanisms underlying expression of human sexuality.

**130. Developmental Psychology.** Lecture, three hours; discussion, one hour. Prerequisites: courses 10, 41, junior standing. Elaboration of developmental aspects of physical, mental, social, and emotional growth from birth to adolescence.

**132. Learning Disabilities in Perspective.** Lecture, three hours. Prerequisite: upper division standing. Exploration of different orientations to persons with learning problems, emphasizing assessment and intervention approaches and psychological impact of such approaches. Topics include interaction of learner and environment, sociopolitical nature of classroom, psychological impact of schooling, grades, and evaluations, process vs. goal focus in learning.

**133A. Adolescent Development.** Lecture, three hours. Prerequisite: course 130. Examination of cognitive, social, physical, and physiological development of the adolescent.

**133B. Seminar: Cognitive Development.** Seminar, three hours. Prerequisite: course 10, 41, 120, or 130. Major theories, approaches, and issues in study of cognitive development. Readings include original research on important topics such as development of perception, language, thinking, and problem solving, and acquisition of concepts and domain-specific language. (Sp)

**133BH. Seminar: Cognitive Development (Honors).** Seminar, three hours. Prerequisite: consent of instructor. Honors course parallel to course 133B. (Sp)

**133D. Social and Personality Development.** Lecture, two hours; discussion, one hour. Prerequisites: courses 10, 41, 130. Advanced course that surveys theory and research on social and personality development during childhood. Topics include parent/child attachment, temperament, self-control, aggression, sex-typing, self-concept, moral reasoning and behavior, social status and social skills, and peer group relations.

**134. Psychology and Education.** Lecture, three hours. Prerequisites: courses 10, 130. Application of principles of cognitive development, learning, and perception to educational problems. Topics include general instructional issues, psychology of reading and mathematics, exceptional children, early childhood education, and education of the disadvantaged.

**135. Social Psychology.** Lecture, three hours; discussion, one hour. Prerequisites: courses 10, 41, junior standing. Interrelationships between the individual and his social environment. Social influences on motivation, perception, and behavior. Development and change of attitudes and opinions. Psychological analysis of small groups, social stratification, and mass phenomena.

**136A. Social Psychology Laboratory.** Lecture, one hour; laboratory, four hours. Prerequisites: courses 41, 42, 135 (may be taken concurrently), psychology major standing. Introduction to research designs and methods used to test social psychological hypothesis, including experiments, observation, content analysis, and/or questionnaires.

**136B. Nonexperimental Methods in Social Psychology.** Lecture, two hours; laboratory, two hours. Prerequisites: courses 41, 42, psychology major standing. Research experience with experimental methods for study of social attitudes or behavior, including fieldwork with survey research, naturalistic observation, or questionnaires.

**137B. Attitude Formation and Change.** Lecture, three hours. Prerequisites: courses 10, 41, 135. Structure and functions of attitudes, their measurement, how they develop, and methods for changing them.

**137C. Close Relationships.** Lecture, three hours. Prerequisite: course 10 or 41 or 135 or consent of instructor. Examination of research and theory about friendship, dating, and marriage, with emphasis on how these relationships are affected by gender and changing sex roles.

**137D. Introduction to Health Psychology.** Prerequisite: course 10. Areas of health, illness, treatment, and delivery of treatment that can be elucidated by understanding of psychological concepts and research, psychological perspective on these problems, and how psychological perspective might be enlarged and extended in the medical area.

**M137E. Work Behavior of Women and Men.** (Same as Women's Studies M137E.) Prerequisite: course 10 or Women's Studies 10 or senior standing. Examination of work behavior of women and men. Topics include antecedents of career choice, job findings, leadership, performance evaluation, discrimination and evaluation bias, job satisfaction, and interdependence of work and family roles.

**137I. Interpersonal Influence and Social Power.** Lecture, three hours. Prerequisite: course 135. Theory and research focusing on how people influence one another and resist such influence, and on the bases of social power. Motivations and effects of influence for the powerholder and target of influence. Applications to such problems and issues as power and leadership in organizations, interpersonal influence and health, power relationships in the family, interpersonal influence in everyday life, social power of political figures.

**M137J. Psychology of Language and Gender.** (Formerly numbered 137J.) (Same as Communication Studies M124 and Women's Studies M137J.) Lecture, three hours. Prerequisites: course 10 or equivalent, junior standing. Examination of current topics at intersection of gender and language. Topics include sex differentiation in language cross-culturally; sex bias in lexicon and usage; sex differences in lexicon, syntax, phonology, and nonverbal behavior; development of sex-differentiated language in children; "women's" and "men's" language in various racial/ethnic/class/sexual preference groups; and conversational interaction.

**M138. Political Psychology.** (Same as Political Science M140.) Prerequisite: course 10. Examination of political behavior, political socialization, personality and politics, racial conflict, and psychological analysis of public opinion on these issues.

**M142. Advanced Statistical Methods in Psychology.** (Same as Psychiatry M142.) Lecture, two hours; discussion, 90 minutes. Prerequisite: course 41. Survey of statistical techniques commonly used in psychology, education, and behavioral and social sciences: correlational techniques, analysis variance, and multiple regression.

**144. Psychological Tests and Evaluation.** Prerequisite: course 41. Further study of principles of measurement, stressing basic concepts. Application to problems of test construction, administration, and interpretation.

**150. Mathematical Models in Psychology.** Lecture, two hours; discussion, two hours. Prerequisites: Mathematics 3C or 31B, Computer Science 10C or 10F, or consent of instructor. Review of theoretical models and experimental evidence for these models in various areas of psychology. Topics include mathematical computer models of learning, perception, cognition, and personality.

**151. Computer Applications in Psychology.** Lecture, two hours; discussion, two hours. Prerequisites: Computer Science 10C or 10F, consent of instructor. Topics include hardware and software computer problems in design, control, and analysis of experiments; programming problems arising in evaluation of models of psychological processes of various content areas such as learning, perception, social, personality, and clinical.

**M163. Death and Suicide: Psychological and Sociological Aspects.** (Same as Sociology M138.) Lecture, three hours. Prerequisite: junior standing. Definition and taxonomy of death; new permissiveness and taboos related to death; romanticization of death; role of the individual in his own demise; modes of death; development of ideas of death through life span; ways in which ideas of death influence conduct of lives; impact of dying on social structure surrounding the individual; preventive, interventive, and postventive practices in relation to death and suicide; partial death; megadeath; lethality; psychological autopsy; death of institutions and cultures. P/NP grading recommended (letter grading required if course to be applied toward psychology or sociology major).

**M165. Psychology of Gender.** (Same as Women's Studies M165.) Lecture, three hours. Consideration of psychological literature relevant to understanding contemporary sex differences. Topics include sex-role development and role conflict, physiological and personality differences between men and women, sex differences in intellectual abilities and achievement, and impact of gender on social interaction.

**168. Environmental Psychology.** Lecture, three hours. Prerequisites: courses 10, 41. Research-oriented course which surveys theoretical and methodological issues which comprise the area of environmental psychology. Discussion of basic dimensions of emotional response to physical and social environments, measurement of information of rate of situations, and personality variables that are relevant to environmental theory. Residential, therapeutic, work, and recreational environments within a unified framework.

**170A. Behavior Modification.** Lecture, three hours. Prerequisite: upper division standing or consent of instructor. Applied behavior theory; study of application of principles derived from learning theory, as in classical and instrumental (operant) conditioning, to treatment of developmentally disabled, autistic, and schizophrenic children, adult schizophrenics, affective disorders, anxiety states, drug abuse, marital discord, etc. Lectures, discussions, and demonstrations.

**170B. Fieldwork in Behavior Modification.** Discussion, two hours; fieldwork, six hours. Prerequisites: course 110 with a grade of A or 170A, consent of instructor. Fieldwork in applied behavior theory, especially to problems of retarded and autistic children.

**170C. Advanced Fieldwork in Behavior Modification for Non-Psychology Majors.** Lecture, two hours; fieldwork, six hours. Prerequisites: course 170B, consent of instructor. Not open to students with credit for course 171A. Does not fulfill laboratory requirement for majors. Advanced fieldwork in applied behavior theory, especially related to problems of retarded and autistic children. Review of current research in the field. May not be applied as an elective toward any Psychology Department major.

**171A. Advanced Fieldwork in Behavior Modification for Psychology Majors.** Discussion, two hours; fieldwork, six hours; to be arranged, 20 hours. Prerequisites: course 170B, psychology major standing, consent of instructor. Advanced fieldwork in applied behavior theory, especially related to problems of retarded and autistic children. Students design and carry out individualized experimental study to evaluate behavioral interventions with developmentally disabled clients.

**171B. Practicum: Design and Implementation of Behavioral Interventions.** Discussion, two hours; fieldwork, six hours; to be arranged, 20 hours. Prerequisites: course 171A, consent of instructor. Design and implementation of behavioral interventions with developmentally disabled children. Topics include goal selection, ethical considerations, behavioral contracting, client right and human use procedures, home and community management, parent and staff training, working with schools, clinical issues.

**M172. The Afro-American Woman in the U.S.** (Same as Afro-American Studies M172 and Women's Studies M172.) Prerequisite: upper division standing. Impact of social, psychological, political, and economic forces which impact on interpersonal relationships of Afro-American women as members of a large society and as members of their biological and ethnic group.

**173. Advanced Abnormal Psychology.** Lecture, three hours. Prerequisites: courses 10, 41, 127. Examination of research and theory concerning origins, course, and outcomes of disordered behavior. Focus on continuity and change in patterns of behavior, assessment methods, and research approaches. Concentration on one of following: childhood disorders, anxiety and stress, the schizophrenias, or mood disorders.

**174. Interpersonal Process Analysis.** Lecture, two hours; laboratory, three hours. Prerequisites: courses 41, 42, 127, psychology major standing. Introduction to conceptual tools for analyzing interpersonal structures and functions in goal-oriented human interaction such as psychotherapy, persuasion, courtship, etc. Small group exercises integrated with lecture and discussion (additional laboratory work to be arranged).

**175. Community Psychology.** Prerequisites: junior or senior psychology major standing, consent of instructor. Application of psychological principles to understanding and solution of community problems. Topics include community development, community mental health problems, drugs, racism, and rehabilitation of prisoners.

**M176. Communication and Conflict in Couples and Families.** (Same as Communication Studies M116.) Lecture, 90 minutes; discussion, 90 minutes. Prerequisites: courses 10 or 11, 41, and 127, or consent of instructor. Examination of (1) dysfunctional communication and conflict in couples and families and (2) relationship of these processes to individual psychopathology, marital discord, and family disruption (e.g., separation and divorce).

**177. Counseling Relationships.** Prerequisites: courses 10, 41, 127, junior or senior standing, and consent of instructor, or junior or senior psychology major standing. Conceptual and empirical foundations of psychological counseling; comparison of alternative models of counseling processes. Emphasis on counseling approaches in community mental health areas such as drug abuse, suicide prevention, and crisis intervention.

**178. Human Motivation.** Lecture, three hours. Prerequisite: upper division standing. Examination of theories of human motivation, experimental findings supporting the theories, and history of study of motivation. Topics include sociobiology, conflict, aspiration level, achievement strivings, and causal attributions. (W)

**179A. Health Behavior and Health Status of Ethnic Groups: Behavioral Perspective.** (Formerly numbered 179.) Lecture, three hours. Prerequisites: course 10 or 11 or Community Health Sciences 270, junior or senior standing. Survey course of psychological aspects of health behavior and health status in major ethnic groups in the U.S. Emphasis on major diseases outlined by the U.S. Public Health Service (USPHS).

**179B. Biomedical and Psychosocial Aspects of AIDS/HIV.** Lecture, three hours. Prerequisites: course 137D or 179A or Health Services 100, junior or senior standing. Basics of epidemiology of the disease, routes of transmission, clinical characteristics of AIDS, neurological and psychological aspects of coping with HIV infection and AIDS. Presentation of biologic, behavioral, and therapeutic interventions.

**M180A. Contemporary Problems in Mental Retardation.** (Same as Psychiatry M180A.) Prerequisites: courses 10, 41, and 127 or 130. Corequisites: courses M181A-M181B. Limited to Immersion Program students. Presentation of concepts, issues, and research techniques in the area of mental retardation. Biological, psychological, and community questions concerning causes and treatment of developmental disabilities, as well as systems for care and training of retarded individuals. Lectures, directed reading, and discussion.

**M180B. Contemporary Issues in Mental Retardation.** (Same as Psychiatry M180B.) Prerequisite: course M180A. Limited to Immersion Program students. Psychoeducational issues in mental retardation relating literature to ongoing field experiences through lectures, discussions, media, and six student papers.

**M181A-M181B. Research in Contemporary Problems in Mental Retardation.** (Same as Psychiatry M181A-M181B.) Corequisites: courses M180A, M180B. Research experience. In Progress grading.

**186A. Cognitive Science Laboratory: Introduction to Theory and Simulation.** (Formerly numbered 186.) Lecture, two and one-half hours; discussion, 30 minutes; laboratory, three hours. Prerequisites: course 85, Program in Computing 15, and junior departmental major standing or consent of instructor. Models in several psychological domains (e.g., visual perception, categorization, reasoning, and problem solving). Types of models include semantic networks, search, production systems, connectionist networks, and mathematical models. Lectures and discussions interwoven with computer simulations written in common LISP.

**186B. Cognitive Science Laboratory: Neural Networks.** (Formerly numbered 186.) Lecture, two and one-half hours; discussion, 30 minutes; laboratory, three hours. Prerequisites: course 85, Program in Computing 10A, 10B (or PASCAL), and junior departmental major standing or consent of instructor. Recommended: knowledge of calculus. Lectures and laboratory work in neural network modeling of perception and cognition. Specific topics include essential neurophysiology, basic architectures, learning, and programming techniques. Principles illustrated and discussed in context of models of specific perceptual and cognitive processes. Simulations written in PASCAL.

**187. Psychology and Law.** Lecture, two hours; discussion, one hour. Prerequisite: junior standing. Study of new topics on legal psychology, including suspect identification, witness reports, and police procedures. Outside speakers utilized in presentation of these materials. Students participate in presentations and/or discussions.

**187H. Psychology and Law (Honors).** Lecture, two hours; discussion, one hour. Prerequisites: junior standing, consent of instructor. Honors course parallel to course 187.

**188. Fieldwork in Cognitive Science.** Lecture, two hours; fieldwork (approved community setting), six hours. Prerequisites: cognitive science major standing, department consent. Fieldwork in applications of cognitive science. Consult Undergraduate Advising Office, 1531 Franz Hall, for contracts and further information. May be repeated once for credit. P/NP grading.

**189. Human Factors.** Lecture, two hours; discussion, one hour. Prerequisites: courses 10, 110, sophomore standing. Principal objective of human factors psychology is optimization of human/machine productivity and efficiency while ensuring human safety. Research from engineering, computer science, and psychology combined for design of systems for human use. Contemporary applications include health care, safety systems, pollution control, transportation, and urban design.

**190A-190B-190C. Honors Course.** Seminar, two hours. Prerequisite: psychology honors program standing. Opportunity for development and analysis of creative ideas through individual research projects with a faculty sponsor and discussion of student and faculty research presentations. Information and applications may be obtained from Undergraduate Advising Office, 1531 Franz Hall. If approved in advance by Undergraduate Office, course 190C may be applied toward elective course requirement for any Psychology Department major.

**192. Practicum in Teaching Psychology.** Prerequisites: junior or senior psychology, cognitive science, or psychobiology major standing, consent of department. Training and supervised practicum for advanced undergraduates in teaching psychology. Students serve as junior teaching assistants and assist in preparation of materials and development of innovative programs. Consult Undergraduate Advising Office, 1531 Franz Hall, for contracts and further information. Only 12 units from courses 192, 193, and 194 may be applied toward undergraduate degree. May not be applied toward course requirements for any Psychology Department major. P/NP grading.

**193. Fieldwork in Psychology.** Seminar, two hours; fieldwork (approved community setting), six hours. Prerequisites: sophomore prepsychology, precognitive science, prepsychobiology, psychology, cognitive science, or psychobiology major standing, consent of department. Fieldwork in applications of psychology. Consult Undergraduate Advising Office, 1531 Franz Hall, for contracts and further information. Only 12 units from courses 192, 193, and 194 may be applied toward undergraduate degree. May not be applied toward course requirements for any Psychology Department major. P/NP grading.

**194. Research in Psychology.** Seminar, one hour; internship (approved research setting), seven hours. Prerequisites: sophomore prepsychology, precognitive science, prepsychobiology, psychology, cognitive science, or psychobiology major standing, consent of department. Practical applications of psychology through research. Consult Undergraduate Advising Office, 1531 Franz Hall, for contracts and further information. Only 12 units from courses 192, 193, and 194 may be applied toward undergraduate degree. May not be applied toward course requirements for any Psychology Department major. P/NP grading.

**197. Current Issues in Psychology.** (Formerly numbered 195.) Lecture, three hours. Prerequisite: junior or senior major standing (some sections may require consent of instructor). Study of selected current topics of psychological interest. Consult *Schedule of Classes* for topics and instructors. Only one graded 197 course may be applied as an elective toward psychology major. If content is approved in advance by Undergraduate Advising Office, psychobiology and cognitive science majors can petition to use course to satisfy an elective requirement. May be repeated for credit with consent of department.

**199. Directed Individual Research and Studies.** Prerequisites: junior or senior psychology, psychobiology, or cognitive science major standing (juniors must have at least 3.0 GPA in the major), consent of instructor and vice chair for Undergraduate Affairs (based on written proposal outlining course of study). Consult Undergraduate Advising Office, 1531 Franz Hall, for further information and approval forms. Only one four-unit 199 course may be taken per term and only one for a letter grade (additional 199 courses may be taken on a P/NP basis). If approved in advance by Undergraduate Office, four units of course 199 may be applied toward elective course requirement for psychology major and toward Psychology 188 requirement for cognitive science major.

## Graduate Courses

**200A. Animal Learning and Behavior.** Basic principles and characteristics of learning and behavior, including Pavlovian conditioning, instrumental learning, and species-specific behavior.

**200B. Human Learning and Behavior.** Topics include human learning and conditioning and application of learning principles in etiology and treatment of a variety of socially significant problems. Special emphasis on systematic desensitization of anxiety states, behavior modification programs for schizophrenic children and adults, behavioral pharmacology, control of autonomic behavior, among others.

**201. Current Issues in Learning and Behavior (1 unit).** Discussion, 90 minutes. Prerequisite: graduate standing. Required of learning and behavior students a minimum of four times (entire first year and winter of second year). Presentation of papers of current interest in learning, behavior, or applied behavioral analyses by experts in the field. Evaluation of their significance and methodology in detail. May be repeated for credit. S/U grading. Mr. Fanselow, Mr. Minor

**204A. Psychophysiology of Attention and Learning.** Lecture, three hours. Study of research and theories concerned with psychophysiology of attention and learning primarily in humans. Concepts and areas include orientating reflex, dominant focus, classical conditioning, and their implications for psychopathology of psychopathology and psychotherapy. Mr. Maltzman

**204B. Theories of Learning.** Discussion, three hours. Prerequisite: course 200A or equivalent. Critical discussion and in-depth analysis of current major theoretical approaches to associative learning, with emphasis on recent experimental analyses of conditioning phenomena. Mr. Fanselow

**204C. Applied Learning.** Lecture, three hours. Prerequisites: graduate standing in psychology, consent of instructor. Lectures and discussion on current research in application of learning principles to clinical and social problems such as alcohol and drug abuse, aggression, fear management, mental retardation, behavioral medicine, autism/schizophrenia, etc. Mr. Lovaas

**204D. Fear and Anxiety.** Lecture, three hours. Prerequisite: graduate training. Presentation of theoretical and empirical advances, from biological and behavioral perspectives, in the area of fear and anxiety. Integration of animal and human research. Ms. Craske, Mr. Fanselow, Mr. Minor

**204E. Primitive Motivational Processes.** Lecture, three hours. Prerequisite: graduate standing. Analysis, using a behavioral systems approach, of basic motivated behavior such as feeding, drinking, foraging, and reproduction. Same approach also applied to phenomena such as acquired motivation, reinforcement, and drug addiction. Historical survey of behavioral analyses of motivation and goal-directed behavior. Mr. Fanselow

**205A. Behavioral Neuroendocrinology (2 units).** (Formerly numbered 205A-205B.) Lecture, three hours. Prerequisite: graduate standing. Mechanisms of hormone action on the brain that influence behavior, including permanent actions in development and transient actions in adulthood. Using a comparative approach, topics include sexual differentiation, long-term effects of stress, seasonal and other changes in adulthood, and aging. Mr. Arnold

**205B. Human Neurophysiology (2 units).** (Formerly numbered 205A-205B.) Lecture, three hours. Prerequisite: graduate standing. Examination of higher cognitive processes in terms of neural mechanisms that underlie them. Topics include cortical modularity and organization, coordinated sensory representation, language, regional functional specialization, attention, and regulation of cortical function by extracortical systems. Mr. Beatty

**205C. Neurotransmitters in Human Disorders of Motor and Cognitive Function (2 units).** Lecture, three hours. Prerequisite: graduate standing. Detailed analysis of molecules involved in interneuronal communication processes (i.e., neurotransmitters, neurohormones, "neuromodulators," neurotropic agents). Discussion of their roles in normal brain physiology, followed by detailed analyses of their perturbations in various disease states. Particular emphasis on current and past thinking about Alzheimer's disease, Parkinsonism, Huntington's disease, and Down's syndrome dementia. Mr. Butcher

**205D. Clinical Psychopharmacology (2 units).** (Formerly numbered 205A-205B.) Lecture, three hours. Prerequisite: graduate standing. General principles of brain neurotransmitters, including synthesis, cell bodies and pathways, and receptor subtypes. General principles of drug administration and pharmacokinetics. Major classes of psychoactive drugs, animal models, and "atypical" compounds. Mr. Ellison

**205E. Psychobiology of Emotion and Stress (2 units).** (Formerly numbered 205A-205B.) Lecture, three hours. Prerequisite: graduate standing. Overview of literature on role of the brain and autonomic and endocrine systems in emotion and stress-related responses. Some emphasis on involvement of neurotransmitters, neuropeptides, and hormones in emotional plasticity, visceral function, and bodily diseases. Mr. Grijalva

**205F. Physiology of Learning (2 units).** (Formerly numbered 205A-205B.) Lecture, three hours. Prerequisite: graduate standing. Search for anatomical loci of engrams. Cell biology of plasticity, including electrophysiological and molecular approaches. Theories of how neural circuitry might be organized to make learning possible. Mr. Krasne

**205G. Pain (2 units).** (Formerly numbered 205A-205B.) Lecture, three hours. Prerequisite: graduate standing. Consideration of pain from both basic science and clinical perspectives. Discussion of nociceptors, spinal cord, brain mechanisms, pain inhibition, and role of endogenous opioids. Effects of pain and stress on immunity. Mr. Liebeskind

**205I. Motor Coordination (2 units).** (Formerly numbered 205A-205B.) Lecture, three hours. Prerequisite: graduate standing. Elementary and complex units of behavior: reflexes, servomechanisms, oscillators, and central pattern generators. Principles of coordination: efference copy, oscillator coupling, potentiation, and depotentiation. Relation between levels of integration and anatomical levels: transections, lesions, focal stimulation, and single unit recording. Mr. Gallistel

**205J. Homeostatic Drive, Hunger, and Thirst (2 units).** (Formerly numbered 205A-205B.) Lecture, three hours. Prerequisite: graduate standing. Homeostasis used as framework within which ingestive behavior is discussed. Analysis of thirst on basis of depletions of body fluid compartments. Consideration of hunger, focusing on two theories — "Glucostatic" and "Energostatic." Mr. Novin

**205K. Vision Neurobiology (2 units).** (Formerly numbered 205A-205B.) Lecture, three hours. Prerequisite: graduate standing. Exploration of anatomy, physiology, and computation in visual system, focusing on retina, visual cortex, and overall performance. Mr. Schein

**205L. Cognitive Neuroscience (2 units).** (Formerly numbered 205A-205B.) Lecture, three hours. Prerequisite: graduate standing. Overview of neural basis of higher cognitive functions, integrating anatomical, physiological, and behavioral approaches and incorporating clinical and experimental data. Systems covered include attention, perception, memory, language, and hemispheric specialization. Mr. Zaidel

**205Z. Behavioral and Systems Neuroscience.** (Formerly numbered M209.) (Same as Neuroscience M205 and Physiological Science M205.) Lecture, three hours. Prerequisites: Neuroscience M201, M202, M203, and M204, or consent of instructor. Introduction to fundamentals of behavioral and systems neuroscience, with emphasis on role of behavioral analysis in understanding the functioning of nervous system and identifying anatomical circuits, cell physiological processes, and molecular mechanisms that mediate behaviorally defined functions.

**206. Psychophysiology of Brain Function.** Modern concepts of functional organization of the brain, with particular reference to psychological phenomena and behavior. Recent advances in neurophysiology and electroencephalography bearing on perception, attention, drive, sleep-wakefulness, levels of consciousness, etc. Some emphasis on pathology of behavior resulting from brain injury. Mr. Beatty

**207A-207B-207C. Seminars: Physiological Psychology.** Prerequisite: course 115 or equivalent. Mr. Butcher, Mr. Ellison, Mr. Krasne

**208. Seminar: Comparative Psychobiology.** Mr. Arnold

**210. Comparative Psychobiology.** Prerequisites: course 115 or equivalent, consent of instructor. Survey of determinants of species-specific behavior, including genetic influences and learning. Mr. Arnold

**212. Evaluation of Research Literature in Physiological Psychology (1 unit).** Discussion, 90 minutes. Prerequisite: consent of instructor. Papers of current interest presented by members of seminar and their significance and methodology discussed and criticized in depth. May be repeated for credit. S/U grading.

**220A. Social Psychology.** Lecture, three hours. Prerequisite: graduate standing in psychology. Intensive consideration of concepts, theories, and major problems in social psychology. Ms. Peplau, Ms. Taylor

**220B. Research Methods in Social Psychology.** (Formerly numbered 224.) Lecture, three hours. Prerequisite: graduate standing in psychology or consent of instructor. Research design and methodological issues in experimental and nonexperimental social research. Mr. Collins

**220C. Advanced Social Psychology.** (Formerly numbered 220B.) Lecture, three hours. Prerequisite: course 220A or 220D. Review of contemporary topics and issues in social psychological research and theory. Ms. Dunkel-Schetter, Mr. Peilham

**220D. Introduction to Social Psychology.** (Formerly numbered 220C.) Lecture, three hours. Prerequisite: graduate standing. Introduction to theory and research in social psychology for students who are not psychology majors. Service course for graduate students in education, sociology, political science, management, public health, etc. Mr. Sidanius

**221. Seminar: Attitude Formation and Change.** Discussion, three hours. Prerequisites: courses 220A and 220B, or consent of instructor. Social psychological research and theories on opinions and attitudes. Effects of mass communication, social factors in assimilation of information and influence. Mr. Gerard

**222A. Interpersonal Relations.** Discussion, three hours. Prerequisite: course 220A or consent of instructor. Critical review of theory and research on interpersonal relations, with emphasis on friendship, dating, and marriage. Ms. Peplau

**222B. Interpersonal Influence and Social Power.** Seminar, three hours. Prerequisite: advanced social psychology course (psychological or sociological) or consent of instructor. Review of theory and research on interpersonal influence and social power, with applications to various power relationships such as supervisor/subordinate, health care professional/patient, doctor/nurse, parent/child, wife/husband, teacher/student, political figures, etc.

**223. Seminar: Social Survey Research.** (Formerly numbered 223A, 223B.) Lecture, three hours. Prerequisite: course 220B or consent of instructor. Contemporary issues and topics in social survey research methodology.

**225. Seminar: Critical Problems in Social Psychology.** Discussion, three hours. Prerequisites: courses 220A and 220B, or consent of instructor. May be repeated for credit with consent of instructor.

**226A-226B-226C. Current Literature in Social Psychology (2 units each).** (Formerly numbered 226.) Discussion, 90 minutes. Prerequisite for courses 226B-226C: consent of instructor for non-social psychology students. Course 226A is limited to first-year social psychology students. Recent and current research papers in social psychology presented by members of seminar and their significance and methodology discussed and criticized in depth. S/U grading.

(F, 226A; W, 226B; Sp, 226C)

**227. Health Psychology.** Lecture, two hours; discussion, one hour. Prerequisite: undergraduate degree or training in psychology. Psychological and social factors involved in etiology of illness, treatment and course of illness, long-term care and adjustment of chronically ill or disabled, and practice of institutional health care and self-care.

Ms. Taylor

**M228A. Proseminar: Political Psychology.** (Formerly numbered M228.) (Same as History M236A and Political Science M261A.) Discussion, three hours. Introduction to political psychology: psychobiography, personality and politics, mass attitudes, group conflict, political communication, and elite decision making.

Mr. Sears

**M228B. Seminar: Political Psychology.** (Formerly numbered M228.) (Same as Political Science M261D.) Discussion, three hours. Prerequisite: course 220A or Political Science M261A or consent of instructor. Examination of political behavior, political socialization, racial conflict, mass political movements, and public opinion.

Mr. Sears

**M228C. Critical Problems in Political Psychology.** (Same as Political Science M261E.) Discussion, three hours.

**229. Social Cognition.** Lecture, one hour; discussion, two hours. Social cognition is concerned with how people organize and interpret social information in their environment. Seminar provides broad background in the field and also gives depth and focus on particular research topics in the field. Weekly papers, as well as a lengthy final paper, required.

Ms. Taylor

**231. Psychology of Gender.** Seminar, three hours. Prerequisite: one prior course on gender/women's studies or consent of instructor. Critical evaluation of current research and theory concerning psychology of gender, drawing on work from various areas of psychology to understand sources of gender differentiation and its consequences for human behavior and social interaction.

Ms. Henley, Ms. Peplau

**232. Human Sexuality.** Lecture, three hours. Prerequisite: graduate standing. Designed to teach students how to carry out research on human sexual behavior. Contents include theory construction, scale development, physiological and endocrinological implications, radioimmunoassay (measuring hormones in blood sample), ethical issues, methodological and statistical considerations, measurement of sexual arousal, fantasy, and sexual dysfunction therapy. Discussion-oriented, with emphasis on operationalizing predictions concerning human sexual functioning.

Mr. Abramson

**233. Seminar: Environmental Psychology.** Prerequisites: courses 235, 250A, 250B. Critical review of work in environmental psychology designed to identify basic dimensions for analysis of man/environment relationships. Use of human emotional responses to environments as intervening variables linking specific stimulus qualities to a variety of approach-avoidance behaviors. Individual differences and drug-induced states as these relate to emotional response dimensions used to explain within-individual differences in response to same environment over time or between-individual differences to same situation. Review of literature relating information rate from environments to arousal and preferences for those environments.

Mr. Mehrabian

**234. Social Psychological Aspects of Competitive Youth Sport.** (Formerly numbered M234.) Prerequisite: consent of instructor. Review of research concerning social psychological aspects of competitive sport for children. Sport is presented as a major achievement domain for young participants. Topics include sources and consequences of competitive stress, significant adult influences and interactions, predictors of performance, determinants of participation and dropping out, and socialization through sport.

Ms. Scanlan

**235. Personality.** Survey of cognitive, analytic, and learning theory approaches to study of personality. Emphasis on intensive exploration of selected concepts and related research.

**M239. Personality, Motivation, and Attribution.** (Same as Education M215.) Current research and theory relating personality variables (e.g., attributional styles, self-esteem) to motivational concerns such as persistence and intensity of behavior. Perceived causes of outcomes in achievement and affiliative domains.

**240A-240B. Developmental Psychology.** Lecture, three hours. Prerequisites: one undergraduate developmental psychology course, graduate standing. Consideration of variables influencing cognitive social and emotional development of the human organism from conception through adolescence. Emphasis on research methodology and research base for current theories of development.

**241. Current Developments in Developmental Psychology (1 unit).** Discussion, 90 minutes. Prerequisite: graduate standing in developmental psychology. Presentation of papers on current advances in developmental psychology and closely related areas by experts in the field. Emphasis on approaches to a problem, making it suitable to interweave presentations by graduate students.

Ms. Gelman

**242A-242F. Seminars: Developmental Psychology.** Seminar, three hours. Prerequisites: courses 240A-240B or equivalent, consent of instructor. Each course may be taken independently and may be repeated for credit:

**242A.** Perceptual Development.

**242B.** Cognitive Development.

Ms. Greenfield

**242C.** Socialization.

**M242D.** Social Development and Education. (Same as Education M217A.) Biological and familial, school, and other influences on the child; development in context of current research and theoretical models; consideration of theoretical and methodological research on family, peer group, and school; application of developmental theory and research to educational practice.

**242E.** Cognitive Factors in Learning Disorders.

Mr. Adelman

**242F.** Development of Language and Communication.

Ms. Greenfield

**243A-243B. Seminars: Practical and Societal Issues in Developmental Psychology.** Lecture, three hours. Prerequisites: courses 240A-240B or equivalent, consent of instructor. Socialization processes in human development and implication for social/political, educational, research issues, values, and societal change. In Progress grading.

**244. Critical Problems in Developmental Psychology.** Lecture, three hours. Prerequisites: courses 240A-240B or equivalent, consent of instructor. Current problems; content varies depending on interest of class and instructor. May be repeated for credit with consent of instructor.

**M245. Personality Development and Education.** (Same as Education M217C.) Review of research and theory of critical content areas in personality development that bear on school performance: achievement motivation, self-concept, aggression, sex differences, empathy, and other social behaviors; review of status of emotional behavior in personality theory and development.

**M246. Psychological Aspects of Mental Retardation.** (Same as Psychiatry M246.) Lecture, 90 minutes. Discussion of psychological aspects of mental retardation, including classification, description, etiology, theory, prevention, treatment, assessment, modern and future developments, and input from other disciplines (ethics, law, religion, welfare systems).

Mr. Tymchuk

**249. Evaluation Research.** Prerequisites: courses 250A, 250B. Introduction to evaluation research in psychology, with emphasis on clinical, community, and social psychology applications. Survey includes policy and strategy issues, design of evaluative studies, data analysis, and utilization of findings.

Mr. Woodward

**250A. Advanced Psychological Statistics.** Review of fundamental concepts. Basic statistical techniques as applied to design and interpretation of experimental and observational research.

Mr. Wickens, Mr. Woodward

**250B. Advanced Psychological Statistics.** Advanced experimental design and planning of investigations.

Mr. Wickens, Mr. Woodward

**251A-251B-251C. Research Methods.** Limited to psychology graduate students. Students design and conduct original research projects under supervision of instructor in charge. It is anticipated that many students will complete their project in two terms (normally three terms allowed). S/U grading (course 251A only).

**252A. Multivariate Analysis.** (Formerly numbered 252.) Lecture, three hours. Prerequisites: courses 250A and 250B, or consent of instructor. Introduction to analysis of data having multiple dependent variables. Topics include continuous multivariate distributions, multiple regression, multivariate analysis of variance, discriminant analysis, canonical correlation, principal component analysis. Applications from clinical, cognitive, physiological, and social psychology. Computer methods.

Mr. Wickens, Mr. Woodward

**252B. Discrete Multivariate Analysis.** Lecture, three hours. Prerequisites: courses 250A and 250B, or consent of instructor. Introduction to analysis of frequency table data. Topics include categorical univariate and multivariate distributions, independence and conditional independence, log-linear models, multivariate categorical designs, and ordered categorical variables. Applications from various areas of psychology.

Mr. Wickens

**253. Factor Analysis.** Theory and practice of factor analysis in psychological research. Methods of factor extraction and rotation. Applications of computers to computations in factor analysis.

**254A. Psychological Scaling.** Lecture, three hours. Prerequisite: graduate standing. Theory of measurement, law of comparative judgment, methods of unidimensional scaling, multidimensional scaling, and related topics of current interest.

Mr. Holman

**254B. Cluster Analysis.** Lecture, three hours. Prerequisite: graduate standing. Quantitative methods for classification. Theories and assumptions underlying major clustering methods. Use of methods in exploratory data analysis.

Mr. Holman

**255. Quantitative Aspects of Assessment.** Fundamental assumptions and equations of test theory. Current problems in assessment.

Mr. Woodward

**M256. Advanced Regression Analysis.** (Not the same as course 256 prior to Fall Quarter 1992.) (Same as Political Science M200E.) Seminar, three hours. Prerequisite: consent of instructor. Diagnostics, robust regression, cross validation, resampling, outliers, missing data, geometry of regression, validity of assumptions, categorical dependent variables, transformation of variables. Access to Macintosh computer very helpful.

Mr. de Leeuw, Mr. DeNardo

**M257. Multivariate Analysis with Latent Variables.** (Same as Political Science M208D.) Lecture, three hours. Prerequisite: consent of instructor. Introduction to models and methods for analysis of data hypothesized to be generated by unmeasured latent variables, including latent variable analogues of traditional methods in multivariate analysis. Causal modeling: theory testing via analysis of moment structures. Measurement models such as confirmatory, higher-order, and structured-means factor analytic models. Structural equation models, including path and simultaneous equation models. Parameter estimation, hypothesis testing, and other statistical issues. Computer implementation. Applications.

Mr. Bentler

**258. Special Problems in Psychological Statistics.** Lecture, three hours. Prerequisites: courses 250A and 250B, or consent of instructor. Special problems in psychological statistics and data analysis.

**259. Quantitative Methods in Cognitive Psychology.** Prerequisites: courses 250A and 250B, or consent of instructor. Number of nonstatistical mathematical methods and techniques commonly used in cognitive psychology. Topics include Markov chains, other stochastic processes, queueing theory, information theory, frequency analysis, etc.

Mr. Wickens

**260A-260B-260C. Proseminars: Cognitive Psychology (1 unit each).** Presentation of research topics by students, faculty, and visiting scholars. May be repeated for credit. S/U grading.

**261. Perception.** Lecture, three hours. Prerequisite: consent of instructor. Concepts, theories, and research in study of perception. Considers the questions: Why do things look, sound, smell, taste, or feel as they do? What is the nature of perceptual systems? How do these systems process information?

Mr. Thomas

**262. Human Learning and Memory.** Lecture, three hours. Prerequisite: consent of instructor. Contemporary theory and research in human verbal learning and memory; verbal and nonverbal learning and memory processes, structure and organization of short- and long-term memory.

Mr. Bjork

**263. Psycholinguistics.** Lecture, three hours. Prerequisite: consent of instructor. Contemporary theory and research in psycholinguistics: coding and decoding, psycholinguistic parameters of language learning, speech recognition and perception.

Ms. French, Mr. MacKay

**264. Judgment and Decision Processes.** Lecture, three hours. Prerequisite: consent of instructor. Contemporary theory and research in judgment and decision processes: psychophysical scaling, contextual effects on rating scales, models for analysis of value decisions.

**265. Thinking.** Lecture, three hours. Contemporary theory and research in thinking, problem solving, inference, semantic memory, internal representation of knowledge, imagery, concepts.

**266. Cognitive Science.** Lecture, three hours. Prerequisite: consent of instructor. Major issues in cognitive science. Representation of cognitive structures and higher-level processes. Specific areas include perception, learning and memory, problem solving, and reasoning. Relationships to artificial intelligence.

Mr. Wickens

**268A-268E. Seminars: Human Information Processing.** Seminar, three hours. Prerequisite: consent of instructor. Topics vary with interests of instructor. Each course may be taken independently and may be repeated for credit:

**268A.** Perception. Mr. Thomas

**268B.** Human Learning and Memory. Mr. Bjork

**268C.** Judgment and Decision Processes.

**268D.** Language and Thought. Mr. MacKay

**268E.** Human Performance. Mr. Beatty

**269. Seminar: Cognitive Psychology.** Seminar, three hours. Prerequisite: consent of instructor. Discussion of problems in cognitive psychology that encompass more than a single subfield of the area. May be repeated for credit.

**270A-270B-270C. Foundations of Clinical Psychology.** Corequisites: courses 271A-271B-271C. Limited to graduate students in clinical psychology:

**270A.** Analysis of phenomenological, theoretical, and research issues regarding etiology and mediating mechanisms in neurotic, affective, schizophrenic spectrum, and other personality disturbances.

**270B.** Principles and methods of psychological assessment and evaluation.

**270C.** Principles and methods of psychological intervention in individuals, families, and community settings.

**271A-271B-271C. Clinical Psychological Methods (2 units each).** Corequisites: courses 270A-270B-270C. Procedures in clinical psychology as applied in clinical and community settings. Supervised exposure to psychological attributes of psychopathology and procedures for psychological assessment, intervention, and research with clinical populations. Experience closely coordinated with content in courses 270A-270B-270C. S/U grading.

**271D. Clinical Research Laboratory (2 units).** Discussion, one hour; laboratory, one hour. Corequisites: courses 270A or 270B or 270C, and 271A or 271B or 271C. Limited to graduate students in clinical psychology. Acquaints students with faculty research interests and involves them in their course 251 research at an early stage to insure completion. S/U grading.

Mr. Christensen

**271E-271F. Clinical Research Laboratories (2 units each).** Prerequisites: course 271D, graduate standing in clinical psychology. Required of first-year clinical psychology students. S/U grading. **271E.** Brief overview of research design issued in clinical psychology and practical issues in students' own research activities. **271F.** Discussions of students' particular research activities and issues, plus laboratories in computer analysis of statistical data.

**272A-272G. Advanced Clinical Psychological Methods.** Seminar, three hours. Prerequisite or corequisite: course 401 or 451. Each course may be taken independently for credit:

**272A.** Behavior Modification with Children. Prerequisites: courses 271A-271B-271C or consent of instructor. Course in series of clinical intervention and assessment offerings for second- and third-year clinical students that covers behavior modification research and practice in clinic, school, institution, and home settings.

Mr. Baker

**272B.** Psychotherapy with Adults.

**272C.** Clinical Interventions for Psychological Problems of Children.

**272D.** Family Therapy and Family Dynamics.

**272E.** Special Problems.

**272F.** Behavior Modification with Adults. Prerequisite: second-year graduate standing in clinical psychology. Current cognitive behavior modification principles and techniques. Major conceptual issues; specific techniques demonstrated and practiced by students to cover a range of adult problems such as depression, stress and anxiety, anger management, assertion problems.

Ms. Hammen, Ms. Mays

**272G.** Marital Therapies. Lecture, two hours; discussion, one hour; laboratory, one hour. Prerequisites: courses 270A-270B-270C, 271A-271B-271C. Examination of assessment and treatment approaches for relationship problems in couples. Presentation, discussion, and illustration of procedures derived from social-learning, psychodynamic, and systems theories, with relevant research findings.

Mr. Christensen

**273. Interpersonal Communication Seminar.** Prerequisite: course 282 or consent of instructor. Development of a design for studying help-oriented interchange in community and clinical settings. Initial focus on measuring interpersonal deficit, response styles, and training effects.

Mr. Goodman

**274A-274B. Group Therapy Dynamics.**

**275. Family Process: Psychological and Social Perspectives on the Family.** (Formerly numbered M275.) Various theoretical perspectives applicable to analysis of family structure and dynamics. Critical issues in application of family constructs to clinical problems.

Mr. Goldstein

**276. Clinical Approaches to Children with Learning and Related Behavior Problems.** Lecture, three hours; discussion, one hour. Prerequisite: doctoral standing. Theoretical and research issues and problems related to purposes of and practices involved in assessment and correction approaches for children with learning and behavior problems. Practicum experiences to illustrate course content and provide opportunities to improve research and clinical competence.

Mr. Adelman

**277A-277B. Advanced Clinical Assessment.** Laboratory, two hours; additional hours to be arranged through Psychology Clinic. Prerequisite: graduate standing in clinical psychology. Projective techniques: clinical interpretation, case studies, psychological test battery, psychopathology, and application of assessment to problems in psychotherapy.

**278. Seminar: Motivation, Conflict, and Neurosis.**

Mr. Feshbach

**279. Seminar: Research in Psychopathology.**

**M280. Affective Disorders (2 or 4 units).** (Same as Psychiatry M234.) Seminar, two hours. General topics related to primary affective disorders (depression, manic depressive illness), including diagnosis, pharmacology, epidemiology, psychology, phenomenology, biology, and treatment. Students enrolled for four units are assigned a more intensive reading list and required to make a presentation or prepare a research paper.

Mr. Gitlin, Ms. Hammen

**281. Seminar: Behavior Therapy.** Mr. Lovaas

**282. Interpersonal Forms: Analysis of Human Interaction Structures.** Lecture, two hours; laboratory, two hours. Conceptual and experimental study of six response modalities common to psychotherapy and everyday interaction: questions, silences, advisement, interpretation, self-disclosure, and reflection. Laboratory work performed in conjunction with lecture and seminar sessions.

Mr. Goodman

**283. Psychopathology.** Survey of dominant psychological attributes of particular forms of psychopathology, including analysis of status of various theories concerned with etiology and mediating mechanisms of personality, neurotic, schizophrenic spectrum, and affective disturbances.

**284. Seminar: Clinical Psychology and Communication.**

**286. Issues and Concepts of Clinical Psychology.** Open to graduate students in majors other than clinical psychology. Survey of major issues and alternatives in current practice. Emphasis on assessment and intervention, with consideration of historical, theoretical, and research bases for current trends.

**287. Critical Problems in Clinical Research Methodology.** Prerequisites: courses 250A, 250B. Special problems of measurement and design in clinical research.

Mr. Christensen

**288. Seminar: Research in Personality (1 unit).** Prerequisite: graduate standing in personality. Required of all students majoring in personality. Current research, theory, and professional issues within area of personality. Brown-bag format utilized to foster intellectual exchange and discussion. Students make at least one presentation per term and participate in discussions with faculty and guest lecturers.

**290. History of Psychology.** Philosophical and historical context of contemporary psychology. Major trends from the 19th century to contemporary issues.

Mr. Maltzman

**291. Principles of Behavioral Pharmacology.** Prerequisite: consent of instructor. Intensive analysis of drug, brain, and behavior relationships. Discussion of nature and source of drugs, general aspects of pharmacology, neurotransmitters and basic neuropharmacology, principles of behavioral pharmacology, categories of psychopharmacological agents, and pharmacological approaches to study of drug addiction, schizophrenia, and other behavioral processes, both normal and pathological. Mr. Butcher

**292. Biobehavioral Mechanisms of Stress and Disease.** Lecture, three hours. Prerequisite: graduate standing in psychology or consent of instructor. Behavior/physiology interactions of some major bodily systems: nervous, cardiovascular, gastrointestinal, and endocrine systems. Usual and altered states of these systems (e.g., stress) as these can promote permanent tissue injuries, disease, or improved bodily function, health enhancement. Mr. Grijalva

**293. Behavioral and Psychophysiological Problems of Alcoholism.** Prerequisite: consent of instructor. Behavioral and psychophysiological characteristics of alcoholism, along with theories concerning their etiology and treatment. Experimental approaches. Mr. Maltzman

**M294A-M294D. Seminars: Neural and Behavioral Endocrinology (3 units, 2 units, 3 units, 2 units).** (Same as Anatomy M255A-M255D.) Lecture, three hours. Topics include hormonal biochemistry and pharmacology. Hypothalamic/hypophyseal interactions, both hormonal and neural. Structure and function of the hypothalamus. Hormonal control of reproductive and other behaviors. Sexual differentiation of brain and behavior. Stress: hormonal, behavioral, and neural aspects. Aging of reproductive behaviors and function. In Progress grading. Mr. Arnold (W, M294A, M294C: Sp, M294B, M294D)

**M295. Laboratory for Naturalistic Observations: Developing Skills and Techniques.** (Same as Anthropology M236Q, Education M222A, and Psychiatry M235.) Skill of observing and recording behavior in natural settings, with emphasis on field training and practice in observing behavior. Discussion of some uses of observations and their implications for research in social sciences. Students expected to integrate observational work into their current research interests.

**M296. Neurobiology of Sleep (3 units).** (Same as Neuroscience M259 and Psychiatry M249.) Lecture, one hour; discussion, two hours. Critical review of primary research publications concerning neural basis of sleep. Discussion of neural and biochemical control of REM and NREM sleep after reviewing sleep behavior and phenomenology, including developmental and comparative aspects. Presentation of relevant clinical phenomena. S/U or letter grading

**297. Issues in Social Development of the Minority Child.** Seminar, three hours. Prerequisites: graduate standing, consent of instructor. Critical evaluation and integration of existing research on social psychological development of the minority child. Emphasis on socialization of cognitive and personality style, with goal of empirically clarifying issues raised in this area of developmental study. Mr. Myers

**298. Special Problems in Psychology.** Content depends on interests of particular instructor. May be repeated for credit.

**299. Developmental Methodology.** Coverage of both theory and methods in measuring age-related changes in behavior. Experimental designs and data-analytic solutions to problems in measurement of change. Some experience in analysis of actual data sets.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**401. Fieldwork in Clinical Psychology (1 to 12 units).** Prerequisites: courses 271A-271B-271C. Students on practicum assignments are required to register for this course each term (except by consent of clinical program committee).

**402A-402B-402C. Clinical Research Practicum (2 units each).** Prerequisite: third-year graduate standing in clinical psychology. Required three-term practicum in clinical research methods. Alternate meetings cover research methodology and professional issues; remaining meetings center on student presentations of current and proposed research activity. S/U grading.

**410A-410B-410C. Clinical Teaching and Supervision.** Prerequisites: completion of Ph.D. comprehensive examinations, advancement to candidacy or preparation for dissertation research actively underway, consent of instructor and clinic steering committee. Study and practice of knowledge, concepts, and theories on teaching and supervision of applied clinical psychology. Ms. Jacobs

**420A-420B. Health Psychology Practicum (2 units each).** Prerequisite: graduate standing. Determination of what areas of health, illness, treatment, and delivery of treatment can be elucidated by understanding of psychological concepts and research; psychological perspective on these problems; how psychological perspective might be enlarged and extended in the medical area. Through practical field placement, students apply knowledge acquired in class to research observation and/or clinical work in the field. Ms. Taylor

**423. Social Survey Research Practicum.** Practicum, two hours; additional hours to be arranged. Methods of survey sampling, conduct and management of computer-assisted telephone interview surveys.

**425. Health Psychology Lecture Series (2 units).** Clinicians and researchers in health psychology from Los Angeles area present their research, programs, and/or clinical work as part of a training program in health psychology. May be repeated for credit. S/U grading. Ms. Taylor

**451. Internship in Clinical Psychology (6 to 12 units).** Prerequisite: course 401. Limited to students who have successfully completed departmental qualifying examinations. May be repeated for credit. S/U grading.

**454. Internship in Industrial Psychology (2 to 4 units).**

**490. Scientific Writing for Psychologists (2 units).** Lecture, two hours; laboratory, two hours. Prerequisite: consent of instructor. Gives graduate students opportunity to improve their effectiveness in writing scientific papers for publication and proposals for dissertations or grants. May not be applied toward graduate degree requirements. S/U grading.

**495. Presentation of Psychological Materials.** Supervised practicum in undergraduate teaching. Students serve as discussion section leaders in selected undergraduate courses. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Research and Study in Psychology (2 to 12 units).** One 596 course is required during second year of graduate study, and one 596 or 599 course is required during each succeeding year of graduate study. (Terminal M.A. candidates are exempt from this requirement.)

**597. Individual Studies (2 to 12 units).** Intended primarily as preparation for Ph.D. qualifying examinations. May be required by some area committees as a prerequisite for taking examinations.

**599. Research for Ph.D. Dissertation (2 to 12 units).** Prerequisite: successful completion of qualifying examinations. One 599 course is required during each year following completion of qualifying examinations.

## Religion, Study of (Interdepartmental)

329 Dodd Hall, (310) 206-1356, 825-4641

### Professors

Marilyn McCord Adams, Ph.D. (*Philosophy*)  
Robert Merrihew Adams, Ph.D. (*Philosophy*), *Chair*  
Arnold J. Band, Ph.D. (*Hebrew*; *Distinguished Teaching Award*)  
Robert L. Benson, Ph.D. (*History*)  
Edward G. Berenson, Ph.D. (*History*; *Distinguished Teaching Award*)  
Giorgio Buccellati, Ph.D. (*Ancient Near East, History*)  
Robert E. Buswell, Ph.D. (*Chinese and Korean Buddhism*)  
Herbert A. Davidson, Ph.D. (*Hebrew*)  
Richard Hovannissian, Ph.D. (*History*)  
Henry Ansgar Kelly, Ph.D. (*English*)  
Bengt T.M. Löfstedt, Ph.D. (*Medieval Latin*)  
Afaf Marsot, D.Phil. (*History*)  
Ronald J. Mellor, Ph.D. (*History*)  
Herbert E. Plutschow, Ph.D. (*Japanese Religion and Cultural History*)  
Ismail Poonawala, Ph.D. (*Arabic*)  
Merrick Posnansky, Ph.D. (*History, Anthropology*)  
David C. Rapoport, Ph.D. (*Political Science*)  
Yona Sabar, Ph.D. (*Hebrew*)  
Hartmut E.F. Scharfe, Ph.D. (*Sanskrit*)  
Hanns-Peter Schmidt, Ph.D. (*Indo-Iranian*)

### Professors Emeriti

Rogers Albritton, Ph.D. (*Philosophy*)  
Milton V. Anastos, Ph.D. (*Classics*)  
Amin Banani, Ph.D. (*Persian, History*)  
Seeger A. Bonebakker, Ph.D. (*Arabic*)  
Kenneth K.S. Chen, Ph.D. (*Buddhism*)  
Claus-Peter Clasen, Ph.D. (*History*)  
Vinton A. Dearing, Ph.D. (*English*)  
Marija Gimbutas, Ph.D. (*Archaeology, Slavic Languages and Literatures*)  
Daniel W. Howe, Ph.D. (*History*)  
Gerhart B. Ladner, Ph.D. (*History*)  
William A. Lessa, Ph.D. (*Anthropology*)  
Jacques Maquet, Ph.D. (*Anthropology*)  
Philip L. Newman, Ph.D. (*Anthropology*)  
Douglass R. Price-Williams, Ph.D. (*Anthropology, Psychiatry and Biobehavioral Sciences*)  
Jaan Puhvel, Ph.D. (*Classics, Indo-European Studies*)  
Stanislav Segert, Ph.D. (*Northwest Semitics*)  
Johannes Wilbert, Ph.D. (*Anthropology*; *Distinguished Teaching Award*)

### Associate Professors

Ruth Bloch, Ph.D. (*History*)  
Robert A. Hill, M.Sc. (*History*)  
Steven Lattimore, Ph.D. (*Classics*)  
Michael G. Morony, Ph.D. (*History*)  
Joseph F. Nagy, Ph.D. (*English*)

### Assistant Professors

William M. Bodiford, Ph.D. (*Japanese Buddhism*)  
Hossein Ziai, Ph.D. (*Iranian and Islamic Studies*)

### Adjunct Associate Professor

S. Scott Bartchy, Ph.D. (*History*; *Distinguished Teaching Award*)

## Scope and Objectives

The UCLA major in the study of religion is designed to give students a broad humanistic perspective. It introduces students to several

religious traditions and thus to an appreciation of the very nucleus of civilization in various periods of history and various parts of the world, as well as to an understanding of fundamental human orientations. The program also provides opportunity to study one or more particular religious traditions in greater depth. Cohesion and integrity in the program are furthered by courses dealing with philosophical problems in religion and with general anthropological reflections.

## Bachelor of Arts Degree

### Preparation for the Major

*Required:* History 4; Philosophy 2; two courses from Anthropology 9, East Asian Languages and Cultures 60, History 1A, 1B, 1C, 9A, 9C, 9D, 10A, 10B, 11A, 11B.

### The Major

*Required:* A minimum of 14 upper division courses from the list below, of which at least four (including Study of Religion 100 and Philosophy 175) must be from Group I, at least two must be from each of Groups II and IV, and at least three must be from Group III (at least one on each of the three religious traditions listed). No more than five of the 14 may be from any one group. A course may be taken twice, on different topics, for credit toward the major where repetition is allowed by the department offering the course. Variable topics courses not listed below (e.g., History 197) may be approved by the adviser as satisfying requirements for which their content is appropriate. A maximum of two upper division courses, not listed below, in an ancient language relevant to your course of study may be applied toward the major requirements (but not the group requirements) with consent of the adviser.

Special studies courses (199) may be applied toward the major but not toward a group requirement; a maximum of 12 units, approved by the adviser, may be applied. No course for the major or preparation for the major may be taken on a P/NP grading basis.

### Honors Program

The honors program provides exceptional students with an opportunity to do independent research under the tutorial guidance of a faculty member. If you are admitted to honors, you should take three 199 courses under the guidance of the sponsoring professor. These courses are taken in the senior year and count as part of the regular requirement of 14 upper division courses. The program culminates in an honors thesis.

In order to qualify for admission, you should have a minimum grade-point average of 3.4. The 199 courses designed for the program and the thesis topic should be approved by the committee in charge of the major.

For further information, contact Professor Robert M. Adams at the program address.

## Upper Division Course

**100. Undergraduate Seminar: Study of Religion.** Prerequisite: consent of instructor. Limited to 20 students. Interdisciplinary approach to some major topics in study of religion, such as religion and politics, mysticism, ideas of revelation, myth and religion, worship and ritual. May be repeated for credit with consent of instructor. Mr. Nagy

## Study of Religion Upper Division Course List

### Group I — Methods

**Anthropology** 133R. Aesthetic Systems  
156. Comparative Religion  
**History** 193A. History of Religions: Myth  
193E. Special Topics in History of Religions  
**Philosophy** 175. Topics in Philosophy of Religion  
**Study of Religion** 100. Undergraduate Seminar: Study of Religion

### Group II — Nonliterate and Ancient Religious Traditions

**Ancient Near East (Near Eastern Languages)** 130. Ancient Egyptian Religion  
**Anthropology** 114P. Ancient Civilizations of Western Middle America (Nahuatl Sphere)  
114Q. Ancient Civilizations of Eastern Middle America (Maya Sphere)  
171. Civilization of Sub-Saharan Africa  
174P. Ethnography of South American Indians  
177. Cultures of the Pacific  
**Classics** 161. Introduction to Classical Mythology  
166A. Greek Religion  
166B. Roman Religion  
168. Introduction to Comparative Mythology  
**Dance** 181B. Dance in Southeast Asia  
181D. Dance in South Asia  
C187. Dance in Native American Cultures  
**Folklore and Mythology** M122. Celtic Mythology  
M123A. Finnish Folklore and Mythology  
M126. Baltic and Slavic Folklore and Mythology  
M128. Hungarian Folklore and Mythology  
M129. Folklore and Mythology of the Ugric Peoples  
130. North American Indian Folklore and Mythology Studies  
131. Folklore of India  
M155. Oral Traditions in Africa  
**History** 193D. Religions of the Ancient Near East  
**Iranian (Near Eastern Languages)** 170. Religion in Ancient Iran

### Group III — Western and Near Eastern Religious Traditions

**Christianity**  
**Classics** M170. Power and Imagination in Byzantium  
**Greek (Classics)** \*130. Readings in the New Testament  
**History** 119. The Christian Church, 100-1517  
120. The Christian Religion, 100-1350  
125B. History of Modern Europe: Reformation  
150C. History of Religion in the U.S.  
194A. History of Early Christians  
194B. Religious Environment of Early Christians  
194C. Jesus of Nazareth in Historical Research  
**Philosophy** 100B. Medieval and Early Modern Philosophy  
107. Topics in Medieval Philosophy  
118. Kierkegaard

### Islam

**Arabic (Near Eastern Languages)** \*120. Islamic Texts  
**History** 107A-107B. Islamic Civilization  
109A. History of North Africa from the Moslem Conquest: To 1578  
**Islamic (Near Eastern Languages)** 110. Introduction to Islam

### Judaism

**Ancient Near East (Near Eastern Languages)** 170. Introduction to Biblical Studies  
**Hebrew (Near Eastern Languages)** \*120. Biblical Texts  
\*130. Rabbinic Texts  
**History** M192A-M192B. Jewish Intellectual History  
**Jewish Studies (Near Eastern Languages)** 130. Modern Jewish Religious Movements and Their Ideologies  
M150A-150B. Hebrew Literature in English

### Group IV — South Asian and East Asian Traditions

**Art History** 114A. Early Art of India  
114C. Japanese Art  
114D. Later Art of India  
**Chinese (East Asian Languages)** 160. Chinese Buddhism  
\*165. Introduction to Chinese Buddhist Texts  
175. Introduction to Chinese Thought  
**East Asian Languages and Cultures** 162. Buddhist Meditation Traditions  
**History** 186. Shinto, Buddhism, and Japanese Folk Religion  
188A. Early History of India  
193B, 193C. Religions of South and Southeast Asia  
**Indic (East Asian Languages)** 175. Introduction to Indic Philosophy  
**Japanese (East Asian Languages)** 160. Japanese Buddhism  
161. Religious Life in Modern Japan  
175. Introduction to Japanese Thought  
**Korean (East Asian Languages)** 160. Korean Buddhism  
\*165. Introduction to Korean Buddhist Texts  
175. Introduction to Korean Thought

## Romance Linguistics and Literature (Interdepartmental)

359 Royce Hall, (310) 825-0237

### Professors

Shirley L. Arora, Ph.D. (*Spanish*)  
Luigi Ballerini, Dottore in Lettere (*Italian*)  
Rubén A. Benítez, Ph.D. (*Spanish*)  
Franco Betti, Ph.D. (*Italian*)  
Patrick Coleman, Ph.D. (*French*)  
Marga Cottino-Jones, Ph.D., Dottore in Lettere (*Italian*)  
Eric Gans, Ph.D. (*French*)

\*Courses so marked have readings in foreign languages. See departmental course listings for prerequisites.



Joaquin Gimeno, Ph.D. (*Spanish*)  
 Peter Haidu, Ph.D. (*French*)  
 Bruce P. Hayes, Ph.D. (*Linguistics*)  
 Carroll B. Johnson, Ph.D. (*Spanish*)  
 Bengt T.M. Löfstedt, Ph.D. (*Classics*)  
 Gerardo Luzuriaga, Ph.D. (*Spanish*)  
 C. Brian Morris, Litt.D. (*Spanish*)  
 C.P. Otero, Ph.D. (*Spanish, Romance Linguistics*)  
 A. Carlos Quicoli, Ph.D. (*Portuguese, Romance Linguistics*), Chair  
 Enrique Rodríguez-Cepeda, Ph.D. (*Spanish*)  
 Edward F. Tuttle, Ph.D. (*Italian*)  
 Stephen D. Werner, Ph.D. (*French*)  
 Marc Bensimon, Ph.D., *Emeritus* (*French*)  
 Giovanni Cecchetti, Dottore in Lettere, *Emeritus* (*Italian*)  
 E. Mayone Dias, Ph.D., *Emeritus* (*Portuguese*)  
 Hassan el Nouty, Docteur ès Lettres, *Emeritus* (*French*)  
 Claude L. Hulet, Ph.D., *Emeritus* (*Spanish and Portuguese*)  
 Pier-Maria Pasinetti, Ph.D., Dottore in Lettere, *Emeritus* (*Italian*)

### Associate Professors

George D. Bedell, Ph.D. (*Linguistics*)  
 Jean-Claude Carron, Docteur ès Lettres (*French*)  
 Shushi Kao, Ph.D. (*French*)  
 Hilda J. Koopman, Ph.D. (*Linguistics, African Languages*)  
 Sara Melzer, Ph.D. (*French*)  
 Susan Plann, Ph.D. (*Spanish*)  
 Lucia Re, Ph.D., Dottore in Lettere (*Italian*)  
 A. John Skirius, Ph.D. (*Spanish*)  
 Paul C. Smith, Ph.D. (*Spanish*)  
 Dominique L. Sportiche, Ph.D. (*Linguistics*)  
 Donca Steriade, Ph.D. (*Linguistics*)  
 Timothy A. Stowell, Ph.D. (*Linguistics*)

### Assistant Professors

Adriana Bergero, Ph.D. (*Spanish*)  
 Verónica Cortínez, Ph.D. (*Spanish*)  
 Andrea Loselle, Ph.D. (*French*)  
 Claudia Parodi, Ph.D. (*Spanish*)  
 Malina Stefanovska, Ph.D. (*French*)

## Scope and Objectives

The Romance Linguistics and Literature Program emphasizes modern linguistic and literary theories in the study of Romance languages. Linguistic and literary theories can be pursued independently or jointly; however, the integration of linguistic and literary knowledge is taken to be one of the highest aims of this interdepartmental graduate program.

## Master of Arts Degree

### Admission

The UCLA Bachelor of Arts degree in French, Italian, Portuguese, or Spanish, or the equivalent, is required. Applicants are expected to have a grade-point average of at least 3.4 in upper division courses, especially in those judged germane to their proposed program. Three letters of recommendation and the General Test of the Graduate Record Examination (GRE) are also required and should be submitted to the Chair, Romance Linguistics and Literature Program, 359 Royce Hall, UCLA, Los Angeles, CA 90024-1535. Students admitted from elsewhere whose preparation is considered deficient in view of their intended specialization are required to take specified upper di-

vision courses. Such courses may be taken concurrently with graduate courses, but they may not be applied toward the course requirements for the M.A. degree. Before enrolling for the first term in the program, new students must consult the program chair concerning the formation of their guidance committee. Students who know only the language of their major should prepare in at least one other Romance language during the first graduate year so they can take courses in their minor no later than the second year of graduate study.

### Foreign Language Requirement

In addition to the Romance language of major interest and that of minor interest, you are required to take either Latin 3 or the equivalent, or Italian 3 or the equivalent (provided Italian is not your major), whether you specialize in linguistics or in literature. The language requirement must be completed no later than the term before you expect to receive your degree.

### Course Requirements

Twelve courses are the minimum requirement, of which six courses (at least five of them graduate) must be in your major language, with specialization either in linguistics or in literature. One course in the history or development of the major language is highly recommended. At least three courses would be in the minor language, also with specialization in either linguistics or in literature. The remaining three courses should be selected in consultation with the guidance committee so as to be logically supportive of your major field of study. Linguistics 20 is required as a prerequisite for all students majoring in the linguistics field but may not be applied toward the total number of courses required for the degree. Up to eight units of Romance Linguistics and Literature 596 may be applied toward the M.A. Courses 597 and 598 may not be applied toward the degree.

### Teaching Experience

Teaching experience is not required but is desirable. Consult the chair regarding the availability of teaching assistantships.

### Thesis Plan

The program favors the comprehensive examination plan but will approve M.A. theses for exceptionally well-qualified students under special circumstances. You may petition for authorization to write an M.A. thesis only after completion of six courses applicable toward the degree. It is your responsibility to select an appropriate topic and find a professor to direct the thesis. After completion of the thesis, you must pass a two-hour oral examination testing your knowledge of the field of the thesis and your general competence. Only those students who attain a high pass on the examination are encouraged to proceed to candidacy for the Ph.D. degree.

### Comprehensive Examination Plan

The comprehensive examination is administered by three members of the guidance com-

mittee, appointed by the chair. The written examination, consisting of one four-hour examination in the major field, one two-hour examination in the minor field, and one oral examination not to exceed one hour, is given each term two weeks prior to final examinations. If you fail the examination or any part thereof, you may retake the failed portions once when the examination is next regularly offered. Only those students who attain a high pass grade on the master's examination are automatically eligible for the Ph.D. program.

## Ph.D. Degree

### Admission

The UCLA Master of Arts degree in Romance Linguistics and Literature or the UCLA M.A. in French, Italian, Portuguese, or Spanish, or the equivalent, is required. A strong academic record (normally a GPA of 3.4 or better), three letters of recommendation, and the Graduate Record Examination (GRE) General Test (normally with a combined verbal/quantitative score of 1,100 or better) are also required.

Formal application is required of all students. Entering students who have completed the UCLA M.A. in Romance Linguistics and Literature with a high pass grade are automatically eligible for admission to the Ph.D. program; those who received a middle pass are reviewed like candidates from other institutions; those who received a low pass grade are ineligible for admission. Students whose M.A. program registers deficiencies in scope or quality may be admitted but are required to complete three graduate courses (with grades of B or better) approved by the chair.

Following your formal admission, you select your guidance committee in consultation with the chair. You then meet as soon as possible with your committee to work out your program of courses and set a tentative date for the qualifying examinations. The guidance committee has final authority to prescribe the course of study. Until you have met with this committee and placed yourself under its direction, you are not officially in the Ph.D. program.

### Major Fields or Subdisciplines

The program recognizes two fields of specialization: linguistics and literature.

*Linguistics* — Major fields include (1) the present-day grammar of the Romance language of your major interest and its relation to the grammar of its sister languages and to language in general, (2) the development of the Romance language of your major interest in relation to its sister languages (and possibly other interrelated cultural aspects) from the perspective of historical linguistics, and (3) the genetic and typological relationships of the Romance languages to other Indo-European languages and to language in general. The two minors may be other Romance languages, or one other Romance language plus a field of Romance literature.

**Literature** — Major fields include one of the following in the literatures of at least two Romance languages: (1) early Romance literature and philology; (2) Renaissance and baroque; (3) modern literature, preferably with emphasis in one century. The first minor may be one of the preceding fields not selected for the major. The second minor may be the same field or a new field in another Romance language, or some other related field in the major language or in Romance linguistics.

### Foreign Language Requirement

In addition to the minimum of two Romance languages, Latin 3 or Italian 3 or the equivalent is required of all students in the program. Students selecting option 2 or 3 in linguistics or option 1 in literature must also take German, whereas those selecting option 1 in linguistics or option 2 or 3 in literature must take another foreign language to be determined by the guidance committee. In non-Romance languages, you must pass the Graduate School Foreign Language Test (GSFLT). In languages where there is no such test, passing a departmental examination fulfills the requirement. This requirement may also be met by completing two years of college-level courses in the language with grades of B or better or by fulfilling the foreign language requirement in connection with an M.A. obtained elsewhere. The foreign language requirement must be satisfied no later than the term before the qualifying examinations are taken.

### Course Requirements

In each of the two specializations (linguistics or literature) the Ph.D. program consists of a major and two minors. The courses (a minimum program) are distributed as follows: major — five courses, first minor — three courses, second minor — two courses. At least one seminar is required in each of the three fields. In addition to those required for the master's degree (or equivalent) at least 10 other graduate courses (of which no more than two 596 courses may be applied), as well as such courses as the guidance committee may prescribe, are required. Linguistics 20 is required as a prerequisite for all students majoring in the linguistics field but may not be applied toward the total number of courses required for the degree.

### Teaching Experience

Teaching experience is not required but is desirable. Consult the chair regarding the availability of teaching assistantships.

### Qualifying Examinations

The qualifying examinations, given by the doctoral committee during Fall, Winter, and Spring Quarters, consist of (1) a three-hour written examination in the major field, (2) a two-hour examination in the first minor, (3) a one-hour examination in the second minor, and (4) a two-hour University Oral Qualifying Examination in the three fields, at which time your pro-

spectus for the dissertation is also discussed and approved. Failed portions of the examination may be repeated once after any remedial preparation the committee may specify.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Dissertation

The dissertation may be on any subject within the general area of Romance linguistics and literature. If more than five calendar years elapse between advancement to candidacy and the presentation of the dissertation, the program may require revalidation of the qualifying examinations.

### Graduate Courses

**204A-204B. Romance Syntax: French (1 to 4 units each).** Lecture, three hours. Prerequisites: Linguistics 120B, 200B, consent of instructor. Course 204A is prerequisite to 204B. Structure of French from point of view of contemporary syntactic theory, with emphasis on considerations of comparative syntax with other Romance languages. Topics include verbal/auxiliary system; WH-movement and Complementizer system; clitic constructions, causatives, inversion phenomena; quantifier distribution; impersonal constructions; negation and subjunctive. S/U or letter grading.

Mr. Sportiche

**211. Comparative Romance Syntax.** Lecture, three hours. Prerequisite: French 210A or Portuguese 204A or Spanish 204A or consent of instructor. Comparative study of syntactic processes in Romance languages. Investigation of parameters underlying linguistic variation.

Mr. Otero, Mr. Quicoli

**255. Topics in Romance Syntax (1 to 4 units).** Prerequisite: consent of instructor. Topics in syntax of Romance languages, with emphasis on recent development in comparative studies; theoretical innovations based on Romance syntax.

Mr. Sportiche

**596. Directed Individual Study or Research (4 to 8 units).** Prerequisite: consent of instructor and program chair. Study or research in areas or on subjects not offered as regular courses. Eight units may be applied toward M.A. degree requirements. S/U grading.

**597. Preparation for Graduate Examinations (4 to 12 units).** Prerequisite: consent of graduate adviser. Individual preparation for M.A. comprehensive examination or Ph.D. qualifying examinations. May be taken only once for each degree examination and only in term that comprehensive or qualifying examinations are to be taken. S/U grading.

**598. Research for M.A. Thesis (2 to 12 units).** Prerequisite: consent of guidance committee. Research in preparation of M.A. thesis. S/U grading.

**599. Research for Ph.D. Dissertation (2 to 12 units).** Prerequisite: successful completion of Ph.D. qualifying examinations. Research for and preparation of Ph.D. dissertation. S/U grading.

### Romance Linguistics and Literature Course List

In consultation with the appropriate adviser(s), courses should be selected with an eye to the organic relationship between them, preferably among those listed below and/or their prerequisites:

### Introductory Courses

**Italian** 201. Bibliography and Methods of Research  
**Spanish** M200. Research Resources

### Linguistics Courses

**Grammatical Theory: Linguistics** 201. Phonological Theory II

206. Syntactic Theory II

### Development of the Romance Languages

**Hispano-Romance: Spanish** M205A-M205B. Development of Portuguese and Spanish Languages

**Indo-European: Indo-European Studies** 210. Indo-European Linguistics: Advanced Course

280A-280B. Seminars: Indo-European Linguistics

**Italic Dialects: Latin** 242. Italic Dialects and Latin Historical Grammar

**Italo-Romance: Italian** 259A. History of the Italian Language

**Latin History: Latin** 240. History of the Latin Language

**Medieval Latin: Latin** 231A-231B. Seminars: Medieval Latin

**Northern Gallo-Romance: French** 210A. Phonology and Morphology from Vulgar Latin to French Classicism

210B. Syntax and Semantics from Vulgar Latin to French Classicism

**Paleography: History** 219A-219B. Paleography I, II

**Romance Dialectology: Italian** 259C. Italian Dialectology

**Spanish** 209. Dialectology

**Romance Linguistics: Linguistics** 225G. Linguistic Structures

**Vulgar Latin: Latin** 232. Vulgar Latin

### Studies in the History of the Romance Languages

**Gallo-Romance: French** 214. Problematics of Medieval Language and Literature

**Hispano-Romance: Spanish** M251A-M251B. Studies in Galego-Portuguese and Old Spanish

**Italo-Romance: Italian** 210A. Early Italian Literature: Origins of Italian Language and Early Texts

259A-259B-259C. Studies in History of Italian Language

### Synchronic Linguistics

**Advanced Grammar: French** 201. Literary Research and Composition

**Italian** 259B. Structure of Modern Italian

**Portuguese** 202. Synchronic Morphology and Phonology

204A-204B. Generative Grammar

**Spanish** 202A. Phonology

202B. Morphology

204A-204B. Generative Syntax and Semantics

**Studies in Linguistics and Dialectology: Spanish** 256A-256B. Studies in Spanish Linguistics

257. Studies in Dialectology

### Literature Courses

**History of Ideas: French** 260A-260B. Studies in History of Ideas

**Literary Criticism: French** 202. Historical and Philosophical Background to French Literary Criticism

203. Contemporary Theories

258A-258B. Studies in Literary Criticism

**Italian** 205A-205B-205C. Methods of Literary Criticism

**Spanish** M201A-M201B. Literary Theory and Criticism

**Literary History: History** 218. Medieval Latin Literary History

**Philosophy and Literature: French** 259A-259B. Studies in Philosophy and Literature

**Early Romance Literature**

**Petrarca:** Italian 214D. Italian Literature of the 14th Century: Petrarca

251. Seminar: Petrarca

**Studies in Early Romance Literature: French** 215A-215D. Medieval Literature

250A. Major Medieval Texts

250B. Structure of Medieval Literature

250C. Problems in Medieval Literature

**Italian** 210B-210C. Early Italian Literature

214A-214G. Italian Literature of the 14th Century

215A-215B-215C. Italian Literature of the 15th Century

250A-250D. Seminars: Dante

252. Seminar: Boccaccio

**Portuguese** C224. Medieval Portuguese Literature

**Spanish** 222. Medieval Epic and Narrative Poetry

223. Medieval Prose

262A-262B. Studies in Medieval Spanish Literature

**Modern Romance Literature**

**Genre Studies: Portuguese** 252. Studies in Early Portuguese Literature

253. Studies in Modern Portuguese Literature

254. Studies in Early Brazilian Literature

255. Studies in Modern Brazilian Literature

**Studies in the 18th Century: French** 218A-218B-218C. 18th Century

254A-254B. Studies in the 18th Century

**Italian** 218A-218E. Italian Literature of the 18th Century

256A-256B. Seminars: 18th Century

**Portuguese** C227. Romanticism and Realism in Portuguese Literature

C232. Romanticism in Brazilian Literature

**Spanish** 229. Romanticism

239. Romanticism and Realism in Spanish-American Literature

270A-270B. Studies in 18th-Century Spanish Literature

277A-277B. Studies in Colonial Spanish-American Literature

**Studies in the 19th Century: French** 219A-219D. 19th Century

255A-255B. Studies in the 19th Century

**Italian** 219A-219F. Italian Literature of the 19th Century

257A-257B. Seminars: Romanticism

**Portuguese** C228. Post-Romanticism and Naturalism in Portuguese Literature

C233. Naturalism, Realism, and Symbolism in Brazilian Literature

**Spanish** 230. Realism and Naturalism

271A-271B. Studies in 19th-Century Spanish Literature

278A-278B. Studies in 19th-Century Spanish-American Literature

**Studies in the 20th Century: French** 220A-220D. 20th Century

221A-221C. French-African Literature

256A-256B. Studies in Contemporary Literature

257A-257B. Studies in French-African Literature

**Italian** 220A-220B-220C. Italian Literature of the 20th Century

258A-258B. Seminars: Contemporary Italian Literature

**Portuguese** C229. 20th-Century Portuguese Literature

C234. 20th-Century Brazilian Literature: Poetry and Drama

C235. 20th-Century Brazilian Literature: Novel

**Spanish** 232. Spanish Prose Literature from 1898 to the Civil War

233. Spanish Prose Literature after the Civil War

234. Spanish Drama and Poetry from 1898 to the Civil War

235. Spanish Drama and Poetry after the Civil War

240. Major Currents in Modern Spanish-American Literature

243A-243B. Contemporary Spanish-American Poetry

244A-244B. Contemporary Spanish-American Novel

245. Contemporary Spanish-American Essay

272A-272B. Studies in 20th-Century Spanish Literature

280A-280B. Studies in Contemporary Spanish-American Literature

**Renaissance and Baroque Literature**

**Cervantes: Spanish** 227. Cervantes

**Studies in Renaissance and Baroque Literature: French** 216A-216B-216C. Renaissance

217A-217D. 17th Century

251A-251B. Studies in the Renaissance

252A-252B. Studies in the Baroque

253A-253B. Studies in the 17th Century

**Italian** 216A-216E. Italian Literature of the 16th Century

217A-217B-217C. Italian Literature of the 17th Century

253A-253B-253C. Seminars: Chivalric Poetry in Italy

255A-255B. Seminars: Baroque

**Portuguese** C225. Renaissance Portuguese Literature

C226. Baroque and Neoclassical Portuguese Literature

C231. Colonial Brazilian Literature

**Spanish** 224. Poetry of the Golden Age

225. Drama of the Golden Age

226. Prose of the Golden Age

237. Literature of the Spanish Conquest

264A-264B. Studies in Golden Age Spanish Literature

**ROTC Programs**

In accordance with the National Defense Act of 1920 and with the concurrence of The Regents of the University, a unit of the Senior Division Reserve Officer Training Corps (ROTC) was established on the Los Angeles campus of the University in July 1920.

This voluntary training allows you to qualify for an officer's commission in the Army, Navy, Air Force, or Marine Corps while completing your college education. ROTC courses are offered by three departments within the College of Letters and Science: Aerospace Studies (Air Force), Military Science (Army), and Naval Science (Navy and Marine Corps). They are not considered academic majors, but ROTC courses may be taken as free electives and applied toward the total course requirements of your major. The ROTC program is also available through UCLA Extension.

All three ROTC departments offer voluntary four-year programs for incoming freshmen and two-year programs for students who apply early in their sophomore year. All have leadership laboratories which help to build management skills.

The majority of commissions are reserve commissions. Active duty obligation following commissioning varies depending on branch of service.

**Scholarships**

ROTC Scholarships are awarded on a competitive basis to U.S. citizens regardless of parents' income. Scholarships provide tuition, a book allowance, fees, and a tax-free monetary allowance of \$100 per month during the academic year. Applications for four-year scholarships may be obtained by calling the appropriate department at UCLA — Army, (310) 825-7381; Air Force, (310) 825-1742; Navy, (310) 825-9075 — or by writing to Armed Forces Opportunities, P.O. Box 2865, Huntington Station, NY 11746-2102. When writing, specify which service (Army, Air Force, Navy/Marine) scholarship is desired. Completed applications should be received prior to July 15 (Army) or August 15 (Air Force and Navy) for early consideration, but no later than December 1 (all services) of the year preceding college matriculation. Three- and two-year scholarship applications may be obtained from the appropriate UCLA department and must be submitted prior to February 1.

**Aerospace Studies**

210 Men's Gym, (310) 825-1742

**Professor**

Gary A. Jorgenson, M.A., Colonel, *Chair*

**Adjunct Assistant Professors**

Daniel L. Commons, M.A., Captain  
Anthony D. Leppellere, M.B.A., Captain  
James D. Quilliam, M.B.A., Captain  
Archie L. Roundtree, M.B.A., Major

**Air Force ROTC Scope and Objectives**

Air Force ROTC provides selected students the opportunity to develop those attributes essential to positions of high responsibility as commissioned officers in the U.S. Air Force. This includes understanding Air Force history, doctrine, operating principles, and national security policies, demonstrating ability to apply modern principles of management and human relations in the Air Force environment, and mastering of leadership theory and techniques. Students must demonstrate dedication to their assignments, willingness to accept responsibility, and the ability to think critically and communicate with clarity and precision.

**Four-Year Program**

The four-year program is available to first-term freshmen and those full-time students with at least four years of undergraduate and/or graduate study remaining and consists of an initial two-year General Military Course, or GMC (Aerospace Studies 1A-1B-1C and 20A-20B-

20C), followed by a two-year Professional Officer Course (POC) described under "Two-Year Program." GMC participation requires one hour of academic class and two hours of leadership laboratory each week during the academic year. Students incur no military obligation for GMC participation unless they qualify and accept an Air Force ROTC scholarship during or after their sophomore year.

Students who complete GMC and wish to enter POC attend a four-week field training course the summer following GMC completion. At field training, students are provided meals, quarters, clothing, and travel expenses and are paid about \$450 to cover incidental expenses. Subjects covered at field training include junior officer training, aircraft and aircrew orientation, career orientation, survival training, base functions, Air Force environment, and physical training.

## Two-Year Program

The two-year program is known as the Professional Officer Course (POC) and consists of Aerospace Studies 130A-130B-130C and 140A, 140B, 140C. POC participation requires two hours of leadership laboratory and three hours of academic class each week during the academic year.

Prerequisites for the two-year program are successful completion of the GMC and a four-week field training course (see "Four-Year Program" above), or successful completion of a six-week field training program on an Air Force base during the summer preceding enrollment in the program.

Students interested in the six-week field training program are encouraged to apply to the department chair early during Fall Quarter of their sophomore year. The application deadline normally is February 1, but earlier submission is recommended, as the selection board considers applications monthly. U.S. citizenship is required. There is no obligation to apply. Students are selected on a competitive basis with consideration given to academic major, grade-point average, aptitude examination scores, medical examination results, performance during an officer board interview, and a physical fitness test.

Students selected for the six-week summer field training are provided meals, quarters, clothing, travel expenses, and approximately \$675 to cover incidental expenses. Subjects are the same as those in the four-week course plus the academic portion of the GMC (see "Four-Year Program" above).

Students enrolled in POC incur a military obligation and are paid \$100 per month during the academic year. Graduation and successful completion of POC leads to a commission as a second lieutenant. Cadets then report to one of the challenging assignments in the Air Force.

## Freshman-Year Courses

**1A-1B-1C. U.S. Military Forces in the Contemporary World (2 units each).** Lecture, one hour. Air Force ROTC students should complete all three courses, preferably in sequence. Willingness to participate in class discussion required. P/NP or letter grading:

**1A.** Examination of roles and norms expected from military officers, with emphasis on characteristics of national power, U.S. national security apparatus, and key elements of current strategic doctrine. Role of U.S. Navy, Marine Corps, and Army.

Capt. Quilliam (F)

**1B.** Focus on roles, missions, and organization of the Air Force, covering basic elements of air doctrine and functions of general purpose, strategic, and aerospace support forces. Emphasis on how aerospace forces are utilized during conflict, as well as current problems in defense procurement.

Capt. Quilliam (W)

**1C.** "Threat assessment" of U.S.S.R. military and political policies and potential for military conflict in selected regions of the world. Examination of low-level conflict as represented by terrorist actions and guerrilla warfare. Analysis of basic elements of strategy which deter war.

Capt. Quilliam (Sp)

## Sophomore-Year Courses

**20A-20B-20C. Developmental Growth of Air Power (2 units each).** Lecture, one hour. Development of air power over past 80 years. Development of various concepts of employment of air power, with emphasis on factors which have prompted research and technological change. Key events and elements in history of air power, especially where these provide significant examples of impact of air power on strategic thought. P/NP or letter grading.

Maj. Roundtree (F,W,Sp)

## Upper Division Courses

**130A-130B-130C. Concepts of Air Force Management and Leadership.** Lecture, three hours. Course 130A is prerequisite to 130B, which is prerequisite to 130C. Analysis of principles and functions of management, leadership, and organizational behavior, with special reference to the Air Force as a model. Problem solving, information systems and models, quantitative methods, and computer systems. Group discussions, case studies, films, and role-playing used as teaching devices. Communicative skills strengthened through preparation of written reports and oral presentations.

Capt. Leppellere (F,W,Sp)

**140A. Military Judicial System.** Lecture, three hours. Introduction to military justice system, international laws of armed conflict relating to air operations, and foundations of military professionalism. Oral and written reports to strengthen communicative skills. P/NP or letter grading.

Col. Jorgenson (F)

**140B. The Military in American Society.** Lecture, three hours. Forces and issues in social context of the American military. Influence of social norms, societal pressures, and cultural factors on functions and role of the military professional in the U.S. Communicative skills strengthened through extensive classroom presentations. P/NP or letter grading.

Col. Jorgenson (W)

**140C. American Defense Policy.** Lecture, three hours. U.S. security policy with respect to factors that influence its formulation, bureaucracy that formulates and implements it, and forms it has taken and may take in the future. Communication techniques strengthened, and communication abilities oriented to Air Force requirements through preparation of papers and classroom presentation and discussion. P/NP or letter grading.

Col. Jorgenson (Sp)

**199. Special Studies in Aerospace Studies (2 or 4 units).** Prerequisite: consent of instructor. Course of study for undergraduates who wish to engage in independent research under direct supervision of a department faculty member. P/NP or letter grading.

Col. Jorgenson

## Military Science

127 Men's Gym, (310) 825-7381, 825-7384

### Professor

Kevin L. Murphy, M.S., Lieutenant Colonel, *Chair*

### Adjunct Assistant Professors

Edmund Davis, B.A., Major

Rodney J. Leonard, B.A., Captain

## Army ROTC Scope and Objectives

Army ROTC prepares selected students for leadership as commissioned officers in the U.S. Army, Army Reserve, or National Guard. This training includes in-depth study of the military establishment, military history, doctrine, leadership principles, management, and many other basic skills necessary to build motivated, effective leaders.

## Programs

The military science curriculum is divided into two parts: (1) the Basic Course, two years of lower division study during which students must complete 12 units of coursework and (2) the Advanced Course, two years of upper division study consisting of 14 units of coursework and a six-week summer camp.

Transfer students and others who were unable to enroll in the Basic Course can receive equivalent credit in several different ways (see "Two-Year Program" below).

Admission to the Advanced Course is limited to selected students who meet all academic and physical requirements. Students in this course receive a subsistence allowance of \$100 a month for 10 months during each of the two academic years, plus military science books and uniforms. After completion of the Advanced Course and graduation, students have the opportunity to be commissioned as second lieutenants in one of the Army's 17 specialty areas in either the Army National Guard, Reserves, or Active Army. Students' desires are a major factor in determining which branch is selected.

Students selected for Advanced ROTC must attend a six-week Advanced Camp between their Military Science III and IV years. Cadets receive an allowance for travel expenses and are paid for attendance.

The active duty obligation for those students selected to enter the Reserves or National Guard is for initial training, and only for a period of several months. Students accepting ROTC scholarships and a commission in the Regular Army, or who are selected to enter the Active Army, serve longer terms. ROTC students wishing to obtain advanced degrees may be granted a delay in reporting to their initial assignment.

## Four-Year Program

Students are enrolled in the Basic Course (freshman and sophomore years) on a voluntary basis. After completion of the Basic Course and before entrance into the Advanced Course (junior and senior years), students are required to execute a contract with the Department of the Army agreeing to complete the Advanced Course and accept a commission if offered.

## Two-Year Program

This program is designed for students who receive placement credit for two years of ROTC and directly enter the Advanced Course. Placement credit may be given for completing three years of high school Junior ROTC, attending a paid ROTC summer camp, joining the Army Reserve or National Guard (veterans may receive VA benefits concurrently with Advanced Course subsistence allowances), completing two years of college-level Air Force or Navy ROTC, completing an ROTC compression course, or previous military service.

## Commissioning

Successful completion of the Advanced Course program, one course each in computer literacy, mathematical reasoning, written communications, military history, and human behavior, and a bachelor's degree may lead to a commission as a second lieutenant in the Army Reserve, National Guard, or Active Army. Distinguished graduates may qualify for a commission in the Regular Army.

## Lower Division Courses

Army ROTC students may satisfy military history requirements by completing History 7B, 125E, 125F, 127A, 127B, 130C, 147A, 148A, 148B, 148C, 152A, or 152B in lieu of Military Science 110, with consent of the ROTC adviser.

**000. Leadership Laboratory (No credit).** Laboratory, three hours (lower division cadets) or four hours (upper division cadets). All cadets must be concurrently enrolled in a military science course; upper division cadets must also be under a contracted obligation with department. Designed to allow cadets to apply leadership techniques and military skills taught in classroom and to develop their confidence as future military officers.

**10. Introduction to Leadership (2 units).** Lecture, one hour; discussion, one hour. Introduction to leadership and motivational theory. Topics include nature of organizations, individual behavior, motivation and performance, values and organizational commitment, and influence processes. (F)

**11. U.S. Defense Establishment I (2 units).** Lecture, one hour; discussion, one hour. Study of evolution and organization of U.S. Department of Defense, including study of military services, with emphasis on the U.S. Army. P/NP or letter grading. (W)

**12. U.S. Defense Establishment II (2 units).** Lecture, one hour; discussion, one hour. Fundamentals of national security policy development. P/NP or letter grading. (Sp)

**14. Principles of Land Navigation Applicable in Maneuver (2 units).** Lecture, one hour; discussion, one hour. Prerequisite: consent of instructor. Introduction to topographic maps and aerial photographs and their relation to land navigation; conceptual linkage to basic military tactics. Topics include map coordinate systems, scale and distance relationships, intersection and resection, photo interpretation, squad and platoon operations, and resource planning techniques. Introduction to new technologies, including Global Positioning Systems (GPS). (Sp)

**18. Modern Guerrilla Warfare (2 units).** Lecture, one hour; discussion, one hour. Prerequisite: undergraduate standing. Introduction to low intensity conflict and guerrilla strategies; explanation/discussion of political, economic, religious, and social factors contributing to civil unrest and/or insurgencies. Topics include nonmilitary responses, military tactics, interrelationship of military and government, psychological warfare, and civic actions. (W)

**21. Psychology of Leadership I (2 units).** Lecture, one hour; discussion, one hour. Study of relationship of individual differences, group dynamics, formal organizational constraints, and impact of society on leadership process. Introduction to external environmental pressures on a leader and psychology of the individual as a follower, examined in areas of motivation, peer pressure/conformity, and group norms. (W)

**24. Theory of Warfare (2 units).** Inquiry into theory, nature, causes, and elements of warfare, with attention also to evolution of weapons and warfare. (F)

## Upper Division Courses

**110. U.S. Military History (3 units).** Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Survey of American military history from 1860 to the present. Causes of war, strategy, tactics, and technological developments set against economic, political, and diplomatic concerns. Impact of warfare on society. (F)

**112. Psychology of Leadership II (3 units).** Lecture, one hour; discussion, one hour. Prerequisite: consent of instructor. Introduction to various individual leadership styles and personalities to assist students in development of their own individual style. Different philosophies of leadership, along with dimensions of leader behavior. Special consideration to counseling, management, and communication techniques that must be mastered to be an effective leader. (W)

**113. Theory of Learning Applied to Teaching (2 units).** Lecture, one hour; discussion, one hour. Prerequisite: consent of instructor. Study of instructional processes, lesson content planning procedures, techniques of applicatory education, role of testing (including evaluation and analysis). Emphasis on development of training programs to maximize organizational effectiveness. P/NP or letter grading. (F)

**123. Military Legal Systems (2 units).** Lecture, one hour; discussion, one hour. Prerequisite: consent of instructor. Introduction to theory and application of military law and legal systems, with emphasis on Uniform Code of Military Justice and rights of the accused under the constitution. (Sp)

**125. Decision Making (2 units).** Lecture, one hour; discussion, one hour. Prerequisite: consent of instructor. Designed to present students who will become commissioned officers with new insight into modern methods of managerial decision making and into various steps involved in the process. Introduction to various components of leadership and functions of management in order to understand where areas of problem analysis and decision making impact and how they fit into leadership and management. Various steps which comprise the problem analysis and decision-making processes. (Sp)

**126. Military Professionalism and Ethics (2 units).** Lecture, 30 minutes; discussion, 90 minutes. Prerequisite: consent of instructor. Ethical concepts held by America's military institution. Classification of the military as a profession, special social responsibilities of those in the military, values related to and accepted by military society, and an ethical reasoning/decision-making process and model. (W)

**199. Supervised Independent Studies (1 to 3 units).** Prerequisites: upper division standing, consent of instructor. Supervised independent studies and research for undergraduate students who desire to pursue topics of their own selection.

## Naval Science

123 Men's Gym, (310) 825-9075

### Professor

Ralph F. Smith, M.S., Captain, U.S. Navy, *Chair*

### Adjunct Assistant Professors

Cass D. Howell, M.S., Lieutenant Colonel, U.S. Marine Corps

Jon Gilbert Hum, B.A., Lieutenant, U.S. Navy  
Frederick L. Mickle, B.A., Captain, U.S. Marine Corps

Barry J. Phillips, B.S., Lieutenant, U.S. Navy  
James D. Whitlock, B.A., Lieutenant, U.S. Navy

## Navy ROTC Scope and Objectives

Navy ROTC at UCLA offers subsidized and non-subsidized programs for college students who wish to serve their country as commissioned officers in the U.S. Navy or Marine Corps. The primary objectives of NROTC are to provide students with understanding of the fundamental concepts and principles of naval science; basic understanding of associated professional knowledge; appreciation of the requirements for national security; and a strong sense of personal integrity, honor, and individual responsibility.

NROTC enables college graduates to use their education in such military fields as marine engineering, nuclear propulsion engineering, aviation, and Marine Corps infantry, aviation, and combat service support roles. It also provides opportunity to develop leadership and management skills in a challenging environment of high responsibility.

The Department of Naval Science offers several programs for which U.S. citizenship is required.

## College Program

This is a four-year program open to physically qualified men and women between the ages of 17 and 21. Students receive \$100 per month in their junior and senior years and complete one summer training cruise after their third year. After graduation, students are commissioned as Ensign, U.S. Naval Reserve, or Second Lieutenant, U.S. Marine Corps Reserve. A three-year active duty obligation is incurred.

## Two-Year Program

Applications are accepted from UCLA students as well as incoming junior college transfers. After a six-week summer training period, students enroll in NROTC as juniors. Applicants should contact the department no later than March 1 of their sophomore year.

## Freshman-Year Courses

**1A. Introduction to Naval Science (2 units).** Introduction to organization of the Naval Service, various components of the Navy, career opportunities, shipboard damage control, fire fighting, propulsion systems, and some customs and traditions of the Naval Service.

Lt. Phillips (F)

**20B. Seapower and Maritime Affairs (2 units).** Conceptual study of seapower, emphasizing historical development of naval and commercial power. Seapower examined in relation to economic, political, and cultural strengths, focusing on current abilities of specific nations to use the oceans to attain national objectives.

Capt. Mickle (Sp)

## Sophomore-Year Courses

**1B. Naval Ship Systems I.** Introduction to naval engineering, with emphasis on basic power cycles used in naval propulsion systems, basic thermodynamic principles inherent in ship propulsion, and salt water distillation systems. Detailed examination of ship hull and superstructure design, ship stability, and buoyancy.

Lt. Whitlock (F)

**20A. Naval Ship Systems II.** Study of naval weapon systems, with emphasis on infrared, radar, and sonar principles. Target designation and acquisition, methods of solving fire control problem, target detection systems. Analysis of transfer and feedback functions inherent in weapon systems.

Lt. Phillips (W)

## Junior-Year Courses

**101A. Navigation I.** Study of principles of piloting, celestial, and electronic navigation employed in determining a ship's position at sea. Celestial and electronic theory, mathematical analysis, sextant sights, and use of navigational aids.

Lt. Hum (W)

**101B. Navigation II.** Prerequisite: course 101A. Study of rules of the road, shiphandling, and basic concepts of multiple ship formations and maneuvering. In-depth analysis of problems associated with operations on high seas and inland waters applying to civil and U.S. Naval craft.

Lt. Hum (Sp)

**\*103. Evolution of Warfare.** Study of evolution of warfare, including historical and comparative consideration of influence that leadership, political, economic, and sociological and technological development factors have had on warfare and influence they continue to exert in age of limited warfare.

Capt. Mickle (W)

## Senior-Year Courses

**102B. Naval Leadership and Management I.** Examination of current and classical leadership and management theories, with emphasis on their application to junior military officer's role as a leader/manager. Topics include managerial functions, performance appraisal, motivation theories, group dynamics, leadership theories, and communication.

Capt. Mickle (F)

**102C. Naval Leadership and Management II (2 units).** Prerequisite: course 102B. Current leadership and management in the U.S. Navy. Areas include human resources management, personnel management, material management, and performance and career evaluation.

Lt. Whitlock (W)

**\*104. Expeditionary Military Operations.** Study of historical use of expeditionary military operations, with particular emphasis on doctrine, tactics, and equipment used. Examination of topics through study of political and military objectives by focusing on historical examples, including Marathon, Gallipoli, World War II, Korea, Beirut, and Grenada. Examination of contemporary doctrine through study of recent operations.

Capt. Mickle (W)

**199. Supervised Independent Studies (1 to 4 units).** Prerequisites: upper division standing, consent of instructor. Supervised independent studies and research for undergraduate students who desire to pursue topics of their own selection. P/NP or letter grading.

## Scandinavian Section

See Germanic Languages

## Slavic Languages and Literatures

115 Kinsey Hall, (310) 825-2676

### Professors

Henning Andersen, Ph.D. (*Slavic Languages*)

Henrik Birnbaum, Ph.D. (*Slavic Languages and Literatures*)

Michael Heim, Ph.D. (*Czech and Russian Literature*)

Vyacheslav Vs. Ivanov, Ph.D. (*Slavic Languages, Russian Literature*)

Emily Klenin, Ph.D. (*Slavic Languages and Literatures*)

Gail Lenhoff, Ph.D. (*Russian Literature*)

Aleksandr L. Ospovat, Ph.D. (*Russian Literature*)

Ronald Vroon, Ph.D. (*Russian Literature*), Chair

Dean S. Worth, Ph.D. (*Slavic Languages*)

Aleksandar Albijanić, Ph.D., *Emeritus*

Thomas Eekman, Ph.D., *Emeritus*

Marija Gimbutas, Ph.D., *Emerita*

Kenneth E. Harper, Ph.D., *Emeritus*

Vladimir Markov, Ph.D., *Emeritus*

Rochelle Stone, Ph.D., *Emerita*

### Associate Professor

Peter Hodgson, Ph.D. (*Russian Literature*)

### Assistant Professors

Irina Gutkin, Ph.D. (*Russian Literature*)

Roman Koropecky, Ph.D. (*Polish and Ukrainian Literature*)

### Lecturers

Edward Denzler, M.A. (*Russian*)

Olga Kagan, Diploma (*Russian*)

## Scope and Objectives

The Bachelor of Arts degree in Russian Language and Literature is designed to provide students with basic mastery of the Russian language and familiarity with the classics of Russian literature. Within the major, students concentrate either in Russian literature or Russian linguistics. Students typically begin to study Russian in their first year, but those contemplating a Russian major later in their academic program can fulfill the Russian language requirements by combining regular coursework with summer programs or with the University of California semester program at the Financial Academy of the Russian Federation in Moscow, which is open to students who have completed the equivalent of two years of study (American Council of Teachers of Foreign Languages — ACTFL — level 1). Students interested in this program should consult the undergraduate adviser as early as possible.

The Bachelor of Arts degree in Slavic Languages and Literatures is designed to provide students with basic mastery of two Slavic languages and familiarity with their literatures, as well as general background in the cultural, political, and social history of the Slavic peoples.

The department also offers a Bachelor of Arts degree in Russian Studies in which students achieve a basic mastery of the Russian language, as well as familiarity with Russian literature, history, and culture.

The graduate program provides advanced training in *Slavic linguistics and literature leading to the M.A. and Ph.D. degrees*. The primary task of the department faculty is to develop and refine the critical and analytic skills of its students in preparation for productive careers in college teaching and research in the Slavic field. Alternative careers include language teaching, translation, interpreting, librarianship, and government service.

## Undergraduate Study

The department offers three majors: (1) Russian language and literature, with concentrations in Russian literature or Russian linguistics, (2) Slavic languages and literatures, and (3) Russian studies. The equivalent of a major in Slavic or Russian language and literature is normally required for admission to the department's graduate program and is used to determine the number of courses in Russian literature and/or linguistics that students majoring in Russian studies are expected to make up in order to receive graduate degrees in the department. Students not majoring in Slavic or Russian language and literature who intend to pursue graduate study in the department are strongly encouraged to take courses in Russian literature and linguistics during their undergraduate years to reduce the number of makeup courses required. Qualified seniors may also take graduate courses numbered below 220 with consent of the instructor and the graduate and undergraduate advisers.

\*Course to be taken by candidates for commissions in the Marine Corps or Marine Corps Reserve in lieu of courses 101A, 101B, 102B, 102C.

## Bachelor of Arts in Russian Language and Literature

### Preparation for the Major

*Required:* Russian 1, 2, 3, 4, 5, 6, or equivalent proficiency as determined through departmental testing (equivalent to ACTFL level 1), and 99A.

### The Major

*Required:* Russian language skills equivalent to ACTFL level 2 (students usually take Russian 101A-101B-101C and 102A-102B-102C to attain level 2 proficiency; consult the undergraduate adviser for information on summer programs and the Moscow semester program), Russian 106A-106B and 130A or 140A.

You also must concentrate in either literature or linguistics. For the *literature* concentration, Russian 118, 119, 120 (all three may be taken in the sophomore year) and two courses from 124A through 124F, 125, 126, 130B, 130C, 134, 140B, 140C, 140D, M150 are required. For the *linguistics* concentration, two courses from Linguistics 103, 110, 120A, 120B, and two courses from Slavic 201, 202, Russian 118, 119, 120, 124A through 124F, 125, 126, 130B, 130C, 134, 140B, 140C, 140D, M150, Linguistics 103, 110, 120A, 120B, 127 are required.

## Bachelor of Arts in Slavic Languages and Literatures

### Preparation for the Major

*Required:* Russian 1, 2, 3, 4, 5, 6, or equivalent proficiency as determined through departmental testing (equivalent to ACTFL level 1), Slavic 99.

### The Major

*Required:* Russian 101A-101B-101C or equivalent proficiency as determined through departmental testing (equivalent to ACTFL level 1+); courses 118, 119, 120 (all three may be taken in the sophomore year); one three-course sequence from Czech 102A-102B-102C, 102D-102E-102F, Polish 102A-102B-102C, 102D-102E-102F, Serbo-Croatian 103A-103B-103C, 103D-103E-103F (placement with consent of instructor); three courses from Czech 102D, 102E, 102F, Polish 102D, 102E, 102F, Serbo-Croatian 103D, 103E, 103F, Russian 102A, 102B, 102C, 123, 130A, 130B, 130C, 134, 140A through 140D, M150; two courses from Czech 155A, 155B, Polish 152A, 152B, Serbo-Croatian 154A, 154B, Slavic M125, M126.

## Bachelor of Arts in Russian Studies

### Preparation for the Major

*Required:* Russian 1, 2, 3, 4, 5, 6, or equivalent proficiency as determined through departmental testing (equivalent to ACTFL level 1), and 99A.

### The Major

*Required:* Russian 101A-101B-101C or equivalent proficiency as determined through de-

partmental testing (equivalent to ACTFL level 1+), three courses in Russian literature, two courses from History 131A through 131D, two courses from Economics 182, Geography 184, Political Science 128A, 128B, 156, Russian M170, and five additional courses selected from those listed above, from Russian language, literature, or linguistics courses, or from special courses (approved by the undergraduate adviser) offered by the Departments of Art, Art History, Design, Film and Television, History, Music, Political Science, Slavic Languages and Literatures, and Theater.

## Graduate Study

The Department of Slavic Languages and Literatures at UCLA offers M.A. and Ph.D. degrees in Slavic Languages and Literatures.

### Admission

In addition to the University minimum requirements, the department requires an undergraduate major in the field or three years of Russian language and a sufficient number of Russian history, literature, and linguistics courses to document a foundation for graduate study. For application to the Ph.D. program, the department requires a UCLA M.A. in Slavic Languages and Literatures or its equivalent. If you do not hold a UCLA M.A. in Slavic Languages and Literatures, you are required to make up deficiencies as stipulated by the graduate adviser and take the M.A. examination as a screening examination within your first year.

All applicants must provide three letters of recommendation from persons capable of judging their academic potential and submit a writing sample in the field they wish to pursue. No departmental admission tests are necessary, but the Graduate Record Examination (GRE) is required.

A department brochure describing the curriculum in some detail (graduate and undergraduate) is available from the Graduate Adviser, Slavic Languages and Literatures, 115 Kinsey Hall, UCLA, Los Angeles, CA 90024-1502.

### Major Fields or Subdisciplines

Candidates for the M.A. and Ph.D. degrees select a specialization in either literature or linguistics, with Russian as the principal language and literature. On the Ph.D. level, students may specialize in a language or literature other than Russian by special arrangement.

## Master of Arts Degree

### Foreign Language Requirement

There are two foreign language requirements which must be completed before the M.A. comprehensive examination: (1) you must pass a departmental Russian language proficiency examination which tests your ability to translate from Russian to English and vice versa. This examination may be retaken each term until a pass grade is achieved; (2) you must demon-

strate ability to read scholarly literature in either French or German by one of three methods: (a) passing the appropriate Graduate School Foreign Language Test (GSFLT) reading examination with a score of 500 or better, (b) passing the departmental reading examination, or (c) completing level five at UCLA in one of the languages with a grade of B or better (equivalent university-level coursework in French or German taken within two years of admittance may satisfy this requirement at the discretion of the graduate adviser).

### Course Requirements

Slavic 200, 201, Russian 201A-201B-201C, 204, 212A, and 220A are required of all M.A. students.

Literature students must also take Russian 211A or 211B, 212B, 213, and 219.

Linguistics students must also take Slavic 202, 221, Russian 220B, and one course from 211A, 211B, 212B, 213.

Courses in the 500 series may not be applied toward the M.A. course requirements.

### Comprehensive Examination Plan

Application for advancement to candidacy must be made no later than the second week of the term in which the M.A. examinations are to be taken and is accepted only if you have satisfied the foreign language requirement in French or German and have passed the Russian Language Proficiency Examination. Examinations are offered at the end of Fall and Spring Quarters. After you have declared your intention to take the examination, a committee is appointed by the chair. The comprehensive examination has two parts — written (three hours) and oral (two hours) — and is based on coursework and the departmental reading list. The examinations include materials from both subdisciplines. If you receive a pass grade on the written examination, you are admitted to the oral examination which is designed to test the fields of major interest and general background. It is conducted partly in Russian.

Your combined performance in the written and oral examinations is graded high pass, pass, or fail. A grade of high pass or pass is necessary to receive the M.A. degree; the grade of high pass is necessary to enter the Ph.D. program. Examinations may be repeated once; there is a six-month limit on retaking examinations graded pass and a one-year limit on examinations graded fail.

## Ph.D. Degree

### Admission

You are formally admitted to the Ph.D. program after (1) passing the UCLA M.A. comprehensive examination with a grade of high pass, (2) passing the reading examination in both French and German (see "Foreign Language Requirement"), and (3) demonstrating proficiency in modern Slavic languages other than

Russian. Literature students must complete one year of the language of their second Slavic literature; linguistics students must complete one year of one language and two years of another (one of the languages should represent the West Slavic group, the other the South Slavic group). You may demonstrate equivalent proficiency through written and oral examinations in lieu of taking the language courses.

The comprehensive examination serves as a screening examination for admission to the doctoral program if you are entering UCLA with an M.A. from another institution. You may retake the examination once in order to achieve the necessary high pass grade.

### Foreign Language Requirement

You must demonstrate ability to read scholarly literature in both French and German by completing one of the three methods listed under the master's degree. With departmental consent, students specializing in linguistics may substitute reading knowledge in another language important to the study of Slavic linguistics (Finnish, Hungarian, Lithuanian, Latvian, Romanian, or a Turkic language relevant to East or South Slavic historical linguistics) and a score of 450 on the Graduate School Foreign Language Test (GSFLT) in either French or German. Reading knowledge of two such languages may, by the same procedure, be substituted for the entire French or (more rarely) German examination.

### Course Requirements

Before the formation of a doctoral committee, you must have been officially admitted to the doctoral program and have taken the following required courses.

Linguistics students must take Slavic 222, 223, and four other advanced linguistics courses or seminars (numbered above 220).

Recommended preparation for linguists includes Linguistics 103, 110, 120A, 120B, M150.

Literature students must take two courses from Slavic 230A-230B-230C; Russian 211A or 211B (to complement the M.A. course selection); and three additional advanced literature courses or seminars.

Candidates specializing in literature are advised to acquire sound general knowledge of modern Western European literature.

### Qualifying Paper

You are required to submit to the faculty a qualifying paper that demonstrates your ability to conduct serious and original research. The paper must be received and approved by your faculty adviser (usually the prospective examination and dissertation committee chair) no later than one term preceding the term in which you expect to take the qualifying examinations.

### Qualifying Examinations

All students are expected to have sound general knowledge of both Slavic philology and Russian literary history equivalent to that required for the M.A. at UCLA.

Students in linguistics must take one written examination on the structure of modern Russian and another on comparative Slavic linguistics, the history of Russian, and the history and structure of a second Slavic language. Each examination lasts three hours.

Students in literature must take a series of six examinations on Russian literature and one examination on a Slavic literature other than Russian. Each examination is one hour in length; all seven must be taken within a one-week time period.

If you receive a grade of pass on the written examination(s), you are admitted to a two-hour University Oral Qualifying Examination, which is designed to test the fields of major interest and general background, and which typically includes discussion of the dissertation topic.

After considering your overall performance in both the oral and written examinations, the committee assigns a cumulative grade. A pass grade entitles you to write a dissertation in order to receive the Ph.D. degree. At the committee's discretion, you may be required to retake any or all portions of the Ph.D. examinations within one calendar year after the first attempt.

Within two terms (or one term and a summer) after passing the qualifying examinations, you must prepare a prospectus of the dissertation.

You are required to deliver a formal lecture in the California Slavic Colloquium no later than two calendar years after advancement to candidacy.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Final Oral Examination

A final oral examination is required except in case of geographically imposed hardship.

## Slavic

### Lower Division Course

**99. Introduction to Slavic Civilization.** Lecture, three hours. Introductory survey of social and cultural institutions of the Slavic peoples and their historical background.

### Upper Division Courses

**M125. Interwar Central European Prose.** (Same as German M119G and Humanities M162.) Lecture, three hours. Analysis of selected novels, stories, plays, and essays of representative authors of the 1920s and 1930s in translation. Special attention to relation between literature and historical and ethnic concerns. P/NP or letter grading.

**M126. Postwar Central European Prose.** (Same as German M119H and Humanities M166.) Lecture, three hours. Analysis of selected novels, stories, plays, and essays of representative contemporary authors in translation. Special attention to relation between art and ideology. P/NP or letter grading.

**177. Baltic Languages and Cultures (2 units).** General survey of peoples speaking Old Prussian, Lithuanian, and Latvian; their linguistic, historical, and ethnic affiliations.

**M179. Baltic and Slavic Folklore and Mythology.** (Same as Folklore M126.) Lecture, three hours. General course for students interested in folklore and mythology and for those interested in Indo-European mythic antiquities.

**199. Special Studies (2 to 8 units).** Prerequisites: senior standing, consent of instructor.

## Graduate Courses

**200. Proseminar.** Presentation/discussion, three hours. Prerequisite: graduate standing. Required for M.A. (linguistics, literature). Introduction to research tools and techniques, as well as broad exposure to metalanguages of linguistics and literary criticism.

## Linguistics

**201. Introduction to Old Church Slavic.** Lecture, three hours. Required for M.A. (linguistics, literature). Introduction to phonology and grammar; readings.

**202. Introduction to Comparative Slavic Linguistics.** Lecture, three hours. Prerequisite: course 201. Required for M.A. (linguistics). Introduction to comparative phonology and grammar of Slavic languages.

**221. Introduction to East Slavic Languages.** Lecture, three hours. Prerequisite: course 202. Recommended: Russian 102A-102B-102C or Ukrainian 101A-101B-101C. Required for M.A. (linguistics). Introduction to structure and history of East Slavic languages.

**222. Introduction to West Slavic Languages.** Lecture, three hours. Prerequisite: course 202. Recommended: Czech 102A-102B-102C or Polish 102A-102B-102C. Required for Ph.D. (linguistics). Introduction to structure and history of West Slavic languages.

**223. Introduction to South Slavic Languages.** Lecture, three hours. Prerequisite: course 202. Recommended: Serbo-Croatian 103A-103B-103C or Bulgarian 103A-103B-103C. Required for Ph.D. (linguistics). Introduction to structure and history of South Slavic languages.

**224. Introduction to Ukrainian and Belorussian.** Lecture, three hours. Prerequisite: course 202. Introduction to history and structure of Ukrainian and Belorussian.

**M229. Introduction to Slavic Bibliography (2 units).** (Same as Library and Information Science M229C.) Prerequisite: consent of instructor. Introduction to Slavic and East European bibliography for the humanities and social sciences. Emphasis to be determined by requirements and background of enrolled students. Topics include relevant library terminology and concepts; survey of languages and translation systems; acquisition of Slavic and East European library materials; Slavic and East European scholarship in the West; relevant reference sources, archival resources, and research methods; survey of on-line data bases; compilation of bibliographies. S/U grading.

**241A-241B. Advanced Old Church Slavic.** Lecture, three hours. Prerequisite: course 201. **241A.** Advanced Readings in Canonical Texts; **241B.** East, West, and South Slavic Recensions of Church Slavic.

**242. Comparative Slavic Linguistics.** Lecture, three hours. Prerequisite: course 202. Selected topics in development of Common Slavic.

**251. Introduction to Baltic Linguistics.** Lecture, three hours. Prerequisite: course 202. Introduction to Baltic linguistics, with special attention to relationship between Baltic and Slavic.



**261. Slavic Paleography.** Lecture, three hours. Prerequisite: course 201. Introduction to Slavic paleography: inscriptions, birchbark letters, Glagolitic and Cyrillic texts.

**262A-262B. West Slavic Linguistics.** Lecture, three hours. Prerequisite: course 222. **262A.** Lekhitic; **262B.** Czechoslovak, Sorbian.

**263A-263B. South Slavic Linguistics.** Lecture, three hours. Prerequisite: course 223. **263A.** Serbo-Croatian, Slovene; **263B.** Bulgarian, Macedonian.

**281. Seminar: Slavic Linguistics.** Seminar, three hours. Selected topics in comparative and historical Slavic linguistics. May be repeated for credit with consent of instructor and graduate adviser.

**282. Seminar: Structural Analysis.** Seminar, three hours. Selected topics. May be repeated for credit with consent of instructor and graduate adviser.

## Literature

**230A-230B-230C. Comparative Slavic Literature.** Lecture, three hours. Recommended prerequisites: upper division courses in Czech, Polish, Russian, and Yugoslav literatures. Two terms required for Ph.D. (literature). **230A.** Middle Ages through Baroque; **230B.** Classicism to Romanticism; **230C.** Realism to Modernism.

**290. Seminar: Comparative Slavic Literature.** Seminar, three hours. Prerequisites: courses 230A-230B-230C. Recommended: reading knowledge of one Slavic language in addition to Russian. Selected topics involving more than one Slavic literature or Slavic and Western literatures. May be repeated for credit with consent of instructor and graduate adviser.

**295. Seminar: Literary Analysis.** Seminar, three hours. Recommended (but not prerequisite): reading knowledge of one Slavic language in addition to Russian. Selected topics from various Slavic literatures or Slavic and Western literatures, with emphasis on analytic methods. May be repeated for credit with consent of instructor and graduate adviser.

## Special Studies

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research (2 to 8 units).** Prerequisite: consent of instructor and graduate adviser.

**597. Preparation for M.A. Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 8 units).** Prerequisite: consent of instructor and graduate adviser.

**599. Research for Ph.D. Dissertation (2 to 12 units).**

## Bulgarian

### Lower Division Course

**99. Introduction to Bulgarian Civilization.** Lecture, three hours. Introductory survey of social and cultural institutions of the Bulgarian people and their historical background.

### Upper Division Courses

**103A-103B-103C. Elementary Bulgarian.** Recitation, five hours. Basic courses in the Bulgarian language.

**154. Survey of Bulgarian Literature.** Lecture, three hours. Prerequisite: upper division standing. Lectures and readings in English. Survey of Bulgarian literature from the Middle Ages to the present.

## Czech

### Upper Division Courses

**102A-102B-102C. Elementary Czech.** Recitation, five hours. Basic courses in the Czech language.

**102D-102E-102F. Advanced Czech.** Recitation, three hours. Prerequisite: course 102C.

**155A-155B. Czech Literature.** Lecture, three hours. Lectures and readings in English. **155A.** Survey of Czech Literature from the Middle Ages to the Present; **155B.** Selected Topics.

## Polish

### Upper Division Courses

**102A-102B-102C. Elementary Polish.** Recitation, five hours. Basic courses in the Polish language.

**102D-102E-102F. Advanced Polish.** Recitation, three hours. Prerequisite: course 102C.

**152A-152B-152C. Survey of Polish Literature.** Lecture, three hours. Lectures and readings in English. **152A.** From the Middle Ages to Neoclassicism; **152B.** Romanticism and Realism. (Formerly numbered 160.); **152C.** From Young Poland to the Present. (Formerly numbered 152B.).

### Graduate Course

**280. Seminar: Polish Literature.** Seminar, three hours. Selected topics in Polish prose, poetry, and drama. May be repeated for credit with consent of instructor and graduate adviser.

## Russian

### Language Courses

**1. Elementary Russian.** Recitation, five hours; laboratory, one hour.

**2. Elementary Russian.** Recitation, five hours; laboratory, one hour.

**3. Elementary Russian.** Recitation, five hours; laboratory, one hour.

**4. Intermediate Russian.** Recitation, four hours; laboratory, one hour.

**5. Intermediate Russian.** Recitation, four hours; laboratory, one hour.

**6. Intermediate Russian.** Recitation, four hours; laboratory, one hour.

**10. Intensive Course in Russian (12 units).** Intensive basic course in the Russian language equivalent to courses 1, 2, and 3.

**11A-11B-12A-12B-13A-13B. Self-Paced Program in Russian (2 to 12 units).** Basic courses in the Russian language. Each two-unit course in sequence requires 30 minutes of laboratory session per week and 30 minutes of discussion session per week, plus individual instruction as required by the staff. Courses 11B and higher require completion of or simultaneous enrollment in all courses lower in sequence.

**101A-101B-101C. Advanced Russian.** Lecture, five hours. Prerequisite: course 6. Advanced grammar, reading, and conversation.

**102A-102B-102C. Advanced Composition and Conversation: Reading of Contemporary Texts.** Lecture, three hours. Prerequisite: course 101C or consent of instructor. Advanced conversation and composition, using a multimedia approach (contemporary Russian prose, Soviet television and films).

**106A-106B. Reading and Translation of Difficult Literary Texts: Structure Analysis.** Lecture, three hours. Prerequisite: course 101C. Sequence that integrates concepts about the structure of Russian into practical language work at an advanced level, making more extensive use of literary texts.

**107. Russian for Social Scientists (2 units).** (Formerly numbered 107A-107B.) Prerequisite: three years of Russian or consent of instructor. Reading of texts relevant to social scientists: viewing of Soviet TV. May be repeated for credit.

## Linguistics Course

**123. Historical Commentary on Modern Russian.** Lecture, three hours. Prerequisite: course 101C. Historical explanation of phonological and morphological anomalies of modern Russian.

## Literature and Civilization Courses

**25. The Russian Novel in Translation.** Lecture, three hours. Designed for nonmajors. Study of major works by the great 19th-century Russian novelists.

**99A. Introduction to Russian Civilization.** Lecture, three hours. Introductory survey of social and cultural institutions of the Russian people and their historical background.

**99B. Soviet Civilization.** Lecture, three hours. Survey of literature, theater, cinema, television, press, music, and arts in the Soviet Union. Emphasis on contemporary period, with constant reference to Russian and early Soviet antecedents.

**118. Survey of Russian Literature to Pushkin.** Lecture, three hours. Prerequisite: upper division standing. Slavic majors should take this course during their sophomore year. Lectures and readings in English.

**119. Survey of 19th-Century Russian Literature.** Lecture, three hours. Prerequisite: upper division standing. Slavic majors should take this course during their sophomore year. Lectures and readings in English.

**120. Survey of 20th-Century Russian Literature.** Lecture, three hours. Prerequisite: upper division standing. Slavic majors should take this course during their sophomore year. Lectures and readings in English.

**124A-124F. Studies in Russian Literature.** Lecture, three hours. Lectures and readings in English. Following writers are alternately discussed: **124A.** Pushkin; **124B.** Gogol; **124C.** Turgenyev; **124D.** Dostoevsky; **124E.** Tolstoy; **124F.** Chekhov.

**125. The Russian Novel in its European Setting.** Lecture, three hours. Prerequisite: upper division standing. Lectures and readings in English. Emphasis on 19th- and 20th-century novelists.

**126. Survey of Russian Drama.** Lecture, three hours. Prerequisite: upper division standing. Lectures and readings in English. Major Russian plays from the 18th to 20th century.

**127. Women in Russian Literature.** Lecture, three hours. Prerequisite: upper division standing. Lectures and readings in English. Introduction to "alternative tradition" of women's writings in Russia and the Soviet Union. Emphasis on images of women expressed in this tradition as compared with those found in works of contemporary male writers.

**128. Russian Science Fiction.** Lecture, three hours. Readings in English. Introduction to Russian science fiction in the 20th century. Emphasis on function of science fiction in development of Russian culture before and after the October Revolution. P/NP or letter grading.

**130A-130B-130C. Russian Poetry.** Lecture, three hours. Prerequisite: course 6. Lectures and readings in Russian. **130A.** Introduction to Analysis of Poetic Texts; **130B.** From Mid-18th Century through Precursors of Symbolism; **130C.** From Late-19th Century through Contemporary Soviet Verse.

**134. Pushkin.** Lecture, three hours. Prerequisite: course 6. Lectures and readings in Russian. Major poetical works.

**140A-140D. Russian Prose.** Lecture, three hours. Prerequisite: course 6. Lectures and readings in Russian. Close reading of texts representing various periods and styles. Emphasis on narrative techniques, rhetorical strategies, and literary genres. **140A.** Introduction to Analysis of Prose Texts; **140B.** Karamzin to Turgenev; **140C.** Dostoevsky to Gorky; **140D.** Soviet and Emigre Writers.

**M150. Russian Folk Literature.** (Same as Folklore M150.) Lecture, three hours. Lectures and readings in Russian.

**M170. Russian Folklore.** (Same as Folklore M170.) Lecture, three hours. Lectures and readings in English. General introduction to Russian folklore, including survey of genres and related folkloric phenomena.

**193. Seminar: Russian Literature.** Lecture, three hours. Prerequisite: course 6 or consent of instructor. Recommended: course 101C. Reading and discussion of selected authors; written seminar papers usually required.

## Graduate Courses

### Linguistics

**201A-201B-201C. Introduction to Analysis of Russian Texts.** Lecture, three hours. Prerequisite: course 102C or consent of instructor. Required for M.A. (linguistics, literature). Conducted in Russian. Introduction to literary and linguistic approaches to literary texts. Reading, translation exercises, analysis, composition.

**203. Practicum in Russian (2 units).** Prerequisite: course 201C. Two terms per year required of Ph.D. students. Reading of advanced texts; advanced composition, conversation; stylistics. May be repeated for credit. S/U grading.

**204. Introduction to History of the Russian Literary Language.** Lecture, three hours. Prerequisites: course 123, Slavic 201. Required for M.A. (linguistics, literature). Survey of literary Russian in its cultural and historical setting.

**210. Readings in Old Russian Texts.** Lecture, three hours. Prerequisite: Slavic 201 or consent of instructor. Readings in premodern Russian texts. May be repeated for credit.

**220A-220B. Structure of Modern Russian.** Lecture, three hours. **220A.** Phonology and Morphology. Required for M.A. (literature, linguistics). Advanced study and analysis of problems in Russian phonology, inflection, and derivation. **220B.** Morphosyntax. Prerequisite: course 220A. Required for M.A. (linguistics). Survey of Russian syntax and grammatical categories.

**241. Topics in Russian Phonology.** Lecture, three hours. Prerequisite: course 220A. Selected topics in Russian phonology.

**242. Topics in Russian Morphology.** Lecture, three hours. Prerequisite: course 220A. Selected topics in Russian inflection and derivation.

**243. Topics in Historical Russian Grammar.** Lecture, three hours. Prerequisites: course 123, Slavic 221. Selected topics in Russian historical phonology, morphology, and syntax.

**263. Russian Dialectology.** Lecture, three hours. Prerequisite: Slavic 221. Phonology and grammar of modern Great Russian dialects.

**264. History of the Russian Literary Language.** Lecture, three hours. Prerequisites: course 204, Slavic 201. Evolution of literary Russian from the 11th to 20th century. Lectures and analysis of texts.

**265. Advanced Russian Syntax.** Lecture, three hours. Prerequisite: course 220B. Traditional and generative approaches to Russian syntax.

**266. Russian Lexicology.** Lecture, three hours. Examination of formal and semantic structure of Russian lexicon.

## Literature and Civilization

**211A-211B. Russian Literature before 1800.** Lecture, three hours. Required for M.A. (literature). **211A.** Old Russian Literature. Survey of Old Russian literature from the beginning through the Kievan and Muscovite periods up to end of the 17th century. **211B.** 18th-Century Russian Literature. Lectures and readings in major and secondary writers. Analysis of selected literary works.

**212A-212B. 19th-Century Russian Literature.** Lecture, three hours:

**212A.** The Golden Age. Required for M.A. (literature, linguistics). Survey of major literary movements and schools following demise of neoclassicism: sentimental school, early and late Romanticism, and beginnings of natural school. Discussion of representative works of Karamzin, Zhukovsky, Batyushkov, Pushkin, Baratynsky, Lermontov, Gogol.

**212B.** Age of Realism. Required for M.A. (literature). Survey devoted to emergence of critical and psychological realism, beginning with early works of Turgenev, Goncharov, and Dostoevsky, moving to major novels of Tolstoy, Dostoevsky, and Saltykov-Shchedrin, and concluding with works of the pre-symbolist period, especially the short stories of Chekhov.

**213. 20th-Century Russian Literature.** Lecture, three hours. Required for M.A. (literature). Lectures and readings in major and secondary writers.

**215. Contemporary Russian Literature.** Discussion, three hours. Prerequisite: course 213. Close readings in selected texts of poetry and prose, metropolitan and emigre, of recent vintage. May be repeated for credit. S/U or letter grading.

**219. Movements and Genres in Russian Literature.** Lecture, three hours. Prerequisite: Slavic 200. Required for M.A. (literature). Introduction to most important theoretical issues of Russian literature viewed in diachronic perspective.

**227. Linguistic Approaches to Russian Poetry.** Lecture, three hours. Prerequisite: graduate standing. Introduction to use of linguistic methods in study of Russian poetic texts. May be repeated for credit.

**251. Topics in Old Russian Literature.** Lecture, three hours. Prerequisite: course 211A. Detailed discussion of particular writers, periods, or genres.

**270. Russian Poetics.** Lecture, three hours. Prerequisites: courses 130A-130B-130C. Introduction to technical study of Russian poetics and versification, with attention to metrics, stanza forms, rhyme, and development of various verse types from the 18th into the 20th century.

**290. Seminar: Russian Poetry.** Seminar, three hours. Prerequisites: courses 130A-130B-130C. Recommended: course 270. Detailed study of a single author, period, or work. May be repeated for credit with consent of instructor and graduate adviser.

**291A. Seminar: Old Russian Literature.** Seminar, three hours. Prerequisite: course 211A. Selected topics from the 11th through the 17th century. May be repeated for credit with consent of instructor and graduate adviser.

**291B. Seminar: 18th-Century Russian Literature.** Seminar, three hours. Prerequisite: course 211B. Selected authors and works from 18th-century poetry, prose, and drama. May be repeated for credit with consent of instructor and graduate adviser.

**292. Seminar: 19th-Century Russian Literature.** Seminar, three hours. Prerequisites: courses 212A-212B. Selected authors and works from 19th-century poetry, prose, and drama. May be repeated for credit with consent of instructor and graduate adviser.

**293. Seminar: 20th-Century Russian Literature.** Seminar, three hours. Prerequisite: course 213. Selected authors and works from 20th-century poetry, prose, and drama. May be repeated for credit with consent of instructor and graduate adviser.

**294. Seminar: Russian Literary Criticism.** Seminar, three hours. Prerequisites: courses 211B, 212A-212B, 213. Detailed study of specific school of literary criticism, single literary critic, or period in Russian literary history as reflected in literary criticism. Simultaneous or similar phenomena in literary criticism in the West. May be repeated for credit with consent of instructor and graduate adviser.

**296. Seminar: History of Russian Culture.** Discussion, three hours. Reading and discussion on selected topics in history of Russian culture.

## Serbo-Croatian

### Upper Division Courses

**103A-103B-103C. Elementary Serbo-Croatian.** Recitation, five hours. Basic courses in the Serbo-Croatian language.

**103D-103E-103F. Advanced Serbo-Croatian.** Recitation, three hours. Prerequisite: course 103C.

**113A-113B-113C. Advanced Reading and Composition.** Recitation, three hours. Prerequisite: course 103F or consent of instructor. Reading and translation of difficult texts; advanced composition.

**154A-154B. Yugoslav Literature.** Lecture, three hours. Lectures and readings in English. **154A.** Survey of Yugoslav Literature from the Middle Ages to the Present; **154B.** Selected Topics.

## Slovak

### Graduate Course

**222. Structure of Slovak.** Lecture, three hours. Prerequisite: Slavic 202. Recommended: Slavic 222. Introduction to phonological and morphological structure of the Slovak language, especially as contrasted with Czech.

## Ukrainian

### Upper Division Courses

**101A-101B-101C. Elementary Ukrainian.** Recitation, five hours. Basic courses in the Ukrainian language.

**152. Ukrainian Literature.** Lecture, three hours. Lectures and readings in English. Survey of writers, literary trends, and issues in Ukrainian literature from the late 18th century to the present. Special attention to works of such major figures as I. Kotlyarevsky, T. Shevchenko, I. Franko, L. Ukrainka, and P. Tychna.

## Non-Slavic Languages of Eastern Europe

### Lithuanian

#### Upper Division Courses

**101A-101B-101C. Elementary Lithuanian.** Recitation, five hours. Basic courses in the Lithuanian language.

### Romanian

#### Lower Division Course

**99. Introduction to Romanian Civilization.** Lecture, three hours. Introductory survey of social and cultural institutions of the Romanian people and their historical background.

## Upper Division Courses

**101A-101B-101C. Elementary Romanian.** Recitation, five hours. Basic courses in the Romanian language.

**152. Survey of Romanian Literature.** Lecture, three hours. Lectures and readings in English. Survey of Romanian literature from the Middle Ages to the present.

## Graduate Course

**201. Romanian as a Romance Language.** Lecture, three hours. Survey of structure and development of the Romanian language, with special emphasis on relationship of Romanian to other members of the Romance group.

## Related Courses in Other Departments

**Economics 182; Ethnomusicology and Systematic Musicology 91C, 128, 130; Geography 184; History 131A-131D; Linguistics 20, 103, 110, 120A, 120B, M150, as well as several of the graduate courses in linguistics; Political Science 128A-128B, 156, 157.**

## Social Sciences

A265 Murphy Hall, (310) 206-7575

## Lower Division Courses

There is no major in social sciences; however, the following courses are offered for interested students.

**20. Racial Minorities in the U.S.** Lecture, three hours; discussion, one hour. Multidisciplinary examination of history and culture of Afro-Americans, Asian Americans, Chicanos, and Native Americans in the U.S. Topics include origins and maintenance of inequality, ethnic images in literature and art, psychosocial dimensions of racism, social movements, and minorities in California.

**30. Law and Society (3 units).** Introduction to nature of legal institutions, processes, and norms.

Mr. Abel (W)

**40. Introductory Statistics.** In a series of case studies from science and decision making, use of probability and statistics to quantify uncertainty and figure out how to make sensible choices in the face of it. Topics include how to design experiments and conduct surveys to reduce uncertainty, how to analyze data, and how to validly assess causality. Discussion-style learning blended with interactive sessions on personal computers, making numerical and graphical summaries that both measure uncertainty and help figure out what to do about it. P/NP or letter grading.

Mr. Draper

**88. Introduction to Social Sciences.** Seminar, three hours. Introduction to methods, concepts, and practices of social scientific scholarship. Organized around broad, interdisciplinary themes in anthropology, economics, geography, history, psychology, political science, and sociology. Emphasis on social sciences disciplines as a whole. P/NP or letter grading.

Ms. Appleby, Mr. Roy (F,W)

## Social Sciences Collegium

A265 Murphy Hall, (310) 825-3697

### Professors

Jeffrey C. Alexander, Ph.D. (*Sociology*), *Director*  
 Joyce Appleby, Ph.D. (*History*)  
 Richard E. Ashcraft, Ph.D. (*Political Science*)  
 Ivan T. Berend, Ph.D. (*History*)  
 Edward G. Berenson, Ph.D. (*History; Distinguished Teaching Award*)  
 Richard Berk, Ph.D. (*Sociology*)  
 Francesca Bray, Ph.D. (*Anthropology*)  
 Ellen DuBois, Ph.D. (*History*)  
 Bryan C. Ellickson, Ph.D. (*Economics; Distinguished Teaching Award*)  
 Benjamin A. Elman, Ph.D. (*History*)  
 J. Nicholas Entrikin, Ph.D. (*Geography*)  
 Peter B. Hammond, Ph.D. (*Anthropology*)  
 Jack Katz, Ph.D. (*Sociology*)  
 William Mason, Ph.D. (*Sociology*)  
 Ronald J. Mellor, Ph.D. (*History*)  
 Eric H. Monkonen, Ph.D. (*History*)  
 Gary B. Nash, Ph.D. (*History; Distinguished Teaching Award*)  
 Karen J. Orren, Ph.D. (*Political Science*)  
 David O. Sears, Ph.D. (*Political Science, Psychology*)  
 Edward W. Soja, Ph.D. (*Urban Planning*)  
 Steven L. Spiegel, Ph.D. (*Political Science*)  
 Ivan Szelenyi, Ph.D. (*Sociology*)  
 Donald J. Treiman, Ph.D. (*Sociology*)  
 Roger Waldinger, Ph.D. (*Sociology*)  
 Scott L. Waugh, Ph.D. (*History; Distinguished Teaching Award*)

### Associate Professors

Peter Baldwin, Ph.D. (*History*)  
 Kathryn Bernhardt, Ph.D. (*History*)  
 Mario Biagioli, Ph.D. (*History*)  
 Ruth Bloch, Ph.D. (*History*)  
 Rogers Brubaker, Ph.D. (*Sociology*)  
 Franklin D. Gilliam, Jr., Ph.D. (*Political Science*)  
 J. Eugene Grigsby III, Ph.D. (*Urban Planning*)  
 Ruth H. Milkman, Ph.D. (*Sociology*)  
 Kathryn Norberg, Ph.D. (*History*)  
 Raymond A. Rocco, Ph.D. (*Political Science*)  
 William G. Roy, Ph.D. (*Sociology; Distinguished Teaching Award*)  
 Miriam Silverberg, Ph.D. (*History*)  
 Albion M. Urdank, Ph.D. (*History*)

### Assistant Professors

Judith A. Carney, Ph.D. (*Geography*)  
 Douglas Hollan, Ph.D. (*Anthropology*)  
 Peter E. Kollock, Ph.D. (*Sociology; Luckman Distinguished Teaching Award*)  
 Muriel McClendon, Ph.D. (*History*)  
 José Moya, Ph.D. (*History*)  
 David N. Myers, Ph.D. (*History*)  
 Simon Potter, Ph.D. (*Economics*)  
 Edward E. Telles, Ph.D. (*Sociology*)

The Social Sciences Collegium is a consortium of social sciences faculty dedicated to the enrichment of lower division education. These top faculty members have come together to develop innovative courses which are (1) sensitive to your needs, providing you with a basic introduction to social scientific research and theories and (2) geared to your interests, helping you develop sophisticated, in-depth understanding of contemporary social problems and events.

The collegium offers three different kinds of opportunities:

*Social Sciences Collegium Seminars* are excellent opportunities to explore a social issue in an intimate classroom environment. With an enrollment capacity of 20, these seminars allow you to build your writing and speaking skills while learning about the events and forces that shape headlines and lives. The seminars are taught by advanced graduate students with outstanding academic and teaching records. The graduate student instructors, selected by a competitive awards process, bring enthusiasm and fresh perspectives to the seminars.

*Social Sciences Collegium Lecture Courses* are reduced-enrollment courses taught by cutting-edge scholars. Faculty members have developed a variety of new lecture courses specifically for first- and second-year students, integrating interdisciplinary and multimedia approaches to contemporary and often controversial issues. These courses offer excellent TA-to-student ratios and opportunities to do original research on relevant topics.

*Social Sciences Collegium Omnibus Course — Los Angeles in Transition* is a unique and dynamic learning experience focused on one of the most fascinating urban environments: our own backyard. The course is team taught in Winter Quarter by 10 distinguished faculty members from the social sciences and professional schools who have research expertise in some aspect of Los Angeles, such as the city's history, ecology, government, or educational system. Each professor holds a weekly seminar meeting with 20 students, and all 200 students and 10 faculty members gather for a weekly lecture and debate session. The course relies on contemporary writings, media resources, and field trips to integrate these diverse perspectives.

For further information, contact Christopher Campbell at the program address.

## Lower Division Courses

**21. Arabs and Israelis: Causes of Conflict, Prospects for Peace.** Lecture, three hours; discussion, one hour. Prerequisite: freshman/sophomore standing. The Arab-Israeli conflict is extraordinarily complex. Provides students with basis for understanding this conflict in its various dimensions and to investigate whether a resolution is possible or likely. P/NP or letter grading.

Mr. Spiegel (F)

**31. History in the Making: East-Central Europe in Transition, 1989-1993.** Lecture, three hours; discussion, one hour. Prerequisite: freshman/sophomore standing. State-socialism and Soviet domination collapsed in East-Central Europe in 1989. Analysis of causes and consequences of the collapse, as well as the road of transformation in seven (now 12) countries of the region; exploration of scenarios for the future. P/NP or letter grading.

Mr. Berend (F)

**41. Ethnicity and Social Class in America: Computer-Based Approach.** Lecture, two and one-half hours; discussion, two hours; computer laboratory, one hour. Prerequisite: freshman/sophomore standing. Social structure and social process in the U.S. Ethnicity, class, and changes in these dimensions over time. Active study of quantitative data. P/NP or letter grading.

Mr. Mason (F)

# Sociology

264 Haines Hall, (310) 825-1313

## Professors

Jeffrey Alexander, Ph.D.  
 Walter Allen, Ph.D.  
 Rodolfo Alvarez, Ph.D.  
 Ronald Andersen, Ph.D.  
 Perry Anderson, B.A.  
 Kenneth D. Bailey, Ph.D.  
 Richard Berk, Ph.D.  
 Lawrence Bobo, Ph.D.  
 Phillip Bonacich, Ph.D.  
 Lucie C. Cheng, Ph.D.  
 Robert M. Emerson, Ph.D.  
 Michael S. Goldstein, Ph.D.  
 Oscar Grusky, Ph.D.  
 John C. Heritage, Ph.D.  
 Jack Katz, Ph.D.  
 Harry H.L. Kitano, Ph.D. (*UCLA Alumni and Friends of Japanese Ancestry Professor of Japanese American Studies*)  
 Ivan H. Light, Ph.D.  
 Michael Mann, Ph.D.  
 William Mason, Ph.D.  
 Melvin Oliver, Ph.D.  
 Valerie K. Oppenheimer, Ph.D.  
 Melvin Pollner, Ph.D.  
 Jerome Rabow, Ph.D.  
 Emanuel A. Schegloff, Ph.D.  
 Ivan Szelenyi, Ph.D., *Chair*  
 Warren D. TenHouten, Ph.D.  
 Donald J. Treiman, Ph.D.  
 Roger Waldinger, Ph.D.  
 Maurice Zeitlin, Ph.D.  
 Lynne G. Zucker, Ph.D.

## Professors Emeriti

Burton R. Clark, Ph.D.  
 Harold Garfinkel, Ph.D.  
 C. Wayne Gordon, Ph.D.  
 John E. Horton, Ph.D.  
 Leo J. Kuper, Ph.D.  
 Gene N. Levine, Ph.D.  
 Georges Sabagh, Ph.D.  
 Melvin Seeman, Ph.D.  
 Edwin S. Shneidman, Ph.D.  
 Gerald H. Shure, Ph.D.  
 Samuel J. Surace, Ph.D.  
 Ralph H. Turner, Ph.D.

## Associate Professors

Rogers Brubaker, Ph.D.  
 Duane Champagne, Ph.D.  
 David Halle, Ph.D.  
 M. Nicolette Hart, Ph.D.  
 David E. López, Ph.D.  
 David D. McFarland, Ph.D.  
 Ruth H. Milkman, Ph.D.  
 Vilma Ortiz, Ph.D.  
 Jeffrey Prager, Ph.D. (*Distinguished Teaching Award*)  
 William G. Roy, Ph.D. (*Distinguished Teaching Award*)

## Assistant Professors

Steven E. Clayman, Ph.D.  
 Rebecca Emigh, M.A., *Acting*  
 Peter E. Kollock, Ph.D. (*Luckman Distinguished Teaching Award*)  
 Edward E. Telles, Ph.D.

## Adjunct Associate Professor

Barbara Ballis Lal, Ph.D.

## Scope and Objectives

Variety is the special characteristic both of the field of sociology and of the UCLA Department of Sociology, which was judged among the 10 best in the nation in a recent survey conducted by the Conference Board of the Associated Research Councils.

Sociology will have a particular appeal to those students whose interests are broad and unspecialized. At both undergraduate and graduate levels, students study history, politics, statistics and mathematics, race relations, demography, psychology, language, and many other topics. A sociology student becomes a member of an intellectual community in which all these interests are represented.

The primary purpose of the major in sociology is to enhance the student's capacity for critical analysis and understanding of social phenomena. It is intended, at the same time, to serve as preparation for careers in high school or junior college teaching, social work, architecture and urban planning, law, public health, and government service, among others. It also provides training for advanced graduate work in sociology and social psychology.

The Ph.D. in Sociology usually leads to a career in research and/or teaching. Although most sociologists are employed by universities, there are increasing career opportunities in government and other nonuniversity research centers.

## Bachelor of Arts Degree

### Preparation for the Major

*Required:* One course from Sociology 1, 2, 3, 4, M5, 31; one course from Mathematics 2, 3A, 31A; Sociology 18 (or Statistics 50, Psychology 41, or Economics 40).

*All courses required for the major in sociology, including lower division and allied field courses, must be taken for a letter grade. A 2.0 grade-point average is required for the preparation and for the major.*

### The Major

*Required:* Ten upper division sociology courses (40 units), including Sociology 101, 102, and one course from 104, 105, 113. These courses, devoted to the systematic exploration of sociological methods and theories, should be completed as early as possible and before taking other upper division courses. You must also take seven additional upper division sociology courses.

To complete the major, four upper division allied field courses (16 units) in other departments are required (the allied fields are anthropology, communication studies, economics, geography, history, political science, and psychology), as is one course from English 100W, 129, 131A through 131J (may be taken on a P/NP grading basis).

Only eight units of Sociology 199 are allowed. At least six of the sociology courses must be taken while in residence in the College of Letters and Science at UCLA.

Courses 104, 210A, and 210B are recommended for students who intend to pursue graduate work in sociology.

## Specialization in Computing

Majors in sociology may select a specialization in computing by (1) satisfying all the requirements for a bachelor's degree in the major, (2) completing Program in Computing 10A, 10B, 10C, and (3) completing Sociology 112, 113. You graduate with a bachelor's degree in sociology and a specialization in computing.

## Honors Program

The honors program in sociology provides opportunity for outstanding students to undertake an independent year-long research project under the guidance of a faculty member.

As preparation for the honors major, you must complete an honors section of Sociology 1 and 18, and Mathematics 2, 3A, or 31A.

Prior to taking other upper division sociology courses, you must complete an honors section of Sociology 101 and 102 (Honors Collegium 61 may be substituted for course 102) and one methods course selected from Sociology 106, CM124A, 209A.

Also required are three undergraduate seminars from the Sociology 197 series; any two additional upper division sociology courses; courses 199HA-199HB-199HC (honors thesis seminars); four upper division allied field courses (16 units) in other departments (the allied fields are anthropology, communication studies, economics, geography, history, political science, and psychology); and one course from English 100W, 129, 131A through 131J (may be taken on a P/NP grading basis).

**Qualifications** — You must have a 3.5 overall grade-point average, have completed the sociology preparation requirements and, in most cases, have completed the required theory course. Applications are available in the Undergraduate Counselor's Office, 254A Haines Hall. You should apply in the last term of your junior year.

## M.A. and Ph.D. Degrees

The graduate program of the department takes as its primary aim the training of scholars who will conduct original research contributing to the advancement of sociological knowledge. For this reason, the department ordinarily accepts only students who are seeking the Ph.D. degree. A master's degree may be earned as part of the process of completing the requirements for the Ph.D.

## Admission

In addition to the minimum University requirements, the department requires (1) three letters of recommendation, preferably from professors of sociology who are familiar with your written work and research experiences, (2) transcripts from all colleges where you have studied, (3) a statement of purpose, outlining reasons for pursuing graduate work, interests within sociology, career objectives, and any personal experiences bearing on these, (4) copies of one or two term papers or research reports you have written, (5) an official statement of scores on the Graduate Record Examination (GRE), and (6) for applicants whose native language is not English, the Test of English as a Foreign Language (TOEFL).

Although background preparation in sociology is highly desirable, it is not mandatory for admission to the department.

In addition to relatively formal criteria (such as analytic proficiency and articulateness), the department pays particular attention to applicants who seem likely to contribute considerable intellectual, social, or cultural diversity to its student body. Women and minorities are therefore encouraged to apply. The deadline for receipt of applications is December 15. Application forms and more detailed information are available from the Graduate Affairs Assistant, Department of Sociology, 254C Haines Hall, UCLA, Los Angeles, CA 90024-1551.

## Major Fields or Subdisciplines

In the first two years you usually satisfy the course requirements for the M.A. degree and write a master's paper that is evaluated by the department in your sixth term of residence. During the first year of graduate study, and no later than the second week of instruction in your fourth term in residence, you are expected to form a two-person master's committee to help you prepare the master's paper.

In the term following acceptance of your master's paper, usually at the beginning of the third year, you must affiliate with one of the department's five area programs in order to pursue more specialized, advanced study and research toward the Ph.D. The area programs represent the special strengths of the department in research and graduate instruction:

(1) *Communities and Institutions* — Studies in community organization and local and institutional processes of deviance and social control, particularly as they are affected by race, ethnicity, gender, and class; social networks; ethnic conflict and cooperation; organization of immigrant and minority communities; gender relations; social organization of work and occupations; institutional processes in criminal justice and medical settings.

(2) *Ethnomethodological, Phenomenological, and Observational Sociologies* — Studies of work especially in the sciences and professions, sociology of knowledge, sociology of

law, deviance, social control, conversational and other forms of ordinary interaction, and historical studies of everyday interaction and consciousness.

(3) *Macrosociology* — Political sociology, economy and society, historical and comparative sociology, macrosociological theory, and comparative stratification.

(4) *Quantitative Sociology* — Survey research methods, methods of applied and evaluation research, formal and social demography, social stratification, advanced social statistics, and mathematical sociology.

(5) *Social Psychology* — Attitudes and social structure, collective behavior, socialization, social interaction and small group behavior, and organizational social psychology.

## Foreign Language Requirement

There is no foreign language requirement for either the master's degree or the Ph.D. Students affiliated with the macrosociology area program are required to demonstrate reading knowledge of sociological texts in any foreign language.

## Course Requirements

In addition to the departmental requirements, area programs and some subareas have their own course requirements for affiliated students.

**Before the Master's Paper Review** — Nine courses (36 units) are required.

(1) Sociology 202A-202B (must be taken in the first year).

(2) A two-term graduate-level methodology sequence from Sociology 211A through 216B, 217B-217C, 218A-218B, C244A-C244B.

In choosing a methodology sequence, you should note that some of the Ph.D. area programs and subprograms require particular methodology sequences.

(3) Five 200-level courses in sociology, excluding Sociology 202A-202B, 211A through 216B, 217B-217C, 218A-218B, C244A-C244B, and the 289, 290, 292, 293, and 295 series.

Because four of the five area programs require successful completion of Sociology 209A-209B or 210A-210B, you would ordinarily take these courses in your first two years and are strongly urged to do so in your first year.

Students intending to affiliate with an area would do well to satisfy some of its requirements in the first two years. Contact the department for information about entering the area programs.

**After the Master's Paper Review** — Two courses (eight units) are required. An additional methodology sequence (from courses 211A through 216B, 217B-217C, 218A-218B) must be completed before the awarding of the Ph.D. degree.

Course requirements for the five area programs are listed below. Contact the graduate affairs assistant or area directors for more specific details.

(1) *Communities and Institutions* — Sociology 290A-290B-290C and a second methods sequence selected from courses 211A-211B, 212A-212B, 213A-213B, 215A-215B, 216A-216B, or 217B-217C; two courses from 229A, 229B, 234, 235, 241, 261; two courses from 230, M231, 234, 236, 238A-238B, M249A, M249B, 254, 259, M262, 263, 265, M275, 276, 282, 291.

(2) *Ethnomethodological, Phenomenological and Observational Sociologies* — Sociology 222; at least two courses from 217A, 223, 229A, 229B, 243, 251, 252, 258, 264, 266, 267, 271, 284; two terms of one methods sequence and at least one term of a second, selected from courses 214A-214B, 217B-217C, 218A-218B, or C244A-C244B; courses 293A-293B-293C.

(3) *Macrosociology* — Sociology 211A-211B, 228A-228B, 294A-294B-294C, and three additional graduate courses covering theoretical, substantive, or methodological topics.

(4) *Quantitative Sociology* — Sociology 295A-295B-295C.

Advanced Social Statistics Specialty — Sociology 216A-216B, 219A-219B, and electives selected from a list of eight recommended courses.

Applied Sociology and Evaluation Research Specialty — Sociology 216A-216B, 219A-219B, 279, 280, and electives selected from a list of 14 recommended courses.

Demography Specialty — Sociology 213A-213B, 226A-226B, courses in calculus and matrices, and two electives selected from a list of 11 recommended courses.

Mathematical Sociology Specialty — Sociology 281, 596, preparation in calculus, matrices, and differential equations, two or more substantive sociology courses relevant to the areas in which mathematical modeling will be carried out, and electives selected from a list of seven recommended courses.

Quantitative Social Stratification Specialty — Sociology 216A-216B, 239A-239B, 263, and two electives selected from a list of recommended courses.

(5) *Social Psychology* — Completion of an undergraduate program equivalent to two of the department's basic undergraduate social psychology courses and at least two courses in psychology, selected from the fields of learning, language and communication, personality, social psychology, and abnormal psychology; Sociology 224A-224B, 289A-289B-289C; a second methods sequence in addition to the one required for the M.A., selected from courses 215A-215B, 216A-216B, or 217B-217C.

Courses in the 500 series (595, 596, 597, 599) are normally taken in preparation for the master's paper review, the field examinations, and

for dissertation research. They may not be applied toward the course requirements for the degree.

### Master's Paper Review

During your sixth term in residence you must submit an acceptable master's paper for approval by the general faculty. The paper must demonstrate a general competence in sociological theory, methodology, and selected substantive areas and in intellectual attainment.

The paper should demonstrate that you (1) have an accurate grasp of the intellectual traditions of sociology, (2) can bring evidence to bear on theoretical problems, (3) can describe how some aspect of the social order works, and (4) can adequately handle research and methodological issues. The main concern is with your capacity to do doctoral-level work.

After review of the paper, any of the following options may be recommended:

- (1) The paper is passed. You are granted the M.A. and permitted to proceed to the Ph.D.
- (2) The paper is passed conditionally. You are granted the M.A. and permitted to proceed to the Ph.D. after completion of specified revisions of the paper.
- (3) You are granted a terminal M.A.
- (4) The paper is not acceptable (you may resubmit at a later time or may be asked to withdraw).

If you enter UCLA with an M.A. degree in Sociology from another institution, you normally come up for a master's paper review in your first term of residence at UCLA, and under no circumstances later than the third term of residence. In this review, the department determines whether you may proceed directly to preparation for the field examinations or whether additional work must be done, and if the methodology sequence requirement has been adequately satisfied. In addition to a paper, which can be an M.A. thesis written at another university, you should submit for the master's paper review a transcript from the university at which the M.A. degree was earned.

Contact the department for further details on master's paper review.

### Field and Qualifying Examinations

The department requires you to pass two field examinations before taking the University Oral Qualifying Examination for the Ph.D. The emphasis is on mastery and depth of understanding in two areas of specialized study. Field examinations are administered and evaluated under guidelines established by area programs. You may take both or just one of your field examinations in the area with which you are affiliated. Each area program also has procedures enabling unaffiliated students to take field examinations in that area. Details are available from area directors and from the graduate affairs assistant.

If your performance on the field examination is satisfactory, you may nominate a doctoral committee and take the University Oral Qualifying Examination. You must submit a two-page abstract of the dissertation proposal to the graduate affairs assistant for distribution to the entire departmental faculty within two weeks of the oral examination.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Final Oral Examination

The optional final oral examination for the Ph.D. degree is given by the doctoral committee no later than six months after the completion of the dissertation. A decision to waive the final examination is optional on the part of the Ph.D. committee.

### Lower Division Courses

**1. Introductory Sociology.** Survey of characteristics of social life, processes of social interaction, and tools of sociological investigation.

**2. Changing Society and Making History.** Lecture, three hours; discussion, one hour. Leading question is how do politics, economics, and culture interact in changing society and making history? Answers provided by introductory level of study of contending substantive theories and contrasting methods of inquiry contained both in classic and exemplary contemporary works. Mr. Champagne, Mr. Mann, Mr. Prager

**3. Sociology of Everyday Life.** Lecture, three hours; discussion, one hour. Examination of ways in which taken-for-granted aspects of everyday life and relationships are shaped by interactional, cultural, and historical processes. Cultivation of capacity to critically observe tacit practices through which everyday life is constructed. Mr. Emerson, Mr. Katz, Mr. Pollner

**4. Jobs and Careers: Sociological Approach.** Lecture, three hours; discussion, one hour. Application of social science knowledge to common vocational problems. Description and analysis of major trends in employment, job search and hiring, career mobility patterns, forecasting, and entrepreneurship. Analysis of current thrust to worker ownership. Mr. Light, Ms. Zucker

**M5. Social Organization of Black Communities.** (Formerly numbered 5.) (Same as Afro-American Studies M5.) Lecture, three hours; discussion, one hour. Analysis and interpretation of social organization of black communities, with focus on origins and development of black communities, competing theories and research findings, defining characteristics and contemporary issues. Mr. Allen, Mr. Oliver (Sp)

**18. Interpretation of Quantitative Data.** Prerequisites: course 1 (may be taken concurrently), Mathematics 2 or 3A. Satisfies statistics requirement for sociology major. Reading graphs and tables; statistical description using indices of central tendency, dispersion, and association; simple linear regression. Probability; binomial, normal, t, and chi-square distributions and hypothesis testing based on them. Examples from recent issues of *American Sociological Review* or other leading sociological journals.

**31. Dilemmas of Third World Development.** Lecture, three hours; discussion, one hour. Introduction to understanding dilemmas of Third World social development and prospects for progress in the future. Mr. López, Mr. Zeitlin

**88A-88Z. Lower Division Seminars.** Lecture, three hours. Limited to 15 freshmen and sophomores. Variable topics of current sociological interest. Consult *Schedule of Classes* or "Department Announcements" for topics and instructors.

### Upper Division Courses

**101. Development of Sociological Theory.** Comparative survey of basic concepts and theories in sociology from 1850 to 1920; codification of analytic schemes; critical analysis of trends in theory construction. Mr. López, Mr. Mann, Mr. Prager

**102. Contemporary Sociological Theory.** Prerequisite: course 101. Critical examination of significant theoretical formulations from 1920 to the present; analysis of relation between theoretical development and current research emphasis. Mr. Champagne, Mr. Mann, Mr. Szelenyi

**103. Marxist Sociology.** Fundamentals of Marxist theory and method and their historical development. Attention to continuing debates within Marxism and to differences between Marxism and other schools of sociological thought. May not be applied toward theory requirement for the major.

**104. Introduction to Sociological Research Methods.** Systematic treatment and semiquantitative skills of use in sociological research (e.g., classification, questionnaire and schedule design, content analysis, critical analysis of studies, conceptual analysis of case materials). Fieldwork may be required. Mr. Champ, Mr. TenHouten

**105. Research Methods in Policy Analysis and Evaluation.** Prerequisite: course M144 or consent of instructor. Recommended: course 104. Approaches for identifying and analyzing social problems and for assessment of policies and interventions for their control and management. Ms. Zucker

**106. Field Research Methods (6 units).** Lecture, two hours; discussion, two hours; fieldwork, 12 hours. Prerequisites: upper division standing, consent of instructor. Fieldwork and extensive field notes required. Theory and practice of field research, with particular emphasis on interrelations between fieldwork role and substantive findings. Mr. Emerson

**M107. Urban Poverty and Public Policy in the U.S. (Field Component).** (Same as Geography M147.) Prerequisite: course M144. Corequisite: one course from Geography 150 or 159A through 159E. Supplements and enriches students' academic understanding of urban poverty and the underclass by personal exposure and direct observation in a field setting. Students required to develop a plan of service in a local social service agency and observe policy formulation and implementation. P/NP or letter grading. Mr. Johnson, Mr. Oliver, Ms. Ortiz

**109A-109B. Data Analysis for Social Scientists.** Lecture, three hours; laboratory, one hour. Introduction to applied statistics and data collection for undergraduate students, especially sociology honors students. P/NP or letter grading. Mr. Berk, Ms. Emigh

**112. Introduction to Mathematical Sociology.** Prerequisites: course 18, Mathematics 2, 3A (course whose content includes introductions to probability theory, matrix algebra, and differential and integral calculus), or equivalent. Mathematical treatment of several sociological phenomena, such as occupational mobility, population growth, organizational structure, and friendship patterns, each covered in some detail, including initial development and subsequent evaluation and modification (emphasizing both deductive and computational aspects of mathematics). Mr. Bonacich, Mr. McFarland

**113. Statistical and Computer Methods for Social Research.** Lecture, three hours; laboratory, one hour. Prerequisite: course 18. Continuation of course 18, covering more advanced statistical techniques such as multiple regression, analysis of variance, or factor analysis. Content varies. Students learn how to use the computer and write papers analyzing prepared data sets. Mr. Bonacich, Mr. TenHouten

**116. Social Demography.** Studies of past, present, and future trends in population growth. Sociological theories of causes and consequences of population growth and redistribution. Emphasis on correlates of fertility, mortality, and migration. Mr. Bailey, Ms. Oppenheimer, Mr. Telles

**117. Sociology of Family Demographic and Economic Behavior.** Examination of demographic behavior associated with social organization of the family and its relationship to society's economic system. American and European historical studies of family socioeconomic and demographic characteristics and behavior in first half of course; U.S. experience since the 1930s in second half. Ms. Oppenheimer

**CM124A-CM124B. Conversational Structures I, II.** (Formerly numbered C124A-C124B.) (Same as Communication Studies M144A-M144B.) Lecture, three hours; discussion, one hour. May be concurrently scheduled with courses C244A-C244B. P/NP or letter grading. **CM124A.** Introduction to some structures which are employed in organization of conversational interaction, such as turn-taking organization, organization of repair, and some basic sequence structures with limited expansions. **CM124B.** Prerequisite: course CM124A. Consideration of some more expanded sequence structures, story structures, topical sequences, and overall structural organization of single conversations. Mr. Schegloff

**126. Study of Norms.** Properties of norms, of normatively governed conduct, of lay and professional methods for describing, producing, using, and validating norms in contrasting settings of socially organized activities; relevance of these properties for programmatic problems of analytic sociology. Fieldwork required. Mr. Heritage, Mr. Pollner

**127. Mind and Society.** Lecture, two and one-half hours; discussion, one hour. Prerequisite: course 1 or equivalent. Study of social production of modes of thought and forms of knowledge. Study of ways in which bodies of knowledge and cognitive styles are produced, used, and transformed in everyday, organizational, and extraordinary contexts. P/NP or letter grading. Mr. Pollner, Mr. TenHouten

**128. Sociology of Emotions.** Lecture, three hours; discussion, one hour. Prerequisites: course 1 and junior standing, or consent of instructor. Sociological theories and explanations of social conditions shaping and producing emotional experiences; effects of individual expression of emotions on social conditions; relations between thought, sensations, and the emotions; the self and emotions; social construction of emotions. Mr. Katz, Mr. Rabow, Mr. TenHouten

**132. Social Psychology: Sociological Approaches.** Survey of contribution of sociologists to theory and research in social psychology, including theories of social control; conformity and deviation; reference groups; and interaction process. Ms. Ortiz, Mr. Rabow

**133. Collective Behavior.** Prerequisites: courses 1, 18, or equivalent, upper division standing. Characteristics of crowds, mobs, publics, social movements, and revolutions; their relation to social unrest and their role in developing and changing social organization. Mr. Kollock

**134. Culture and Personality.** Prerequisites: courses 1, 18, or equivalent, upper division standing. Theories of relation of variations in personality to culture and group life, in primitive and modern societies, and influence of social role on behavior. Mr. Allen, Mr. Heritage

**135. Group Processes.** Systematic study of formation, structure, and functioning of groups; analysis of group processes and group products from a variety of theoretical viewpoints; implications of various research techniques. Mr. Bonacich, Ms. Zucker

**136. Process and Socialization in the Family.** Prerequisites: courses 1, 18, or equivalent, upper division standing. Examination of processes of interaction, decision making, role differentiation, conflict, integration, and socialization within the family and their interrelations with society. Mr. Allen

**137. Psychoanalytic Sociology.** Prerequisites: courses 1, 18. Recommended: one course in theory (course 101 or 102) and in social psychology. Fieldwork may be required. Designed to review models of integration between psychoanalysis and sociology. Application of this analytical perspective to selected substantive areas and social processes, including but not limited to group development, delinquency, deviance, socialization, identity and self formation, role taking and role making. Mr. Rabow

**M138. Death and Suicide: Psychological and Sociological Aspects.** (Same as Psychology M163.) Lecture, three hours. Prerequisite: junior standing. Definition and taxonomy of death; new permissiveness and taboos related to death; romanticization of death; role of the individual in his own demise; modes of death; development of ideas of death through life span; ways in which ideas of death influence conduct of lives; impact of dying on social structure surrounding the individual; preventive, interventive, and postventive practices in relation to death and suicide; partial death; megadeath; lethality; psychological autopsy; death of institutions and cultures. P/NP grading recommended (letter grading required if course to be applied toward psychology or sociology major). Mr. Shneidman

**143. Human Health and Society.** Lecture, three hours; discussion, one hour. Prerequisite: course 1. Exploration of long-run historical trends in relationship between human health and social organization, drawing on historical, anthropological, demographic, and sociological concepts, theories, and data. Ms. Hart

**M144. Urban Poverty and Public Policy in the U.S.** (Formerly numbered 144.) (Same as Geography M145.) Historical overview of urban poverty and social welfare programs; ongoing debates about causes and consequences of poverty. Mr. Johnson, Ms. Ortiz (F)

**145. Sociology of Deviant Behavior.** Examination of leading sociological approaches to study of deviation and general survey of major types of deviation in American society.

**146. Sociology of Disputes and Troubles.** (Not the same as course 146 prior to Spring Quarter 1992.) Lecture, three hours; discussion, one hour. Theoretical implications of everyday disputes and troubles in contemporary society; origins, progression, and outcomes of informal disputes; disputing in intimate family, community, public place, and workplace settings; forms dynamics and consequences of third-part intervention. Mr. Emerson, Mr. Katz

**147A. Sociology of Crime.** (Formerly numbered 146.) Lecture, three hours; discussion, one hour. Sociological theories of social origins, organization, and meanings of crime and criminal behaviors. Mr. Katz, Mr. Rabow

**147B. Sociology of Criminal Justice.** (Formerly numbered 147.) Lecture, three hours; discussion, one hour. Examination of structures and routine decision-making processes of key criminal justice institutions, including police, courts, probation and parole, jails and prisons. Mr. Emerson

**148. Sociology of Mental Illness.** Analysis of major sociological and social psychological models of madness. Study of social processes involved in production, recognition, labeling, and treatment of "mental illness." Mr. Emerson, Mr. Pollner

**149. Social Organization of Psychiatric Treatment.** Strongly recommended (but not prerequisite): course 148. Review of current research and theory on psychiatric treatment processes and treatment organizations, including mental hospitals and community mental health organizations. Mr. Emerson

**153. Chinese Immigration.** Lecture, two hours; discussion, one hour. Survey of sociological studies of Chinese immigration, with focus on international context, organization, and institutions of Chinese America and its interactions with the social environment. Ms. Cheng (F)

**155. Chicanos in American Society.** Lecture, three hours; discussion, one hour. Prerequisite: course 1 and junior standing, or consent of instructor. Exploration of history and social conditions of Chicanos in American society, with particular emphasis on their location in the larger social structure and on comparisons with other Latinos and minority groups. Topics include migration, family, education, and work issues. Mr. Alvarez, Ms. Ortiz, Mr. Telles

**156. Ethnic and Status Groups.** Characteristics of "visible" ethnic groups (e.g., Japanese, Mexican, and black); their organization, acculturation, and differentiation. Development, operation, and effects of selective immigration and population mobility. Status of chief minorities in continental U.S., with comparative materials from Jamaica, Hawaii, and other areas. Mr. Alvarez, Mr. Kitano, Mr. Prager

**157. Social Stratification.** Analysis of American social structure in terms of evaluational differentiation. Topics include criteria for differentiation, bases for evaluation, types of stratification, composition of strata and status systems, mobility, consequences of stratification, and problems of methodology. Mr. McFarland

**158. Urban Sociology.** Lecture, three hours. Description and analysis of urbanization and urbanism in the U.S. and the world. Mr. Halle, Mr. Light, Mr. Telles

**159. Comparative Studies of Jewish Communities in the U.S. and Abroad.** Lecture, three hours; discussion, one hour. History, distribution, structure, and functioning of major Jewish communities, with particular emphasis on North America and Israel. Interrelationships and sources of conflict between Jews and Gentiles in Western countries. More generally, economic and social integration of Diaspora Jewish communities. Fieldwork may be required. P/NP or letter grading.

**160. Intergroup Conflict and Prejudice.** Study of causes and consequences of group conflict, with emphasis on majority/minority relations, prejudice, and discrimination. Special attention to alternative sociological and psychological theories of prejudice; effects of minority status on the individual; and possibilities for attitude and behavior change. Mr. Bobo, Mr. Oliver

**161. Comparative American Indian Societies.** Lecture, three hours. Prerequisite: course 1. Comparative and historical study of political, economic, and cultural change in indigenous North American societies. Several theories of social change, applied to selected case studies. Mr. Champagne

**M162. Sex Roles and Society.** (Same as Women's Studies M162.) Lecture, three hours; discussion, one hour. Prerequisite: course 1 or Women's Studies 10 or consent of instructor. Consideration of sociological literature pertaining to development and functions of sex roles in society from a critical perspective. Topics include socialization and gender norms, contemporary sex role strain, and challenge to traditional notions of sex roles posed by feminist critique. Ms. Hart

**M163. Gender and Work.** (Formerly numbered 163.) (Same as Women's Studies M164.) Lecture, three hours. Prerequisite: course 1 or Women's Studies 10 or consent of instructor. Exploration of relationship of gender to work, concentrating on the U.S. experience but also including some comparative material. Particular emphasis on analysis of causes and consequences of job segregation by gender and of wage inequality. Ms. Milkman

**168. Organizations and Society.** Sociological analysis of organizations and their social environment. Introduction to basic theories, concepts, methods, and research on behavior of organizations in society. Mr. Alvarez, Mr. Grusky

**169. Law and Society.** Specific topics may include law in preindustrial and industrialized societies, legalization of contemporary social relations, participants' experiences of legal processes, lay perceptions of justice, social movements toward equal justice, roles of lawyers and judges, social impact of court decisions. Mr. Abel, Mr. Emerson, Mr. Katz

**170. Medical Sociology.** Prerequisite: course 1 or consent of instructor. Provides majors in sociology and other social sciences, as well as students preparing for health sciences careers, with understanding of health-seeking behavior and interpersonal and organizational relations that are involved in receipt and delivery of health services. Mr. Goldstein, Ms. Hart

**171. Occupations and Professions.** Description and analysis of representative occupations and professions, with emphasis on the contemporary U.S.

Ms. Milkman, Mr. Waldinger

**172. Entrepreneurship.** Lecture, three hours; discussion, one hour. Prerequisite: course 1. Description and analysis of entrepreneurship, with special reference to historical origins, ideology, international comparisons, women and ethnic minority participation, legal and illegal forms, public and private auspices.

Mr. Light

**173. Economy and Society.** Sociology of economic life, with emphasis on principal economic institutions of the U.S.

Mr. Light

**174. Sociology of the Family.** Theory and research dealing with the modern family, its structure, and functions, including historical changes, variant family patterns, family as an institution, and influence of contemporary society on the family.

Ms. Milkman

**M175. Sociology of Education.** (Same as Education M108.) Prerequisite: course 1. Study of social processes and interaction patterns in educational organizations; relationship of such organizations to aspects of society, social class, and power; social relations within school, college, and university; formal and informal groups, subcultures in educational systems; roles of teachers, students, and administrators. Fieldwork may be required.

Mr. Rabow, Ms. Wells

**M176. Sociology of Mass Communication.** (Formerly numbered 176.) (Same as Communication Studies M147.) Prerequisite: course 1. Studies in relationship between mass communication and social organization. Topics include history and organization of major media institutions, social forces that shape production of mass media news and entertainment, selected studies in media content, and effects of media on society.

Mr. Clayman

**182. Political Sociology.** Contributions of sociology to study of politics, including analysis of political aspects of social systems, social context of action, and social bases of power.

Mr. Prager, Mr. Roy, Mr. Zeitlin

**183. Comparative and Historical Sociology.** Prerequisite: course 1. Survey of central themes of comparative and historical studies in sociology. Various aspects of development of modern society, including development of nation-state, emergence of capitalism, industrialization, and population growth. Variation in contemporary society, viewed from a variety of theoretical perspectives.

Mr. Champagne, Mr. Mann, Mr. Roy

**184. Social Change.** Study of patterns of social change, resistance to change, and change-producing agencies and processes.

Mr. Alexander

**185. American Society.** Analysis of major institutions in the U.S. in historical and international perspective, with emphasis on topics such as industrialization, work, the state, politics, community, the family, religion, and American culture. Theories of social change, conflict, and order applied to the case of the U.S.

Mr. Roy, Mr. Zeitlin

**186. Latin American Societies.** Descriptive survey of major Latin American societies, emphasizing their historical backgrounds and their emergent characteristics, with special attention to relations between rural and urban life.

Mr. López, Mr. Zeitlin

**187. Population and Society in the Middle East.** Prerequisites: upper division standing, consent of instructor. Survey of Middle Eastern societies; their historic and environmental bases; contemporary demographic and cultural situation.

**188. Comparative Social Institutions of East Asia.** Analysis of selected social institutions of China, Japan, and Korea. Emphasis on continuity and change in East Asian societies.

Ms. Cheng

**189. Japanese Society.** Lecture, two and one-half hours; discussion, two hours. Prerequisite: course 1 or consent of instructor. Analysis of social-structural characteristics and functioning of contemporary Japanese society, with focus on (1) forms of social interaction and social structure, (2) work, family, and the life course, and (3) education and opportunity. Emphasis on structural perspectives, more than cultural perspectives.

**190. Capitalism, Socialism, and Alternative Social Systems.** Lecture, three hours. Prerequisite: junior or senior standing. Theories of capitalism and socialism, history of social experiments with socialism and other noncapitalist systems, and assessment of the record of these experiments. P/NP or letter grading.

Mr. Szelenyi

**195A-195Z. Special Topics in Sociology.** Prerequisite: upper division standing (some sections may require prior coursework or consent of instructor). Study of selected current topics of sociological interest. Consult *Schedule of Classes* for topics and instructors. May be repeated for credit and may be applied as elective units toward sociology major.

**M196A-M196B. Contemporary Issues in Urban Poverty Research.** (Formerly numbered M197A-M197B.) (Same as Geography M146A-M146B.) Prerequisite: Geography 150. Two-term research seminar designed to engage students in ongoing faculty research projects focusing on models of urban poverty and underclass behaviors.

Mr. Johnson, Mr. Oliver, Ms. Ortiz

**197. Undergraduate Seminar.** Prerequisites: upper division standing, major in sociology, consent of instructor.

**199. Special Studies (2 to 8 units).** Prerequisites: senior standing, 3.0 GPA in major, courses 1 and 18 or equivalent, consent of instructor and department chair. Course of independent studies designed for graduate or senior undergraduate students who (1) desire a more advanced or specialized treatment of an area covered in regular course list and who present that course as a prerequisite or (2) desire work in an area of sociological analysis currently not covered by an upper division course. Only eight units are allowed. See undergraduate counselor for course contact.

**199HA-199HB-199HC. Special Studies for Honors.** Prerequisite: honors program standing:

**199HA.** Design of research project to serve as student's honors thesis. Research proposal, detailed bibliography, and regular meetings with sponsoring faculty member required.

**199HB.** Continuation of work initiated in course 199HA. Series of progress reports are prepared in consultation with instructor.

**199HC.** Completion of written report or honors thesis.

**199I. Independent Studies for Internships (2 to 4 units).** Prerequisite: consent of instructor and department. Independent studies course to be supervised jointly by Field Studies Office and faculty adviser. Further supervision to be provided by business for which student is doing internship. May not be applied toward major requirements. Normally only four units of internship are allowed. P/NP grading.

## Graduate Courses

**202A-202B. Theory and Research in Sociology: Exemplary Studies, Classical and Contemporary.** Lecture, two hours; discussion, two hours. Prerequisite: graduate standing. Required of first-year sociology graduate students. Introduction to study of the discipline's formative and exemplary works to learn about theory and research by reading work done by other people. Designed to help students link their research to the great traditions of sociological enterprise. In Progress grading.

**203A. Social Survey Practicum.** Lecture, one hour; discussion, one hour; laboratory, two hours. Prerequisite: graduate standing or consent of instructor. Training through practice in basic techniques of survey research.

Mr. Oliver, Ms. Zucker

**203B. Social Survey Research Seminar.** Lecture, one hour; discussion, one hour; laboratory, two hours. Prerequisite: graduate standing or consent of instructor. Development of individual survey research projects under faculty supervision.

Mr. Oliver, Ms. Zucker

**209A-209B. Data Analysis for Social Scientists.** Lecture, three hours; laboratory, one hour. Introduction to applied statistics and data collection for graduate students in social sciences. In Progress grading.

Mr. Berk

**209C. Mathematics for Social Statistics.** Lecture, three hours; computer exercises. Prerequisites: graduate standing, consent of instructor. Discussion of elementary mathematical techniques needed for more advanced statistics courses in various social sciences, psychology, and education. Calculus of sets, sets of numbers, sequences of numbers, notion of a function, polynomials, differentiation, elementary matrices, and vectors.

Mr. Berk, Mr. de Leeuw

**210A-210B. Intermediate Statistical Methods I, II.** Lecture, three hours; discussion, two hours. Prerequisite: course 18 or equivalent. Required for M.A. degree by four area programs. Intermediate statistical methods using computers: probability theory, sampling distributions, hypothesis testing, interval estimation, multiple regression and correlation, experimental design, analysis of variance and covariance, contingency tables, sampling theory. In Progress grading.

Mr. Bonacich, Mr. McFarland, Mr. TenHouten

**211A-211B. Comparative and Historical Methods: 211A. Strategies of Research and Conceptualization.** Prerequisite: consent of instructor. Topics include relationship of theory and fact to social sciences, logic of comparative and historical analysis, and substantive paradigms of comparative and historical analysis. Reading involves methodological examination of basic works in representative problem areas. In Progress grading (credit to be given only on completion of course 211B).

**211B. Research Techniques.** Prerequisite: course 211A. Topics include problem of evidence, quantitative and qualitative data. Techniques of data analysis, including use of manuscript census, content analysis, collective biography, and secondary analysis.

Mr. Prager, Mr. Roy, Mr. Zeitlin

**212A-212B. Marxist Methodology.** Prerequisite: course 101 or consent of instructor. Practice in dialectical method of attaining scientific knowledge about society as a process and mode of production. Critical examination of methodological issues and techniques and practical field research.

**213A-213B. Techniques of Demographic and Ecological Analysis.** Prerequisite: course 210A or equivalent. Procedures and techniques for collection, evaluation, and analysis of demographic and ecological data; models of population and ecological structure and change; applications to study of social structure and social change.

Mr. Mason, Mr. Telles

**214A-214B. Naturalistic Methods for Recorded Data.** (Not the same as courses 214A-214B prior to Winter Quarter 1990.) Prerequisite: consent of instructor. Special features of audio and video recordings as sources of data; problems of description and analysis posed by working with recorded data; practical exploration of techniques of data collection and transcription with both audio and video data; analysis of single cases and analytically defined collections; use of computer to organize research with recorded data. In Progress grading.

Mr. Schegloff

**215A-215B. Experimental Sociology.** Prerequisites: course 210A or equivalent, consent of instructor. Basic fundamentals of experimental method, particularly as it is used in social psychology. In Progress grading.

Mr. Grusky, Mr. Rabow



**216A-216B. Survey Research Methods.** Course in methodology and techniques: formulation of research problem; study design; hypotheses; sampling; measurement; questionnaire and schedule construction; interviewing and data collection; processing and tabulation; analysis and interpretation; presentation of findings; cross-national, replicative, panel, and other complex survey designs. Students participate in survey research project. In Progress grading.

Mr. TenHouten, Mr. Treiman

**217A. Analyzing Ethnographies.** Seminar, three hours. Prerequisite: consent of instructor. Analysis of ethnographic monographs.

Mr. Emerson, Mr. Katz

**217B-217C. Ethnographic Fieldwork.** (Formerly numbered 217A-217B.) Seminar, three hours. Prerequisite: consent of instructor. Recommended: course 217A. Theories and techniques of ethnographic fieldwork. Kinds of problems amenable to ethnographic approaches, methods, and techniques for doing fieldwork, and ethnical problems involved in such research. In Progress grading.

Mr. Emerson, Mr. Katz

**218A-218B. Ethnomethodological Methods.** Prerequisite: consent of instructor. Examination of techniques used in ethnomethodological research, practice in critical evaluation of research, and directed experience in conduct of an extended investigation employing ethnomethodological procedures. In Progress grading.

**219A-219B. Advanced Statistical Methods I, II.** Lecture, three hours; discussion, two hours. Prerequisites: courses 210A-210B or equivalent or consent of instructor. Not required. Advanced multivariate statistical methods: discrete variables and events, logit and log-linear regression, event-history analysis, general linear model, exploratory and confirmatory factor analysis, linear causal models, latent variables, reciprocal causation, classification and clustering, time-series analysis.

Mr. Nacoch

**220. Role Theory.** Prerequisites: graduate standing, consent of instructor. Review of theories and research dealing with social roles, with special emphasis on roles in social interaction and in formation of the social self.

**221. Social Ecology.** Prerequisites: courses 18, 116, or equivalent, and graduate standing, or consent of instructor. Examination of various approaches to both microecology and macroecology, including classical and neoclassical ecology, social area analysis, socio-cultural ecology, city-size distributions, effects of population density on animals and humans, proxemics, territoriality, and effects of physical environment on humans.

Mr. Bailey

**222. Foundations of Ethnomethodological, Phenomenological, and Analytic Sociologies.** Lecture, three hours. Prerequisite: graduate standing or consent of instructor. Basic issues, methods, and topics of ethnomethodological, phenomenological, conversational-analytic, and related varieties of inquiry. Central themes such as the world of everyday life, problem of rationality, rules/norms and tacit knowledge, problem of social order, speaking and discourse, constitutive practices, and production of ordinary interaction in first part; guest presentations by affiliated faculty in second part.

Mr. Pollner

**223. Phenomenological and Interactionist Perspectives on Selected Topics.** Lecture, three hours. Comparison of phenomenological and symbolic interactionist perspectives by examining a particular body of live or currently unresolved substantive issues. Topics vary; attention on development of phenomenological and interactionist thought on topic of concern, with special concern for ambiguities and divergences both within and between the two approaches. When relevant, attention to logical and historical relations of phenomenology and interactionism of pragmatist, existentialist, and ordinary language philosophies.

Mr. Katz

**224A-224B. Problems in Social Psychology.** Prerequisites: course 210A, consent of instructor. Basic course for graduate students intending to specialize in social psychology. **224A.** Major theoretical contributions to the field. **224B.** Current work being done in department in several subfields.

Mr. Grusky, Mr. Kollock

**225A-225B. Demographic Perspectives on Relationship of Family and Economic Systems.** Prerequisites: courses 210A-210B or consent of instructor. Examination of interrelationship of family and economic systems in societies at different levels of economic development, focusing particularly on the U.S. experience. Central to course: (1) analysis of how demographic factors affect economic and family systems; (2) how these systems, and changes in them, affect demographic variables; and (3) how this two-way process influences relationship of family and economic systems over time. **225A.** Lectures and readings. **225B.** Individual research projects involving term paper and classroom reports of results.

Ms. Oppenheimer

**226A-226B. Introduction to Theory and Major Empirical Research in Social Demography.** Lecture, two hours; discussion, one hour. Prerequisites: course 210A, consent of instructor. Survey and critical examination of population theories and related major empirical research. Emphasis on interrelation of cultural, socioeconomic, and demographic factors. Introduction to elementary demographic methods utilizing microcomputers.

Ms. Oppenheimer

**227. Sociology of Knowledge.** Prerequisite: graduate standing or consent of instructor. Survey of theories and research concerning social determinants of systems of knowledge and role of intellectual and artistic elites in Western societies.

**228A-228B. Critical Issues in Macrosociology.** Lecture, two hours; discussion, one hour. Prerequisite: graduate standing. Conceptual introduction to the area of macrosociology in which exemplary works are read, studied for substance and methods, and critiqued in seminar and in written papers. Usually team taught by faculty of varying orientations. In Progress grading.

Mr. Mann, Mr. Szelenyi, Mr. Zeitlin

**229A. Informal Social Control.** Lecture, three hours. Development and transformation of informal disputes and troubles in communities, neighborhoods, public places, work settings, households, and families.

Mr. Emerson

**229B. Social Control Institutions.** (Formerly numbered 229.) Lecture, three hours. Course 229A is not prerequisite to 229B. Current research and theory in formal social control processes and institutions, including police, courts, schools, and nonvoluntary treatment programs, among others.

Mr. Emerson

**230. Nations and Nationalism.** (Not the same as course 230 prior to Fall Quarter 1993.) Lecture, three hours. Preparation for independent work in the area of nations and nationalism through close reading of key theoretical and empirical works in this or related areas. S/U or letter grading.

Mr. Brubaker

**232. Survey Data Acquisition.** Lecture, three hours. Prerequisites: courses 210A-210B. Traditional topics on survey research practice in study design, instrument design, sampling, interviewing, and data management. Parallel coverage of research literature on various sources of nonsampling response bias that influence survey results. Ongoing survey that employs Computer-Assisted Telephone Interviewing is available as a resource for course.

**233. Foundations of Political Sociology.** Lecture, three hours. Prerequisite: graduate standing or consent of instructor. Survey of the field of political sociology, oriented around critical themes in major theoretical traditions and contemporary exemplars. Special attention to competing perspectives on power, theory of the state, and relationship of class structure to politics.

Mr. Prager, Mr. Roy

**234. Sociology of Community Organization.** Prerequisites: graduate standing, consent of instructor. Survey of recent and classical research and literature dealing with predominantly political institutions, problem of order, and organization of communal life in the village and metropolis.

**235. Theories of Ethnicity.** Lecture, one hour; discussion, two hours. Prerequisite: graduate standing or consent of instructor. Examination of variety of theoretical approaches in understanding race and ethnicity in contemporary societies, with emphasis on recent debates among class analysis, pluralist, primordialist, and racial choice perspectives.

Mr. López

**236. Immigration (3 units).** (Not the same as course 236 prior to Fall Quarter 1993.) Emphasis on recent immigration to the U.S. in light of historical experience. Examination of patterns of adaptation and ethnic change, with particular attention to new theoretical approaches within multidisciplinary framework.

Mr. Light, Mr. Waldinger

**237. Seminar: Theory and Research in Comparative Social Analysis (2 units).** Prerequisite: graduate standing. Emphasis on one issue of particular importance for comparative analysis of capitalism and socialism. North America and Western Europe, developed capitalist and socialist countries and the Third World, and implications for theory construction and social research. S/U grading.

Mr. Szelenyi

**239A-239B. Quantitative Research on Social Stratification and Social Mobility.** Lecture, three hours. Prerequisites: courses 210A-210B or equivalent. Introduction to English language research literature on quantitative social stratification and social mobility in the U.S. and abroad. In Progress grading.

Mr. McFarland, Mr. Treiman

**240. Mathematics of Population.** Prerequisite: prior knowledge of matrices, calculus, and probability theory. Discrete and continuous deterministic and probabilistic models of growth and composition of a one-sexed population classified by age, plus selected topics on more complicated population models.

Mr. McFarland

**241. Theories of Gender in Society.** Lecture, one hour; discussion, two hours. Gender stratification in society and sociology; extent of gender diversity in human societies past and present; why gender is absent in classical macrosociology; can masculinist paradigms make space for gender or does a feminist-informed sociology necessitate a fresh approach?

Ms. Hart

**242. Analysis of Categorical Data.** Lecture, three hours. Prerequisites: courses 210A-210B or Statistics M152A and 152B-152C or equivalent or consent of instructor. Log-linear and log-bilinear analysis (hierarchical log-linear models, logit models, association models, quasi-symmetry models, log-rate models, latent-structure models, and latent-trait models).

Mr. Mason

**243. Interaction and Institutions.** Lecture, three hours. Examination of ethnographic and conversational analytic research on structure and processes of interaction in several institutional settings, taken from the following: medicine, criminal justice, psychiatry, social welfare, education, mass communications.

Mr. Emerson, Mr. Heritage

**C244A-C244B. Conversational Structures I, II.** Lecture, three hours; discussion, one hour. May be concurrently scheduled with courses CM124A-CM124B. Graduate students have additional assignments and/or meet as a group one additional hour each week. S/U or letter grading. **C244A.** Introduction to some structures which are employed in organization of conversational interaction, such as turn-taking organization, organization of repair, and some basic sequence structures with limited expansions. **C244B.** Prerequisite: course C244A. Consideration of some more expanded sequence structures, story structures, topical sequences, and overall structural organization of single conversations.

Mr. Schegloff

**245. Cultural Sociology: Classical and Contemporary Approaches.** Lecture, one hour; discussion, two hours. Exploration of classical approaches to cultural dimension of social life — Weberian, Durkheimian, Parsonian, and critical — and living traditions they have spawned. Examination of contemporary efforts at constructing a new cultural sociology. Theoretical focus, with consideration of case studies. Mr. Alexander

**246. Cultural Studies: Hermeneutic, Semiotic, and Poststructural Traditions.** Lecture, one hour; discussion, two hours. Examination of cultural analysis as it has evolved outside the discipline of sociology, on premise that these extra-sociological approaches provide critical resources in advancing the field of cultural sociology today. Theoretical and comparative emphasis, with consideration of case studies. Mr. Alexander

**247. Sociology of Emotions.** (Not the same as course 247 prior to Fall Quarter 1992.) Lecture, two hours; discussion, one hour. Prerequisite: graduate standing. Sociological theories of emotional expression; experiential approaches to emotions: motivational, cognitive, psychophysiological, and behavioral; repression, social oppression, and the emotions; creativity and expressed affect; thought, sensations, and the emotions; specific emotions; cultural differences in emotional expression; measurement of emotions. Mr. TenHouten

**M249A. Health Professions.** (Same as Community Health Sciences M274.) Lecture, three hours. Prerequisite: Community Health Sciences 270 or consent of instructor. Sociological examination of concepts "health" and "illness" and role of various health professionals, especially physicians. Attention to meaning of professionalization and professional/client relationships within a range of organizational settings. Mr. Goldstein

**M249B. Health and Illness Behavior.** (Same as Community Health Sciences M275.) Prerequisites: Community Health Sciences 270 and Epidemiology 100, or consent of instructor. Sociocultural factors affecting differential patterns of health behavior, illness behavior, and sick-role behavior. Mr. Berkanovic

**250. Methodological Problems.**

Mr. Bailey, Mr. TenHouten

**251. Topics in the Problem of Social Order.**

**253. Quantitative Methods in Sociology.**

Mr. Bailey, Mr. Bonacich

**255A-255B. Selected Issues in Sociological Theory.** Seminar. Prerequisite: consent of instructor. Course 255A is not ordinarily prerequisite to 255B. Examination of selected issues and problems in classical or contemporary sociological theory and in history of development of sociological theory.

Mr. Champagne

**256. Demography.**

Mr. Bailey, Mr. Telles

**257. Demography of Marriage Formation and Dissolution.** Discussion, three hours. Prerequisites: course 210A, consent of instructor. Extensive and intensive critical examination of major approaches to analysis of marriage formation and dissolution, with focus primarily on demographic literature.

Ms. Oppenheimer

**258. Talk and Social Institutions.** Lecture, three hours. Prerequisite: consent of instructor. Introduction to methods of conversation analysis, with particular reference to interaction in institutional contexts. Examination of relations between design of specific interactional activities and larger social and institutional contexts in which those activities are embedded.

Mr. Clayman, Mr. Heritage

**259. Social Structure and Economic Change: Historical and Comparative Perspectives.**

Ms. Cheng, Mr. Zeitlin

**260. Economy and Society.** Discussion, two hours. Prerequisite: graduate standing or consent of instructor. Review and critique of major analytical traditions in economy and society. Mr. Light, Mr. Zeitlin

**261. Ethnic Minorities.**

**M262. Selected Problems in Urban Sociology.** (Same as Afro-American Studies M200C.) Seminar. Prerequisite: consent of instructor.

Mr. Allen, Mr. Light, Mr. Oliver

**263. Social Stratification.**

Mr. Treiman

**264. Personal Identity in Historical Perspective.**

Lecture, three hours. Prerequisite: graduate standing. Examination of distinctive features of personal identity in contemporary society through use of historical materials on various aspects of private life. Topics include home, food, clothing and appearance, personal odor, and cleanliness in everyday life.

Mr. Katz, Mr. Pollner

**265. Problems in Organization Theory.**

Mr. Alvarez, Mr. Grusky, Ms. Zucker

**266. Selected Problems in Analysis of Conversation.** Prerequisites: courses C244A-C244B or consent of instructor. Variable topics/formats course. Consult instructor for topics and formats to be offered in a specific term. May be repeated for credit with topic change. S/U or letter grading. Mr. Schegloff

**267. Selected Problems in Communication.**

Mr. Pollner, Mr. Schegloff

**268. Selected Problems in Psychoanalytic Sociology.** Discussion, three hours. Recommended (but not prerequisite): at least one year of methods courses. Selected problems in interpretation of sociology and psychoanalysis, which may be substantive (group development, socialization, culture, deviance, collective behavior) or methodological; latter focuses on clinical fieldwork and experimental use of psychoanalytic and sociological techniques. Mr. Rabow

**269. Collective Behavior.**

**270. Selected Problems in Socialization.**

Mr. Allen

**271. Ethnomethodology.**

**272. Topics in Political Sociology.**

Mr. Roy, Mr. Zeitlin

**273. Attitudes and Social Structure.**

**M275. Contemporary Issues of the American Indian.** (Same as American Indian Studies M200C and Anthropology M269.) Introduction to most important issues facing American Indians as individuals, communities, tribes, and organizations in the contemporary world, building on historical background presented in American Indian Studies M200A and cultural and expressive experience of American Indians presented in American Indian Studies M200B.

Mr. Champagne, Ms. Heth

**276. Selected Topics in Sociology of East Asia.**

Prerequisites: graduate standing, consent of instructor. Selected problems in China, or in China and Japan comparatively. Possible topics include (1) China's Great Proletarian Cultural Revolution, (2) internal contradictions in Chinese society: male/female relations, city and countryside, minority nationalities, class struggle under socialism, etc., (3) China and Japan: two models of development. Ms. Cheng

**277. Japanese Society: Selected Topics.** Lecture, two and one-half hours. Prerequisite: graduate standing. Social structural characteristics and functioning of contemporary Japanese society, with focus on comparison and evaluations of functional (or rational) and cultural explanations of selected social phenomena. Topics include forms of social interaction, work organization, family, education, and equality.

**279. Seminar: Applied Social Research.** Lecture, two hours; discussion, one hour. Opportunities for applied research, distinctive features of applied work, and procedures commonly employed in various areas of research. Examination of representative work in specific areas of applied research. Mr. Berk

**280. Seminar: Evaluation Research.** Prerequisite: graduate standing. Technical and political aspects of implementing evaluation research studies. Role of evaluation research in social policy development, as well as procedures for undertaking process and impact evaluations. S/U or letter grading.

**281. Selected Problems in Mathematical Sociology.** Prerequisite: consent of instructor. Exploration of some mathematical models of sociological processes. Possible topics include models of small groups, social mobility, kinship relations, organizations, social interaction.

Mr. Bonacich, Mr. McFarland

**282. Organizations and the Professions.**

Mr. Alvarez

**283. Applied Sociology.** Discussion, two hours. Prerequisite: graduate standing. Examination of roots and intellectual traditions underlying contemporary interest and work in applied sociology. Discussion of range of methodological perspectives used in applied research, utility of social research in various substantive domains and conflicts and controversies related to ideological activities, competence and performance requirements, and identification with and participation in the discipline. Mr. Berk

**284. Topics in Mental Health and Illness.** Prerequisites: course 148 or equivalent, graduate standing.

Mr. Grusky, Mr. Pollner

**285A-285Z. Special Topics in Sociology.** Seminar, three hours. Prerequisite: graduate standing. Seminars on selected current topics of sociological interest. Consult *Schedule of Classes* for topics and instructors. May be repeated for credit.

**286. Event History Analysis.** Lecture, three hours. Prerequisites: courses 209A-209B and 209C, or 210A-210B, or equivalent, or consent of instructor. Logit models for discrete-time event history models; piecewise exponential hazards models based on use of log-linear analysis; proportional hazards, nonproportional hazards, and stratified models based on Cox partial likelihood method; and accelerated failure-time regression models. S/U or letter grading.

**288A-288B-288C. Mental Health Services for Persons with AIDS (3 units each).** Lecture, two hours; discussion, one hour. Prerequisite: graduate standing or consent of instructor. Analysis of current research on mental health service systems for persons with AIDS. S/U grading. Mr. Grusky

**289A-289B-289C. Social Psychology Seminars (2 units each).** Lecture, one hour; discussion, one hour.

Prerequisite: graduate standing. Required of students in social psychology area program, but open to all graduate students in good standing. Forums for presentation of advanced work in social psychology designed to develop ability to understand, critically evaluate, and present research in fields relevant to study of social psychology. May be repeated for credit. S/U grading.

**290A-290B-290C. Communities and Institutions Seminars (2 units each).** Lecture, one hour; discussion, one hour. Prerequisite: graduate standing. Required of students in communities and institutions area program, but open to all graduate students in good standing in department. Seminars for presentation of advanced work in communities and institutions designed to contribute to theoretical and methodological comprehension of work in this area program and to critically evaluate avenues for further research advancements. May be repeated for credit. In Progress and S/U grading.

**291. Moral Solidarity in Communities.** Comparative analysis of social solidarity and collapse of social solidarity in voluntary and traditional communities. Contrasts more and less solidarity types, with special reference to utopian communities and developmental processes. Mr. Light

**292A-292B-292C. Research Development.**

Mr. Grusky

**293A-293B-293C. Colloquia: Ethnomethodological, Phenomenological, and Observational Sociologies (2 units each).** Prerequisites: courses CM124A-CM124B or 217B-217C or 218A-218B and 222, or consent of instructor. Participants present ongoing work and read and discuss exemplary past work of common interest. Continuing colloquia in which participation is expected of faculty and graduate students affiliated with ethnomethodological, phenomenological, and observational sociologies area program (students taking a minor field examination may be exempt on request). S/U grading.

**294A-294B-294C. Research Seminars: Macrosociology.** Discussion, two hours. Prerequisite: consent of instructor. Required of students in macrosociology area program. Training in conduct, presentation, and critical evaluation of original research and analysis of substantive and methodological questions in macrosociology. In Progress and S/U grading. Mr. Zeitlin

**295A-295B-295C. Seminars: Quantitative Sociology (2 units each).** Ongoing seminars in quantitative sociology area program. Forum in which faculty, students, and visitors make presentations and obtain feedback on research being planned or conducted or recently completed, including didactic presentations on important developments in the area. Students required to make a presentation each term they are enrolled for credit. S/U grading.

**M296A-M296B. Social Theory and Comparative History.** (Same as History M203A-M203B and Political Science M291A-M291B.) Colloquium, three and one-half hours every other week. Introduction to historically rooted social theory and theoretically sensitive history, following the program of the Center for Social Theory and Comparative History. Each course may be taken independently for credit. Mr. Ashcraft, Mr. Brenner

**297A-297B-297C. Colloquia: Macrosociology (2 units each).** Weekly forums for presentation of advanced work in macrosociology by graduate students and faculty, as well as visitors from other campuses. Intended to contribute to theoretical and methodological understanding of work in area of macrosociology. S/U grading. Ms. Milkman, Mr. Roy

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495A-495B. Supervised Teaching of Sociology (2 units each).** Prerequisite: appointment as teaching assistant in Sociology Department or equivalent. Special course for teaching assistants designed to deal with problems and techniques of teaching introductory sociology. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**595. Directed Research for Master's Paper (4 to 12 units).** Directed research for and writing of M.A. degree paper under guidance of student's M.A. committee chair. S/U grading.

**596. Directed Individual Study and Research in Sociology (2 to 12 units).**

**597. Individual Study for Examinations (4 to 12 units).** Preparation for Ph.D. qualifying examinations. S/U grading.

**599. Research in Sociology for Ph.D. Candidates (4 to 12 units).**

C. Brian Morris, Litt.D. (*Spanish*)  
C.P. Otero, Ph.D. (*Spanish, Romance Linguistics*)  
A. Carlos Quicoli, Ph.D. (*Portuguese, Romance Linguistics*)  
Enrique Rodríguez-Cepeda, Ph.D. (*Spanish*)

#### Professors Emeriti

José R. Barcia, Lic. F. y L.  
John A. Crow, Ph.D.  
E. Mayone Dias, Ph.D.  
Claude L. Hulet, Ph.D.  
José Pascual-Buxó, Ph.D.  
Stanley L. Robe, Ph.D.  
Anibal Sánchez-Reulet, Ph.D.  
Marion A. Zeitlin, Ph.D.

#### Associate Professors

Héctor Calderón, Ph.D. (*Spanish*)  
Guillermo Hernández, Ph.D. (*Spanish*)  
Efraín Kristal, Ph.D. (*Spanish*)  
José Monleón, Ph.D. (*Spanish*)  
Susan Plann, Ph.D. (*Spanish*)  
A. John Skirius, Ph.D. (*Spanish*)  
Paul C. Smith, Ph.D. (*Spanish*)

#### Assistant Professors

Adriana Bergero, Ph.D. (*Spanish*)  
Verónica Cortínez, Ph.D. (*Spanish*)  
Claudia Parodi, Ph.D. (*Spanish*)

#### Lecturers

José M. Cruz-Salvadores, M.A. (*Spanish*)  
George L. Voyt, J.D., *Emeritus*

## Scope and Objectives

The Department of Spanish and Portuguese is dedicated to the study and teaching of the languages, literatures, and cultures of the Hispanic heritage in all areas of the world, particularly on the continents of Europe and America. It maintains a strong commitment to the value of original research and professional instruction at all levels of its activities.

Whether studying for the B.A., M.A., or Ph.D. degree, students are given careful guidance in the choice of courses and in the preparation of a study program. The richness of Hispanic culture is amply represented in the extensive range of courses in language, linguistics, and literature. Although the literatures of Spain, Portugal, Brazil, and Spanish America predominate, courses are also offered in Chicano literature. The breadth of courses offered by the department allows undergraduate students to pursue many possible interests and enables graduate students to concentrate in depth in several areas of specialization.

The department's courses are primarily designed to serve the four B.A. programs: B.A. in Spanish (Plan A), B.A. in Spanish and Linguistics (Plan B), B.A. in Portuguese, and B.A. in Spanish and Portuguese, as well as to prepare students for its three graduate programs: M.A. in Spanish, M.A. in Portuguese, and Ph.D. in Hispanic Languages and Literatures. The courses are also functionally supportive of such interdepartmental programs as the California State Instructional Credential in Spanish, B.A. and M.A. programs in Latin American Studies, M.A. program in Folklore and Mythology, and M.A.

and Ph.D. programs in Comparative Literature and Romance Linguistics and Literature.

## Bachelor of Arts in Spanish and in Spanish and Linguistics

Students with one or more years of high school Spanish who plan to enroll in Spanish 1 through 25 must take the departmental placement examination. Consult the *Schedule of Classes* or the department office for test dates.

### Preparation for the Majors

*Required:* Spanish 25 or equivalent as determined by the placement test; courses M35, M42, M44, or equivalent.

### The Major, Plan A (Spanish Language and Literature)

*Required:* Fifteen upper division courses, including Spanish 100A-100B, 105, 119A, 119B, 119C, 120A-120B, 127, 136A-136B, and four elective courses in the department (one in Spanish literature, one in Spanish-American literature, and two others).

### The Major, Plan B (Spanish and Linguistics)

*Required:* Completion of six terms of study in one other foreign language or three terms in each of two other foreign languages, in addition to the preparation for the major courses. Portuguese is recommended.

The major consists of 15 upper division courses, including Spanish 100A-100B, 105, 115, M118A-M118B, 127, Linguistics 100, 103, 110, 120A, 120B, and three electives in Spanish.

### Honors Program

To qualify for graduation with departmental honors, you must achieve a 3.0 overall grade-point average and a 3.5 grade-point average in the major and have completed two of the three senior honors seminars (Spanish 170A, 170B, 170C) with appropriate grades.

## Bachelor of Arts in Portuguese

### Preparation for the Major

*Required:* Portuguese 3, 25, M35, M42 or M44, 46, or equivalent.

### The Major (Portuguese Language and Literature)

*Required:* Thirteen upper division courses, including Portuguese 100A, 100B, 105, 120A-120B, 130A-130B, and six elective courses in Portuguese, or four electives in Portuguese plus two courses from areas that complement your program approved by the undergraduate adviser in Portuguese.

## Spanish and Portuguese

5310 Rolfe Hall, (310) 825-1036

#### Professors

Shirley L. Arora, Ph.D. (*Spanish*)  
Rubén A. Benítez, Ph.D. (*Spanish*)  
Joaquín Gimeno, Ph.D. (*Spanish*)  
Carroll B. Johnson, Ph.D. (*Spanish*), *Chair*  
Gerardo Luzuriaga, Ph.D. (*Spanish*)

## Portuguese and Linguistics Concentration

*Required:* Completion of six terms of study in one other foreign language or three terms in each of two other foreign languages, in addition to the preparation for the major courses. Spanish is recommended.

The concentration consists of 13 upper division courses, including Portuguese 100A, 100B, 105, M118A-M118B, Linguistics 100, 103, 110, 120A, 120B, and three electives, two of which must be in Luso-Brazilian literature.

## Double Majors

Through judicious use of electives, students may find it possible to secure the B.A. degree with two complete majors (e.g., Portuguese/Spanish, Portuguese/History, Portuguese/Sociology, etc.). Interested students should consult the undergraduate adviser in Portuguese as early as possible in their B.A. program.

## Study in a Portuguese-Speaking Country

You are encouraged to spend up to one year in a Portuguese-speaking country to study in a university or conduct research. Appropriate credit may be granted in accordance with your individual program, arranged in consultation with the undergraduate faculty adviser in Portuguese. Proposals must be submitted in advance in writing and must be approved by the department.

## Bachelor of Arts in Spanish and Portuguese

### Preparation for the Major

*Required:* Spanish 25, Portuguese 25, M35, M42 or M44, 46, or equivalent.

### The Major

*Required:* Six upper division courses in language and linguistics, including Spanish 100A-100B, Portuguese 100A, 100B, M118A or M118B, and either Spanish 105 or Portuguese 105; nine upper division courses in literature selected from one of the following groups: *group A* (peninsular literature to 1700) — Spanish 123, 124, 127, Portuguese C124, C125, C126, and three other literature courses, one of which must be in Spanish and one in Portuguese; *group B* (peninsular literature from 1700 to the present) — Spanish 128, 130, 133, Portuguese C127, C128, C129, and three other literature courses, one of which must be in Spanish and one in Portuguese; *group C* (Spanish-American and Brazilian literature to 1900) — Spanish 137, 139, 140, Portuguese C131, C132, C133, and three other literature courses, one of which must be in Spanish and one in Portuguese; *group D* (Spanish-American and Brazilian literature from 1900 to the present) — Spanish 142, 143, Portuguese C134, C135, and five other literature courses, two of which must be in Spanish and two in Portuguese.

## Master of Arts in Spanish

### Admission

Admission to the M.A. program is based on careful review of your academic record by the graduate admissions committee. Minimum requirements include a B.A. in Spanish or the equivalent from UCLA or another recognized university, a satisfactory score on the Graduate Record Examination (GRE) General Test, and three letters of recommendation, preferably from professors with whom you have studied in the major field, who can comment on your potential as a graduate student. For admissions information, write to the Department of Spanish and Portuguese, 5310 Rolfe Hall, UCLA, Los Angeles, CA 90024-1532.

You may be required to take one or more complementary courses (which may not be applied toward the M.A.) if the committee determines that some area of your preparation in language or literature is deficient.

### Foreign Language Requirement

You are required to study one of the following languages: French, German, Italian, Latin, Portuguese, or another language approved by your guidance committee. The requirement may be fulfilled by (1) passing the Graduate School Foreign Language Test (GSFLT) with a score of 500 or better, (2) passing the University reading examination in one of these languages when no GSFLT is available, or (3) passing at least a level three course at UCLA.

### Course Requirements

Eleven graduate Spanish courses are required, at least one of which must be a seminar taken only after the appropriate preseminar. Course 596 may be included once; courses 597 and 598 may not be applied toward the degree.

Three plans of study for the M.A. in Spanish are offered: Plan A, Linguistics; Plan B, Literature; Plan C, Linguistics and Literature.

**Plan A (Linguistics)** — One graduate course in literature offered by the department, and eight elective graduate courses are required. You must select one major field (five courses) and one minor field (three courses) from the following areas of specialization: phonology and morphology; syntax; diachronic or synchronic language variation. Also required are Spanish M201A-M201B or two additional courses selected from an area outside your major and minor fields.

**Plan B (Literature)** — Spanish M201A-M201B, one course from 202A through 209, and eight elective graduate courses are required. You must select one major field (four courses) and one minor field (three courses) from the following areas of specialization: Spanish literature from its beginning to 1700; Spanish literature from 1700 to the present; Spanish-American literature from its beginning to 1900; Spanish-American literature from

1900 to the present. One additional course must be selected from areas outside your major and minor fields.

**Plan C (Linguistics and Literature)** — Spanish M201A-M201B and nine elective graduate courses, four in literature and five in linguistics, are required. The four literature courses are to be selected from two of the fields specified in Plan B, two courses from each of two areas. Of the five courses in linguistics, one must be in phonology and morphology, one in syntax, and one in diachronic or synchronic language variation.

### Comprehensive Examination Plan

One term before you propose to take the comprehensive examination, you must present to your guidance committee reading lists which constitute the basis for your examination. Students in Plan A receive a list of essential reading when they enter the plan and must present one reading list for the major field and one for the minor field. If you are in Plan B, you also must present for approval one reading list in your major field and one in your minor field. Plan C students must present for approval reading lists representing the literature fields (the reading list for linguistics is established by the guidance committee).

### Thesis Plan

You may petition to present a thesis in lieu of taking the comprehensive examination only after you complete five graduate courses. The graduate adviser and your committee will approve your petition only if they find evidence of exceptional ability and promise in your term papers and coursework.

## Master of Arts in Portuguese

### Admission

The UCLA Bachelor of Arts in Portuguese or the equivalent is required. Other admission requirements are the same as those for the M.A. in Spanish.

### Major Fields

You must select one major field and two minor fields from the following specialization areas: Portuguese literature; Brazilian literature; Portuguese linguistics.

### Foreign Language Requirement

You are required to study one of the following languages: French, German, Italian, Latin, Spanish, or another language approved by your guidance committee. The requirement may be fulfilled by (1) passing the Graduate School Foreign Language Test (GSFLT) with a score of 500 or better, (2) passing the University reading examination in one of these languages when no GSFLT is available, or (3) passing at least a level three course at UCLA.

## Course Requirements

Portuguese M201A-M201B, and eight elective graduate courses in Portuguese are required, at least one of which must be a seminar. You must select four courses in your major field and two courses in each of your two minor fields. Course 596 may be included once; courses 597 and 598 may not be applied toward the degree.

## Comprehensive Examination Plan

The examination consists of (1) a three-hour written test in your major field and (2) a 90-minute written test in each of your two minor fields. One term before you propose to take the comprehensive examination, you must present for approval to your guidance committee one reading list for your major field in literature (approximately 15 authors and 30 works) and one reading list for your minor field in literature (approximately six authors and 15 works). The reading lists form the basis of the literature section of the examination (the reading list for linguistics is established by the guidance committee).

## Thesis Plan

You may petition to present a thesis in lieu of taking the comprehensive examination only after you complete five graduate courses, one of which must be a seminar. The graduate adviser and your committee will approve your petition only if they find evidence of exceptional ability and promise in your term papers and coursework.

## Ph.D. in Hispanic Languages and Literatures

### Admission

The UCLA Master of Arts in Spanish or in Portuguese, or the equivalent, is required. Three letters of recommendation are also required from professors familiar with your work as a graduate student, to be addressed to your capacity for research-oriented doctoral studies and possible entry into the profession. The Graduate Record Examination (GRE) General Test is also required. A combined score of 1,000 is preferred; the verbal score is considered more important than the quantitative.

Students who hold the M.A. in Spanish or in Portuguese from UCLA fall into one of three categories and are so notified on receipt of the degree. The categories are (1) *low pass* (terminal M.A.) — not eligible for admission into the Ph.D. program, (2) *mid pass* — may continue toward the Ph.D. on a probationary basis, and (3) *high pass* — automatically eligible to enter the Ph.D. program.

### Major Fields or Subdisciplines

The department recognizes the following areas of specialization, from which you select one major field and two minor fields, together with an optional complementary support area: (1) Spanish linguistics; (2) Portuguese linguistics; (3) dia-

chronic Hispanic linguistics and philology; (4) medieval Spanish literature; (5) Renaissance and Golden Age Spanish literature; (6) 18th- and 19th-century Spanish literature; (7) 20th-century Spanish literature; (8) colonial and 19th-century Spanish-American literature; (9) 20th-century Spanish-American literature; (10) early Portuguese literature; (11) modern Portuguese literature; (12) Brazilian literature; (13) Spanish and Luso-Brazilian folklore.

## Foreign Language Requirement

Reading knowledge of two foreign languages in addition to both Spanish and Portuguese is required. The languages are selected in consultation with your guidance committee. The requirement may be fulfilled by (1) passing the Graduate School Foreign Language Test (GSFLT) with a score of 500 or better, (2) passing the University reading examination in the language when no GSFLT is available, or (3) passing at least a level three course at UCLA. You must fulfill the requirement in one of the languages no later than the sixth term of graduate study.

## Course Requirements

After the B.A., a minimum of 20 graduate courses is required. Spanish or Portuguese M201A-M201B may be required if you do not have prior credit for it. You normally take a minimum of six graduate courses in your major field, of which at least two must be seminars. In each of the minor fields, you normally take a minimum of four graduate courses, of which at least one must be a seminar.

## Qualifying Examinations

The qualifying examinations, given during the fifth and sixth weeks of Fall, Winter, and Spring Quarters, consist of (1) a four-hour written examination in the major field, (2) a two-hour written examination in each minor field, and (3) a two-hour University Oral Qualifying Examination on the three fields and at which your prospectus for the dissertation is discussed and approved. The written examinations are normally taken no later than nine terms after receiving the B.A. and six terms after receiving the M.A. Only students who pass the qualifying examinations are advanced to candidacy for the Ph.D.

## Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

## Final Oral Examination

The final oral examination is optional at the committee's discretion.

## Spanish

### Lower Division Courses

Spanish 1 through 3 use Shumway and Forbes' *Español en español*. The method is inductive.

Selected examples are given to enable students to inductively grasp the rules and develop their own grammar. This enables students to use language effectively and creatively. The courses are taught entirely in Spanish — students simultaneously learn to understand, speak, read, and write Spanish.

No credit is allowed for completing a less advanced course after successful completion of a more advanced course in grammar and/or composition.

Students with one or more years of high school Spanish who plan to enroll in Spanish 1 through 25 must take the departmental placement examination. Consult the *Schedule of Classes* or the department office for test dates.

**1. Elementary Spanish.** Discussion, five hours; laboratory, one hour.

**1G. Reading Course for Graduate Students.** Lecture, three hours. Knowledge of Spanish not required. May not be applied toward degree requirements. S/U grading.

**2. Elementary Spanish.** Discussion, five hours; laboratory, one hour. Prerequisite: course 1 or equivalent as determined by placement test.

**2G. Reading Course for Graduate Students.** Lecture, three hours. Prerequisite: course 1G or equivalent. May not be applied toward degree requirements. S/U grading.

**3. Elementary Spanish.** Discussion, five hours; laboratory, one hour. Prerequisite: course 2 or equivalent as determined by placement test.

**4. Intermediate Spanish.** Discussion, five hours; laboratory, one hour. Prerequisite: course 3 or equivalent as determined by placement test.

**5. Intermediate Spanish.** Discussion, five hours; laboratory, one hour. Prerequisite: course 4 or equivalent as determined by placement test.

**6. Intermediate Spanish.** (Not the same as course 6 prior to Fall Quarter 1990.) Discussion, five hours. Prerequisite: course 5 or equivalent. Review and analysis of the more sophisticated and complex syntactic structures of Spanish, verb morphology, and lexical discrimination. Students who have completed course 5 with a grade of A- or better may enroll directly in course 25.

**6A. Intermediate Spanish for Spanish Speakers.** (Formerly numbered 6.) Prerequisite: proficiency as determined by placement test. Concentration on formal aspects of the language (i.e., spelling, punctuation, accentuation, composition, reading, and traditional grammar) in lieu of course 6.

**8A-8B. Spanish Conversation (2 units each).** Discussion, three hours. Course 8A is open to students with credit for course 4 or equivalent. Students who have completed course 3 with a grade of B or better may be admitted. (F,W,Sp)

**9A-9B. Advanced Conversation (2 units each).** Discussion, three hours. Prerequisite: course 8B or equivalent. (F,W,Sp)

**25. Advanced Spanish.** Prerequisite: course 5 or equivalent. Concentration on building of vocabulary and attainment of a high degree of comprehension in preparation for courses in literature.

**25A. Composition for Spanish Speakers.** (Formerly numbered 26.) Lecture, three hours. Prerequisites: course 5 or equivalent, consent of instructor. Practice in reading and writing of Spanish for students with oral proficiency in Spanish (in lieu of course 25).

**M35. Spanish, Portuguese, and Nature of Language.** (Same as Portuguese M35.) Lecture, three hours. Introduction to language study within context of Romance languages, focusing on Spanish and Portuguese. Nature of language: structure, diversity, evolution, social and cultural settings, literary uses. Study of language and its relation to other areas of human knowledge.

**M42. Civilization of Spain and Portugal.** (Same as Portuguese M42.) Required of majors. Conducted in English. Highlights of civilization of Spain and Portugal, with emphasis on the artistic, economic, social, and historical development as background for upper division courses.

Mr. Cruz-Salvadores, Mr. Johnson

**M44. Civilization of Spanish America and Brazil.** (Same as Portuguese M44.) Required of majors. Conducted in English. Highlights of civilization of Spanish America and Brazil, with emphasis on the artistic, economic, social, and historical development as background for upper division courses.

Mr. Skirius

**60A-60B-60C. Hispanic Literatures in Translation.** Lecture, three hours. Class readings and analysis of selected works in translation. Classroom discussion, papers, and examinations in English. **60A.** Spanish Literature; **60B.** Spanish-American Literature; **60C.** *Don Quijote*.

**61A-61B-61C. Hispanic Literatures in Spanish.** Lecture, three hours. Not open for credit to students with credit for corresponding course in 60 series. Class readings and analysis of selected works. Classroom discussion, papers, and examinations in Spanish. **61A.** Spanish Literature; **61B.** Spanish-American Literature; **61C.** *Don Quijote*.

**62A-62B-62C. Hispanic Literatures and Film.** Lecture, three hours; film screenings, two to three hours. Analysis of main aesthetic, cultural, and philosophical questions in the Hispanic world as articulated in literature and film, addressing not only principal currents affecting Hispanic artistic expression but also diverse strategies employed by two distinct modes of representation. **62A.** Spain; **62B.** Spanish America; **62C.** The Chicano Experience.

Ms. Bergero, Mr. Monleón

**88A-88Z. Lower Division Seminars.** Discussion, three hours. Knowledge of Spanish not essential. Variable topics courses designed to explore various themes and issues pertinent to Hispanic literature and culture.

## Upper Division Courses

Prerequisite to all upper division courses is Spanish 25 or equivalent as determined by the placement test.

**100A-100B. Introduction to Study of Spanish Grammar.** Lecture, three hours. Prerequisite: course M35.

**100A.** Phonology and Morphology. Analysis of phonemic and morphological systems of Spanish.

Ms. Plann

**100B.** Syntax. Study of syntactical systems of Spanish.

Mr. Otero, Ms. Plann

**105. Spanish Composition.** (Formerly numbered 105A, 105B.) Lecture, three hours. Practice in writing Spanish with appropriate vocabulary, syntactical structures, and stylistic patterns.

**107. The Spanish of Southern California.** Lecture, three hours. Prerequisites: courses M35 and 100A-100B, or consent of instructor. Analysis of pronunciation, word formation, syntax, and lexicon of the Spanish of Southern California, with attention to regional features, social and age levels of speech, and interference from English.

**115. Applied Linguistics.** Lecture, three hours. Prerequisites: courses M35, 100B. Survey of major linguistic problems faced by teachers of Spanish.

Ms. Plann

**M118A-M118B. History of Portuguese and Spanish.** (Same as Portuguese M118A-M118B.) Lecture, three hours. Prerequisites: courses M35, 100A. Major features of development of Portuguese and Spanish languages from their origins in Vulgar Latin to modern times. **M118A.** Phonology; **M118B.** Morphology and Syntax.

Ms. Plann, Mr. Quicoli, Mr. Smith

**119A. Introduction to Study of Literature: Prose.** Lecture, three hours. Introduction to study of literary devices, figures of speech, and distinctive stylistic features in prose literature of Spain and Spanish America, particularly in the novel and essay.

**119B. Introduction to Study of Literature: Poetry.** Lecture, three hours. Introduction to study of literary devices, figures of speech, versification, and distinctive stylistic features in the poetry of Spain and Spanish America.

**119C. Introduction to Study of Literature: Drama.** (Formerly numbered 119B.) Lecture, three hours. Introduction to study of literary devices, figures of speech, and distinctive stylistic features in the drama of Spain and Spanish America.

**120A-120B. Survey of Spanish Literature.** Lecture, three hours. Introduction to principal periods, currents, and authors of Spanish literature.

Mr. Gimeno, Mr. Johnson, Mr. Rodríguez-Cepeda

**122. Medieval Literature: Prose.** Lecture, three hours. Recommended (but not prerequisite): course 120A. Study of main genres through representative works.

Mr. Gimeno

**123. Medieval Literature: Poetry.** Lecture, three hours. Recommended (but not prerequisite): course 120A. Study of main genres through representative works.

Mr. Gimeno

**124. Golden Age: Poetry and Drama.** Lecture, three hours. Recommended (but not prerequisite): course 120A. Study, through representative works, of the Golden Age poetry and drama.

Mr. Johnson, Mr. Rodríguez-Cepeda

**125. Golden Age: Prose.** Lecture, three hours. Recommended (but not prerequisite): course 120A. Study of 16th- and 17th-century prose writing in Spain, with particular emphasis on *Lazarillo de Tormes* and the picaresque tradition.

Mr. Johnson, Mr. Rodríguez-Cepeda

**127. Golden Age: Don Quijote.** Lecture, three hours. Recommended (but not prerequisite): course 120A. Development of the novel in the Golden Age, with particular reference to *Don Quijote*.

Mr. Johnson, Mr. Rodríguez-Cepeda

**128. The Enlightenment and Romanticism in Spain.** Lecture, three hours. Recommended (but not prerequisite): course 120B. Study, through representative works, of main manifestations of thought and literature from 1700 to 1850.

Mr. Benítez, Mr. Rodríguez-Cepeda

**130. Post-Romanticism, Realism, and Naturalism in Spain.** Lecture, three hours. Recommended (but not prerequisite): course 120B. Development of main trends of Spanish literature from 1850 to 1898.

Mr. Benítez, Mr. Smith

**132. 20th-Century Spanish Prose.** Lecture, three hours. Recommended (but not prerequisite): course 120B. Study of several representative works of Spanish prose literature since 1898.

Mr. Monleón, Mr. Morris

**133. 20th-Century Spanish Poetry and Drama.** Lecture, three hours. Recommended (but not prerequisite): course 120B. Study of several representative works of Spanish poetry and drama since 1898.

Mr. Morris

**136A-136B. Survey of Spanish-American Literature.** Lecture, three hours. Introduction to principal periods, currents, and authors of Spanish-American literature.

Ms. Arora, Mr. Luzuriaga, Mr. Skirius

**137. Literature of Colonial Spanish America.** Lecture, three hours. Recommended (but not prerequisite): course 136A. Study of most important genres and authors from the Conquest to 1810.

Ms. Arora

**139. Romanticism and Realism in Spanish-American Literature.** Lecture, three hours. Recommended (but not prerequisite): course 136A. Study, through representative literary works, of most important currents of thought and literary trends from 1810 to 1880.

Mr. Luzuriaga, Mr. Skirius

**140. Modernismo.** Lecture, three hours. Recommended (but not prerequisite): course 136A. Study, through representative works, of principal characteristics of *modernismo* in Spanish-American literature.

Mr. Luzuriaga

**142. 20th-Century Spanish-American Literature: Fiction and the Essay.** Lecture, three hours. Recommended (but not prerequisite): course 136B. Study, through representative novels, short stories, and essays, of Spanish-American prose literature since 1910.

Mr. Luzuriaga, Mr. Skirius

**143. 20th-Century Spanish-American Literature: Poetry and Drama.** Lecture, three hours. Recommended (but not prerequisite): course 136B. Study of principal poets, dramatists, and dramatic movements in Spanish-American literature since 1910.

Mr. Skirius

**144. Mexican Literature.** Lecture, three hours. Recommended (but not prerequisite): course 136B. Study of major movements and authors of Mexican literature.

Mr. Skirius

**M145. Introduction to Chicano Literature.** (Same as Chicana and Chicano Studies M145.) Lecture, three hours. Prerequisite: course 25 or 26. Recommended: course 136B. Introduction to texts representative of the Chicano literary heritage. Sampling of genres, as well as historical and geographical settings and points of view characteristic of work written by Chicanos during the 20th century. Most required reading is in Spanish. Bilingual and English works are included and discussed. Reading and analysis of a number of important scholarly and critical statements pertaining to characteristics and development of the Chicano literary corpus.

Mr. Hernández

**M149. Folk Literature of the Hispanic World.** (Same as Folklore M149.) Lecture, three hours. Study of history and present dissemination of principal forms of folk literature throughout the Hispanic countries.

Ms. Arora

**151A-151B. Women in Hispanic Literature.** Discussion, three hours. Study of works by and about women, with emphasis on portrayal of women, women's roles, and myths of womanhood within the Hispanic socio-ideological context. **151A.** Spain. Recommended (but not prerequisite): courses 120A-120B. **151B.** Spanish America. Recommended (but not prerequisite): courses 136A-136B.

**M161. Film and Literature of the Spanish-Speaking World.** (Formerly numbered 161.) (Same as Humanities M174.) Lecture, three hours. Exploration of perceptions of reality offered by different authors from Spain, Latin America, and the Chicano community. P/NP or letter grading.

Mr. Monleón

**170A. Senior Honors Seminar: Topics in Spanish Literature.** Lecture, three hours. Prerequisite: senior Spanish major with 3.5 GPA in the major. Directed research on topics within general area of Spanish literature. Two senior seminars required for departmental honors.

(F)

**170B. Senior Honors Seminar: Topics in Spanish-American Literature.** Lecture, three hours. Prerequisite: senior Spanish major with 3.5 GPA in the major. Directed research on topics within general area of Spanish-American literature. Two senior seminars required for departmental honors.

(W)

**170C. Senior Honors Seminar: Topics in Hispanic Linguistics.** Lecture, three hours. Prerequisite: senior Spanish major with 3.5 GPA in the major. Directed research on topics within general area of Hispanic linguistics. Two senior seminars required for departmental honors.

(Sp)

**197. Undergraduate Seminar.** Lecture, three hours. Prerequisites: upper division Spanish major, consent of instructor. Limited to 15 students. Variable topics course with readings, discussions, and papers; consult *Schedule of Classes* or department counselor for topic to be offered in a specific term.

**197A. Studies in Hispanic Culture and Civilization.** Lecture, three hours. Required of students preparing for a California State Instructional Credential in Spanish. Advanced course that studies diverse aspects of Hispanic culture, civilization, and history. Classroom discussions, papers, and examinations in Spanish.

**199. Special Studies (2 to 4 units).** Prerequisite: consent of adviser and instructor. Eight units may be applied toward the major requirements.

## Graduate Courses

**M200. Research Resources.** (Same as Portuguese M200.) Lecture, three hours. Identification and use of research resources for graduate students.

Mr. Benítez, Mr. Smith

**M201A-M201B. Literary Theory and Criticism.** (Formerly numbered M201.) (Same as Portuguese M201A-M201B.) Lecture, three hours. Definition, discussion, and application of main currents of contemporary literary theory and criticism. In Progress grading.

**202A. Phonology.** (Formerly numbered 202.) Lecture, three hours. Study of the sound structure of Spanish and main phonological processes that map underlying representations into surface representations. Bearing of phonological theory on study of meter.

Mr. Otero, Ms. Plann

**202B. Morphology.** (Formerly numbered 202.) Lecture, three hours. Study of derivational and inflectional word formation processes and their interaction with syntactic structure.

Mr. Otero, Ms. Plann

**204A-204B. Generative Syntax and Semantics.** Lecture, three hours. Study of syntactic structure of Spanish and relation between underlying representations and logical form within a principles-and-parameters framework. Bearing of syntactic and semantic structure on study of literature.

Mr. Otero

**M205A-M205B. Development of Portuguese and Spanish Languages.** (Same as Portuguese M205A-M205B.) Lecture, three hours. Intensive study of historical development of Portuguese and Spanish languages from their origin in spoken Latin.

Mr. Otero, Mr. Smith

**209. Dialectology.** Lecture, three hours. Major dialect areas of peninsular and American Spanish, with distinguishing features of each. Influence and contribution of cultural and historical features, including indigenous languages, to their formation.

**221. Medieval Lyric Poetry.** Lecture, three hours. Readings of and lectures on Spanish lyric poetry from the beginning to 1500.

Mr. Gimeno

**222. Medieval Epic and Narrative Poetry.** Lecture, three hours. Readings of and lectures on Spanish epic and narrative poetry from the beginning to 1500.

Mr. Gimeno

**223. Medieval Prose.** Lecture, three hours. Readings of and lectures on Spanish prose from the beginning to 1500.

Mr. Gimeno

**224. Poetry of the Golden Age.** Lecture, three hours. Readings of and lectures on Spanish poetry from 1500 to 1700.

Mr. Morris, Mr. Rodríguez-Cepeda

**225. Drama of the Golden Age.** Lecture, three hours. Readings of and lectures on the *comedia*.

Mr. Rodríguez-Cepeda

**226. Prose of the Golden Age.** Lecture, three hours. Readings of and lectures on fictional, didactic, religious, and historical writings.

Mr. Johnson

**227. Cervantes.** Lecture, three hours. Readings of and lectures on works of Cervantes.

Mr. Johnson

**228. The Enlightenment.** Lecture, three hours. Readings of and lectures on representative works of the period.

Mr. Benítez

**229. Romanticism.** Lecture, three hours. Readings of and lectures on representative works of the period.

Mr. Benítez

**230. Realism and Naturalism.** Lecture, three hours. Readings of and lectures on literary works, principally novels, from 1850 to 1898.

Mr. Benítez, Mr. Smith

**231. Major Currents in Modern Spanish Literature.** Lecture, three hours. Introduction to major literary currents, including symbolism, Parnassianism, and the Generation of 1898.

Mr. Morris

**232. Spanish Prose Literature from 1898 to the Civil War.** Lecture, three hours. Readings of and lectures on representative essays, novels, and short stories of the period.

Mr. Monleón, Mr. Morris

**233. Spanish Prose Literature after the Civil War.** Lecture, three hours. Readings of and lectures on representative essays, novels, and short stories of the period.

Mr. Monleón, Mr. Morris

**234. Spanish Drama and Poetry from 1898 to the Civil War.** Lecture, three hours. Readings of and lectures on representative plays and poems.

Mr. Morris

**235. Spanish Drama and Poetry after the Civil War.** Lecture, three hours. Readings of and lectures on representative plays and poems of the period.

Mr. Morris

**237. Literature of the Spanish Conquest.** Lecture, three hours. Readings of and lectures on chronicles, poems, and indigenous accounts of the Spanish Conquest.

Ms. Arora

**238. Baroque, Enlightenment, and Neoclassicism in Colonial Literature.** Lecture, three hours. Readings of and lectures on representative texts.

Ms. Arora

**239. Romanticism and Realism in Spanish-American Literature.** Lecture, three hours. Intensive study of Romanticism and realism in Spanish-American literature.

Mr. Skiriús

**240. Major Currents in Modern Spanish-American Literature.** Lecture, three hours. Study of principal trends in modern Spanish-American literature, particularly *naturalismo* and *modernismo*.

Mr. Luzuriaga

**241A-241B. Contemporary Spanish-American Short Story.** Lecture, three hours. Study of important short story writers from modernism to the present.

**243A-243B. Contemporary Spanish-American Poetry.** Lecture, three hours. Intensive study of important poets of Spanish America from modernism to the present.

**244A-244B. Contemporary Spanish-American Novel.** Lecture, three hours. Study of important novelists from modernism to the present.

**245. Contemporary Spanish-American Essay.** Lecture, three hours. Study of important Spanish-American essayists of the 20th century.

Mr. Skiriús

**246. Contemporary Spanish-American Drama.** Lecture, three hours. Study of principal Spanish-American dramatists and theater movements in the 20th century.

Mr. Luzuriaga

**247. Chicano Literature.** Lecture, three hours. Study of major movements and authors of Mexican American literature.

Mr. Calderón, Mr. Hernández

**M249. Folk Literature of the Spanish and Portuguese Worlds.** (Same as Folklore M249 and Portuguese M249.) Lecture, three hours. Intensive study of folk literature of the Spanish and Portuguese cultures as represented in (1) ballad and poetry, (2) narrative and drama, (3) speech.

Ms. Arora

Seminar courses (M251A through 290) may be taken for a maximum of eight units each with consent of the appropriate guidance committee and with topic change.

**M251A-M251B. Studies in Galegan-Portuguese and Old Spanish.** (Same as Portuguese M251A-M251B.) Lecture, two hours. Study of problems related to historical development of Galegan-Portuguese and Old Spanish.

Mr. Otero, Mr. Smith

**256A-256B. Studies in Spanish Linguistics.** Lecture, two hours. Study of problems in analysis and description of the contemporary Spanish language.

Mr. Otero

**257. Studies in Dialectology.** Discussion, two hours.

**262A-262B. Studies in Medieval Spanish Literature.** Discussion, two hours.

Mr. Gimeno

**264A-264B. Studies in Golden Age Spanish Literature.** Discussion, two hours.

Mr. Johnson, Mr. Morris, Mr. Rodríguez-Cepeda

**265. Cervantes.** Discussion, two hours.

Mr. Johnson

**270A-270B. Studies in 18th-Century Spanish Literature.** Discussion, two hours.

Mr. Benítez

**271A-271B. Studies in 19th-Century Spanish Literature.** Discussion, two hours.

Mr. Benítez, Mr. Smith

**272A-272B. Studies in 20th-Century Spanish Literature.** Discussion, two hours.

Mr. Monleón, Mr. Morris

**277A-277B. Studies in Colonial Spanish-American Literature.** Discussion, two hours.

Ms. Arora

**278A-278B. Studies in 19th-Century Spanish-American Literature.** Discussion, two hours.

**280A-280B. Studies in Contemporary Spanish-American Literature.** Discussion, two hours.

Mr. Luzuriaga

**281. Studies in Chicano Literature.** Discussion, two hours.

Mr. Calderón, Mr. Hernández

**M286A-M286B. Studies in Hispanic Folk Literature.** (Same as Folklore M286A-M286B.) Lecture, two hours.

Ms. Arora

**290. Special Topics.** Lecture, two hours. Variable topics; consult *Schedule of Classes* or department counselor for topics to be offered in a specific term.

**310. Teaching Spanish in Elementary School.** Lecture, three hours.

**370. Teaching Spanish in Secondary School.** Lecture, three hours.

**373. Teaching Composition (2 units).** Prerequisites: graduate standing, consent of instructor. Seminar on teaching writing in Spanish language courses. Introduction to composition theory. Instruction and practice in integrating writing into curriculum, setting goals and standards, designing and sequencing course materials, evaluating and commenting on papers. May not be repeated for credit. S/U grading.

**375. Teaching Apprentices Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495. Teaching Spanish at College Level.** Prerequisite: graduate standing in department. Basic concepts of modern theories of language and language acquisition which underlie modern methods of second language teaching. S/U grading.

**596. Directed Individual Study or Research (4 to 8 units).** Prerequisite: consent of graduate adviser and chair. Study or research in areas or subjects not offered as regular courses. No more than four units may be applied toward M.A. course requirements.

**597. Preparation for Graduate Examinations (4 to 12 units).** Prerequisites: official acceptance of candidacy by department, consent of graduate adviser. Individual preparation for M.A. comprehensive examination or Ph.D. qualifying examinations. May be taken only once for each degree examination and only in term that comprehensive or qualifying examinations are to be taken. S/U grading.

**598. Research for M.A. Thesis (4 to 12 units).** Prerequisite: consent of guidance committee. Research in preparation of M.A. thesis. S/U grading.

**599. Research for Ph.D. Dissertation (4 to 8 units).** Limited to students who have passed Ph.D. qualifying examinations. Research for and preparation of Ph.D. dissertation. S/U grading.

## Portuguese

### Lower Division Courses

No credit is allowed for completing a less advanced course after completion of a more advanced course in grammar and/or composition.

**1. Elementary Portuguese.** Discussion, five hours; laboratory, one hour.

**2. Elementary Portuguese.** Discussion, five hours; laboratory, one hour. Prerequisite: course 1 or equivalent.

**3. Intermediate Portuguese.** Discussion, five hours; laboratory, one hour. Prerequisite: course 2 or equivalent.

**8A-8B. Portuguese Conversation (2 units each).** Discussion, three hours. Prerequisite: course 3 with a grade of B or better.

**25. Advanced Portuguese.** Prerequisite: course 3 or equivalent.

**M35. Spanish, Portuguese, and Nature of Language.** (Same as Spanish M35.) Lecture, three hours. Introduction to language study within context of Romance languages, focusing on Spanish and Portuguese. Nature of language: structure, diversity, evolution, social and cultural settings, literary uses. Study of language and its relation to other areas of human knowledge.

**40A-40B. Portuguese, Brazilian, and African Literature in Translation.** Lecture, three hours. Reading and discussion of selected works in translation. Papers and examinations in English. **40A.** Portuguese and Portuguese-African Literature; **40B.** Brazilian Literature.

**M42. Civilization of Spain and Portugal.** (Same as Spanish M42.) Required of majors. Conducted in English. Highlights of civilization of Spain and Portugal, with emphasis on the artistic, economic, social, and historical development as background for upper division courses. Mr. Cruz-Salvadores, Mr. Johnson

**M44. Civilization of Spanish America and Brazil.** (Same as Spanish M44.) Required of majors. Conducted in English. Highlights of civilization of Spanish America and Brazil, with emphasis on the artistic, economic, social, and historical development as background for upper division courses. Mr. Skirius

**46. Civilization of the Portuguese-Speaking World.** Lecture, three hours. Conducted in English. Topical analysis of cultural history of Brazil, Portugal, and Portuguese-speaking African countries, with emphasis on physical environment, principal historical, social, and economic development, and artistic manifestations. P/NP or letter grading.

### Upper Division Courses

Prerequisite to all upper division courses is Portuguese 25 or consent of instructor.

**100A. Phonology and Morphology.** Lecture, three hours. Analysis of phonetic, phonemic, and morphological systems of Portuguese. Mr. Quicoli

**100B. Syntax.** Lecture, three hours. Review of patterns of the Portuguese language. Mr. Quicoli

**101A. Advanced Reading and Conversation.** Lecture, three hours. Reading and discussion of writings by modern Brazilian and Portuguese authors.

**102A-102B. Intensive Portuguese.** Prerequisite: foreign language experience (other than Portuguese) or consent of instructor. Development of speaking and reading skills equivalent to those covered in three terms of the traditional pattern and to meet special needs of advanced undergraduate and graduate students.

**105. Advanced Composition and Style.** Practice in writing Portuguese with appropriate vocabulary, syntactical structures, and stylistic patterns.

**M118A-M118B. History of Portuguese and Spanish.** (Same as Spanish M118A-M118B.) Lecture, three hours. Prerequisites: courses M35, 100A. Major features of development of Portuguese and Spanish languages from their origins in Vulgar Latin to modern times. **M118A.** Phonology; **M118B.** Morphology and Syntax. Ms. Plann, Mr. Quicoli, Mr. Smith

**120A-120B. Survey of Portuguese Literature.** Lecture, three hours. Introduction to principal periods, currents, and authors of Portuguese literature.

**C124. Medieval Portuguese Literature.** Lecture, three hours. Study of main genres of medieval Portuguese and Galician literature through representative works. May be concurrently scheduled with course C224.

**C125. Renaissance Portuguese Literature.** Lecture, three hours. Study of main genres of Renaissance Portuguese literature, with particular emphasis on the works of Luis de Camoens. May be concurrently scheduled with course C225.

**C126. Baroque and Neoclassical Portuguese Literature.** Lecture, three hours. Study of main genres of baroque and neoclassical Portuguese literature through representative works. May be concurrently scheduled with course C226.

**C127. Romanticism and Realism in Portuguese Literature.** Lecture, three hours. Study of principal features through representative works. May be concurrently scheduled with course C227.

**C128. Post-Romanticism and Naturalism in Portuguese Literature.** Lecture, three hours. Study of principal features through representative works. May be concurrently scheduled with course C228.

**C129. 20th-Century Portuguese Literature.** Lecture, three hours. Study of representative trends and authors. May be concurrently scheduled with course C229.

**130A-130B. Survey of Brazilian Literature.** Lecture, three hours. Introduction to principal periods, currents, and authors of Brazilian literature.

**C131. Colonial Brazilian Literature.** Lecture, three hours. Study of most important authors to 1830. May be concurrently scheduled with course C231.

**C132. Romanticism in Brazilian Literature.** Lecture, three hours. Study of representative trends and authors. May be concurrently scheduled with course C232.

**C133. Naturalism, Realism, and Symbolism in Brazilian Literature.** Lecture, three hours. Study of representative trends and authors. May be concurrently scheduled with course C233.

**C134. 20th-Century Brazilian Literature: Poetry and Drama.** Lecture, three hours. Study of representative trends and authors. May be concurrently scheduled with course C234.

**C135. 20th-Century Brazilian Literature: Novel.** Lecture, three hours. Study of most important Brazilian novelists. May be concurrently scheduled with course C235.

**141. Film and Literature of the Portuguese-Speaking World.** Lecture, three hours. Not open for credit to students with credit for course 197. Topical analysis (conducted in English) of main literary and historical themes of Brazilian culture, through films and literary texts, from colonial beginnings to the present day.

**197. Undergraduate Seminar.** Lecture, three hours. Variable topics course with readings, discussions, and papers; consult *Schedule of Classes* or department counselor for topic to be offered in a specific term.

**199. Special Studies (2 to 4 units).** Prerequisite: consent of adviser and instructor. Eight units may be applied toward the major requirements.

### Graduate Courses

**M200. Research Resources.** (Same as Spanish M200.) Lecture, three hours. Identification and use of research resources for graduate students.

Mr. Benitez, Mr. Smith

**M201A-M201B. Literary Theory and Criticism.** (Formerly numbered M201.) (Same as Spanish M201A-M201B.) Lecture, three hours. Definition, discussion, and application of main currents of contemporary literary theory and criticism. In Progress grading.

**202. Synchronic Morphology and Phonology.** Lecture, three hours. Study of theoretical synchronic linguistics as applied to Portuguese. Mr. Quicoli

**204A-204B. Generative Grammar.** Lecture, three hours. Prerequisite: consent of instructor. Course 204A or consent of instructor is prerequisite to 204B. Generative approach to the Portuguese language, with some consideration of bearing of syntax, semiology, and phonology on style, metaphor, and meter. Mr. Quicoli

**M205A-M205B. Development of Portuguese and Spanish Languages.** (Same as Spanish M205A-M205B.) Lecture, three hours. Intensive study of historical development of Portuguese and Spanish languages from their origin in spoken Latin. Mr. Otero, Mr. Smith

**C224. Medieval Portuguese Literature.** Lecture, three hours. Study of main genres of medieval Portuguese and Galician literature through representative works. May be concurrently scheduled with course C124.

**C225. Renaissance Portuguese Literature.** Lecture, three hours. Study of main genres of Renaissance Portuguese literature, with particular emphasis on works of Luis de Camoens. May be concurrently scheduled with course C125.

**C226. Baroque and Neoclassical Portuguese Literature.** Lecture, three hours. Study of main genres of baroque and neoclassical Portuguese literature through representative works. May be concurrently scheduled with course C126.

**C227. Romanticism and Realism in Portuguese Literature.** Lecture, three hours. Study of principal features through representative works. May be concurrently scheduled with course C127.

**C228. Post-Romanticism and Naturalism in Portuguese Literature.** Lecture, three hours. Study of principal features through representative works. May be concurrently scheduled with course C128.

**C229. 20th-Century Portuguese Literature.** Lecture, three hours. Study of representative trends and authors. May be concurrently scheduled with course C129.

**C231. Colonial Brazilian Literature.** Lecture, three hours. Study of most important authors to 1830. May be concurrently scheduled with course C131.

**C232. Romanticism in Brazilian Literature.** Lecture, three hours. Study of representative trends and authors. May be concurrently scheduled with course C132.

**C233. Naturalism, Realism, and Symbolism in Brazilian Literature.** Lecture, three hours. Study of representative trends and authors. May be concurrently scheduled with course C133.

**C234. 20th-Century Brazilian Literature: Poetry and Drama.** Lecture, three hours. Study of representative trends and authors. May be concurrently scheduled with course C134.

**C235. 20th-Century Brazilian Literature: Novel.** Lecture, three hours. Study of most important Brazilian novelists. May be concurrently scheduled with course C135.

**M249. Folk Literature of the Spanish and Portuguese Worlds.** (Same as Folklore M249 and Spanish M249.) Lecture, three hours. Intensive study of folk literature of the Spanish and Portuguese cultures as represented in (1) ballad and poetry, (2) narrative and drama, (3) speech. Ms. Arora



**M251A-M251B. Studies in Galegan-Portuguese and Old Spanish.** (Same as Spanish M251A-M251B.) Lecture, two hours. Study of problems related to historical development of Galegan-Portuguese and Old Spanish. Mr. Otero, Mr. Smith

**252. Studies in Early Portuguese Literature.** Discussion, two hours.

**253. Studies in Modern Portuguese Literature.** Discussion, two hours.

**254. Studies in Early Brazilian Literature.** Discussion, two hours.

**255. Studies in Modern Brazilian Literature.** Discussion, two hours.

**256A-256B. Studies in Portuguese Linguistics.** Lecture, two hours. Study of problems in analysis and description of the contemporary Portuguese language. Mr. Quicoli

**370. Teaching Portuguese in Secondary School.** For future teachers in this field.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research (4 to 8 units).** Prerequisite: consent of graduate adviser and chair. Study or research in areas or subjects not offered as regular courses. No more than eight units may be applied toward M.A. course requirements.

**597. Preparation for Graduate Examinations (4 to 12 units).** Prerequisites: official acceptance of candidacy by department, consent of graduate adviser. Individual preparation for M.A. comprehensive examination or Ph.D. qualifying examinations. May be taken only once for each degree examination and only in term that comprehensive or qualifying examinations are to be taken. S/U grading.

**598. Research for M.A. Thesis (4 to 12 units).** Prerequisite: consent of guidance committee. Research in preparation of M.A. thesis. S/U grading.

**599. Research for Ph.D. Dissertation (4 to 8 units).** Limited to students who have passed Ph.D. qualifying examinations. Research for and preparation of Ph.D. dissertation. S/U grading.

## Speech

334 Kinsey Hall, (310) 825-3303

### Professors

Neil M. Malamuth, Ph.D. (*Communication Studies*),  
Chair

Donald E. Hargis, Ph.D., *Emeritus*  
Charles W. Lomas, Ph.D., *Emeritus*

### Associate Professors

Paul I. Rosenthal, Ph.D. (*Communication Studies*;  
*Distinguished Teaching Award*)  
Ralph Richardson, Ph.D., *Emeritus*

### Lecturers

Dee Bridgewater, Ph.D.  
Stephen A. Doyle, M.A.  
Marde S. Gregory, M.A. (*Distinguished Teaching Award*)  
Thomas E. Miller, M.A.  
Sonya H. Packer, M.A.

There is no major in speech; however, the following undergraduate courses are offered for interested students.

## Lower Division Courses

**1. Principles of Oral Communication.** Prerequisite: satisfaction of Subject A requirement. Theory and practice of informal public speaking, including selection of content, organization of ideas, language, and delivery; practice in extemporaneous and manuscript speaking; training in critical analysis through reading and listening to contemporary speeches.

**2. Public Speaking and Discussion.** Prerequisite: course 1. Continuation of course 1, with special emphasis on group discussions, panels, symposia, debates, and formal public speaking. Critical analysis of speeches in both contemporary and historical settings.

## Upper Division Courses

**107. Principles of Argumentation.** Analysis of propositions, tests of evidence, briefing. Study of hindrances to clear thinking, ambiguity of terms, and prejudices. Critical analysis of selected argumentative speeches. Mr. Miller

**144. Speech and Community Action.** Prerequisite: consent of instructor. Intensive laboratory-based, observation-oriented study of speech and communication practices of action groups, protest groups, and public officials involved with the metropolitan Los Angeles urban crises. Mr. Richardson

**175. Speeches of Abraham Lincoln.** Introduction to full span of Lincoln's speaking career. His methods of preparation, influence of associates, his style, his delivery, and lastly, his effect on the nation. Mr. Richardson (W)

**190A-190B. Forensics (2 units each).** Prerequisite: consent of instructor. May be repeated once for credit. Mr. Miller

**191. Analysis and Briefing (2 units).** Intensive study of selected political or social issues; preparation of bibliography; analysis and evaluation of issues and arguments. May be repeated once for credit. Mr. Miller

**197. Proseminar: Rhetoric.** Prerequisite: senior standing or consent of instructor. Variable topics course involving intensive study of discourse associated with a single major issue or personality.

**199. Special Studies (2 to 4 units).** Prerequisites: senior standing, consent of instructor.

## Study of Religion

See Religion, Study of

## Teacher Education

See Diversified Liberal Arts and Education

# Teaching English as a Second Language and Applied Linguistics

3300A Rolfe Hall, (310) 206-1985

### Professors

Roger W. Andersen, Ph.D.  
Lyle Bachman, Ph.D.  
Marianne Celce-Murcia, Ph.D. (*Distinguished Teaching Award*)  
Elinor Ochs, Ph.D.  
John H. Schumann, Ed.D., *Chair*  
Russell N. Campbell, Ph.D., *Emeritus*  
Evelyn R. Hatch, Ph.D., *Emerita*  
Clifford H. Prator, Ph.D., *Emeritus*  
Earl J. Rand, Ph.D., *Emeritus*

### Assistant Professor

Asif Agha, Ph.D.

### Lecturers

Donna Brinton, M.A.  
Janet Goodwin, M.A. (*Luckman Distinguished Teaching Award*)  
Christine Holten, M.A.  
Linda Jensen, M.A.

## Scope and Objectives

The Teaching English as a Second Language and Applied Linguistics Department offers a program designed for students who wish to develop research skills related to the teaching and learning of English as an additional language. The program is a two-year course of graduate study leading to a Master of Arts degree.

The first year of the program is designed to improve teachers' performance in the ESL classroom. The second year provides opportunity to investigate in depth some particular aspect of teaching and learning English as a second language. The course of study includes a practical element: observing classes, preparing lesson plans, and actual classroom teaching. There is, however, greater emphasis on theory in the program. Students are expected to become familiar with current theories regarding the nature of language, as well as the ways in which people acquire and use language. They are also expected to be able to relate theoretical guidelines to practical procedures. The program is therefore not appropriate for the student who is interested exclusively in receiving vocational training. Admission preference is granted to applicants with strong research interests.

In addition, the Department of Teaching English as a Second Language and Applied Linguistics and the Department of Linguistics offer an interdepartmental degree program leading to a Ph.D. in Applied Linguistics. For information, write to the Applied Linguistics Program, 3300A Rolfe Hall, UCLA, Los Angeles, CA 90024-1531. (Also

see the section on Applied Linguistics earlier in this chapter.)

A limited number of teaching assistantships are available to qualified M.A. and Ph.D. students. For information and applications, write to the Academic Director, ESL Service Courses, 3312 Rolfe Hall, UCLA, Los Angeles, CA 90024-1531.

## Master of Arts in Teaching English as a Second Language (TESL)

### Admission

Students normally apply for the M.A. in TESL if they desire advanced training in the field. Because of the sequential nature of courses given during the first year, students are admitted only for Fall Quarter. To be admitted to the M.A. program, U.S. citizens and students from other countries must have the equivalent of an American bachelor's degree.

After admission, you must maintain a grade-point average of at least B (3.0). A GPA of 3.25 (B+) is required in order to continue into the second year of the M.A. program and must be maintained throughout the second year.

Applications for admission may be obtained from the graduate adviser and are due by December 15 of the year prior to admission. The program requires three letters of recommendation in support of the application. You are requested to submit the letters of recommendation directly to the Graduate Adviser, Department of Teaching English as a Second Language and Applied Linguistics, 3300A Rolfe Hall, UCLA, Los Angeles, CA 90024-1531. Since admission is limited to approximately 25 students per year, it is important that supporting papers be submitted by January 15.

The admissions committee screens all applications, using the following criteria: grade-point average (must be 3.0 or better), Graduate Record Examination (GRE) scores, letters of recommendation, statement of purpose, and relevant research paper. A personal interview is not required for admission. The statement of purpose should contain the following information: (1) reasons for wishing to study TESL at UCLA; (2) special qualifications and experience as a teacher; (3) knowledge of languages other than English; and (4) knowledge of other cultures.

All international students who are nonnative speakers of English must submit the results of the Test of English as a Foreign Language (TOEFL) as part of the application process. International students who hold a bachelor's or higher degree from a university in a country where the official language is English and in which English is the spoken tongue and the medium of instruction, or who have completed at least two years of full-time study at such an institution, are exempt from the UCLA English as a Second Language Placement Examination (ESLPE).

### Foreign Language Requirement

Students whose native language is English generally use their Fall and Winter Quarter electives to acquire or perfect knowledge of the native language or dialect of the pupils to whom they expect to teach English. This can be done by taking any one of three combinations of two courses: (1) two foreign language courses; (2) one foreign language course plus a corresponding course in the Linguistics 220 or 225 series; (3) Teaching English as a Second Language and Applied Linguistics 227 plus an unrestricted elective.

Those particularly interested in working with Mexican American, Asian American, or American Indian pupils normally choose the third of these alternatives. When there is doubt as to which language is most appropriate, a non-European language should be selected because of the greater broadening of linguistic horizons that such a selection offers. Foreign language courses that deal with linguistic structure should be selected whenever possible.

Nonnative speakers of English, depending on the results of the UCLA English as a Second Language Placement Examination (ESLPE), may be required to take a course to improve their practical command of English.

Exemption from the foreign language requirement may be granted if you can demonstrate a strong need to take other electives and have an unusually extensive background of previous foreign language study. For more information, contact the graduate adviser.

### First-Year Curriculum

The typical course of study for the first year of the M.A. program is as follows:

- Fall Quarter: Teaching English as a Second Language and Applied Linguistics 209 or 249, 370, foreign language requirement or elective (course depends on language requirement plan)
- Winter Quarter: Course 122, foreign language requirement or elective (course depends on language requirement plan)
- Spring Quarter: Courses 106 or 107 or 109, 241, 380, 103 or Linguistics 103

Exceptions to the above requirements are made only after consultation with the graduate adviser.

Of the nine courses required the first year, at least seven must be in TESL and applied linguistics, linguistics, or structure of language courses in language departments.

Successful completion of the above courses qualifies students for a TESL certificate (which is not a California State Instructional Credential).

### Teaching Experience

One term of supervised teaching (Teaching English as a Second Language and Applied Linguistics 380) is required during the first year unless you have had extensive teaching experience. If this requirement is completed at UCLA in an adult education setting, you are eligible for the California Adult Education Credential in ESL (call 310-825-4581 for more information). The California Basic Educational Skills Test is required of all applicants for the credential.

### Second-Year Curriculum

A total of 14 courses is required for the M.A. degree, including a minimum of four 200-series courses. Four of the nine courses taken during the first year (usually Teaching English as a Second Language and Applied Linguistics 122, 209 or 249, 241, and 103 or Linguistics 103) and, in special cases, two of the electives (100 or 200 series only) may be applied toward the University's nine-course minimum requirement for master's degrees. This leaves five courses, at least two of which must be at the graduate level, to be completed in consultation with the graduate adviser during the second year.

Eight units of 500-series courses may be applied toward the M.A. degree, but only four units may be applied toward the graduate course requirement. You must enroll in course 598 each term you are registered; however, only four units may be applied toward the degree (to be taken either in Spring Quarter of your first year or Fall Quarter of your second year).

Course 400 is a seminar in which TESL M.A. candidates present and defend the results of their thesis research. Enrollment is required in Spring Quarter but does not count as one of the 14 courses required for the M.A.

The electives taken during your second year should be selected, in consultation with the faculty M.A. adviser and the chair of your thesis committee, as a sequence of related courses relevant to your thesis topic. Any changes in the program must be approved by both the committee chair and the M.A. adviser.

### Thesis Plan

By the end of the fourth term, your thesis proposal, signed by two faculty members, is submitted to the faculty. At this time, plans for the thesis are approved and the thesis committee is established.

### Upper Division Courses

**101. Introduction to Language Learning and Language Teaching.** Lecture, two hours; discussion, two hours. Prerequisite: Linguistics 1 or consent of instructor. Exploration of skills and conditions involved in successful second and foreign language learning; application of this knowledge in development of framework for teaching second and foreign languages. P/NP or letter grading.

Ms. Celce-Murcia (Sp)

**103. Phonetics for Teachers of English as a Second Language.** (Formerly numbered English 103K.) Prerequisite: consent of instructor. Analysis of phonological structure of contemporary English, with attention to differences between British and American speech. Drill directed toward individual needs.

Ms. Brinton, Ms. Goodwin, Ms. Jensen

**106. Writing in the ESL Context.** (Formerly numbered English 106K.) Provides opportunities for practice and improvement in writing skills and thus fulfills composition requirement for TESL M.A. degree. Survey of important theoretical and methodological issues related to teaching writing/composition to ESL students and examination of appropriate classroom materials and authentic student compositions.

Ms. Holtzen (F)

**107. Reading in the ESL Context.** (Formerly numbered English 107K.) Provides opportunities for practice and improvement in reading and writing skills and thus fulfills composition requirement for TESL M.A. degree. Survey of important theoretical and methodological issues related to teaching reading and writing to ESL students and examination of appropriate classroom materials.

Ms. Jensen (W)

**109. Literature in the ESL Context.** (Formerly numbered English 109K.) Provides opportunities for practice and improvement in writing skills and thus fulfills composition requirement for TESL M.A. degree. Survey of important theoretical and methodological issues related to teaching literature to ESL students and examination of appropriate classroom materials. Strong emphasis on the cultural basis for literature.

Ms. Brinton (Sp)

**122. Introduction to Structure of Present-Day English (for Teachers of English as a Second Language).** (Formerly numbered English 122K.) Lecture, three hours; discussion, one hour. Prerequisite: Linguistics 20 or consent of instructor. Introductory study of those grammatical structures of English most important in ESL classroom. Aims to provide insights from traditional, structural, and particularly transformational grammar.

Ms. Celce-Murcia (W)

**189. Metaphor and Literal Speech.** Lecture, two hours; discussion, one hour. Prerequisites: Linguistics 1 or equivalent and consent of instructor. Taking an interdisciplinary perspective, examination of systematicity of form and function peculiar to human language that underlies dichotomy between (1) neutral or literal capacity of language and (2) a metaphoric capacity. P/NP or letter grading.

Mr. Agha, Ms. Celce-Murcia

## Graduate Courses

All graduate courses are open to qualified graduate students from other departments with consent of department.

**209. Current Issues in Experimental Design and Statistics for Applied Linguistics.** (Formerly numbered English 209K.) Specialized topics of interest to graduate students in TESL and applied linguistics. Emphasis varies according to current theoretical methodological trends in the field.

Mr. Bachman (F,Sp)

**220. Materials Development for Language Teaching.** (Formerly numbered English 220K.) Prerequisites: course 370, at least two years of ESL/EFL teaching experience. Planning and preparation of an original set of language teaching materials geared to needs of a specified group of learners. Revision of first drafts and evaluation of one's own work and that of one's peers.

Ms. Celce-Murcia (Sp)

**221. Media for Language Teaching.** (Formerly numbered English 221K.) Rationale and pedagogical application for using media equipment and materials in the language classroom. Training in standard classroom media equipment operation and basic materials production techniques, focusing on application to ESL instruction.

Ms. Brinton (W)

**222. Language Testing for Teachers of English as a Second Language.** (Formerly numbered English 222K.) Prerequisites: course 370, Linguistics 20. Theories and techniques for language assessment across the skill areas. Emphasis on classroom testing and functions of testing within a language program. Basic statistical concepts and hands-on experience with construction of language tests.

Mr. Bachman (W or Sp)

**225. Program Evaluation in Applied Linguistics.** (Formerly numbered English 225K.) Evaluation of effectiveness of ESL curriculum and instruction, including assessment of teacher behavior. Prevalent evaluation theories, writing of evaluation proposals, developing program monitoring procedures, selecting appropriate evaluation design plans, framing the decision context, and reporting evaluation results.

**227. Experiential Seminar: Second Language Learning.** (Formerly numbered English 227K.) Lecture, one hour; laboratory, four hours. Prerequisite: graduate standing. Students learn an uncommonly taught language with use of authentic language materials (video and audio recordings and print material). Discussion of experience in terms of issues in language learning and language teaching.

Mr. Andersen (Sp)

**229. Current Issues in Language Education.** (Formerly numbered English 229K.) Specialized topics in language education of interest to graduate students in TESL and applied linguistics. Emphasis varies according to current topics of theoretical concern in the field.

Ms. Celce-Murcia, Mr. Rand

**232. Advanced Seminar: Construction and Administration of Language Tests.** (Formerly numbered English 232K.) Prerequisite: course 222 or consent of instructor. Designed to explore current issues in language testing research from both theoretical and practical perspectives and to provide actual experience in addressing a current issue. Specific topics vary according to trends in the field.

Mr. Bachman (F)

**241. Interlanguage Analysis.** (Formerly numbered English 241K.) Lecture, three hours; discussion, one hour. Prerequisites: course 370, Linguistics 20. Hands-on project-oriented introduction to research on interlanguage, the language of second language speakers. Theoretical and methodological aspects of linguistic research on second language acquisition. Research paper combining qualitative and quantitative research techniques required.

Mr. Andersen (W)

**249. Current Issues in Language Analysis.** (Formerly numbered English 249K.) Specialized topics in language analysis of interest to graduate students in TESL and applied linguistics. Emphasis varies according to current topics of theoretical import in the field.

Mr. Andersen, Ms. Celce-Murcia, Mr. Schumann

**250. Advanced Seminar: Cohesion Analysis of English Structure.** (Formerly numbered English 250K.) Prerequisite: course 122 or consent of instructor. Investigation in depth of selected linguistic features of oral and written texts that go beyond sentence level and thus signal cohesion. Study of structures to determine their function in a variety of English texts representing several discourse types.

Ms. Celce-Murcia (F)

**251. Advanced Seminar: Interlanguage Analysis.** (Formerly numbered English 251K.) Prerequisite: course 241. Analysis of interlanguage from various points of view (e.g., topic-comment structure, tense, aspect, modality, thematic structure of utterances), with aim of understanding how interlanguage is organized. Original research projects.

Mr. Andersen, Mr. Schumann (W,Sp)

**252. Advanced Seminar: Contextual Analysis of English Structure.** (Formerly numbered English 252K.) Prerequisite: course 122 or consent of instructor. Examination of selected words and structures in oral and written English texts to determine when and why the word or structure occurs. Emphasis on factors such as meaning, discourse genre, social/pragmatic function, and relative frequency. However, starting point in analysis is syntax (i.e., what are the structural properties — form, distribution — of word(s) or structure(s) under consideration?).

Ms. Celce-Murcia (F)

**258. Laboratory: Advanced Topics in Language Assessment.** Prerequisite: consent of instructor. Collaborative coursework, with focus on specific theoretical and applied issues in development of innovative language assessment procedures for use in real-world settings. Specific projects determined by research being conducted by the working group in language assessment. Activities include designing and developing measurement instruments, gathering and analyzing data, and interpreting and reporting results. May be repeated for credit. S/U grading.

Mr. Bachman

**260. Psycholinguistics and Language Teaching.** (Formerly numbered English 260K.) Prerequisites: course 370 and Linguistics 20, or consent of instructor. Exploration of those areas of psycholinguistics covering foreign language acquisition; types and theories of bilingualism; learning theories underlying current methods of teaching foreign languages.

Mr. Schumann

**261. Second Language Acquisition.** (Formerly numbered English 261K.) Prerequisite: consent of instructor. Review of literature on child and adult second language acquisition. Language variables (phonological, morphological, sentential, and discourse levels) and social and psychological variables which may account for differences in learning.

Mr. Andersen, Mr. Schumann (F)

**269. Current Issues in Language Acquisition.** (Formerly numbered English 269K.) Specialized topics in language acquisition of interest to graduate students in TESL and applied linguistics. Emphasis varies according to current topics of theoretical concern in the field.

Mr. Andersen, Mr. Schumann

**271. Cross-Linguistic Topics in Second Language Acquisition.** (Formerly numbered English 271K.) Lecture, one hour; discussion, three hours. Prerequisites: course 261, Linguistics 20. Advanced seminar on second language acquisition in which a particular linguistic topic (e.g., development of tense-aspect, reference, subordination, agreement) is pursued from cross-linguistic and cross-disciplinary perspectives. Focus on language-specific vs. universal (i.e., cross-linguistically valid) mechanisms of second language development. Readings from research on a variety of languages in second language acquisition and related research on first language acquisition, pidgins and creoles, language contact, and language loss. May be repeated for credit with topic change.

Mr. Andersen (Sp)

**283. Discourse Analysis.** (Formerly numbered English 283K.) Survey course covering language teaching and discourse analysis; discourse analysis and syntax; planned and unplanned discourse; conversational analysis; analysis of speech events; unequal power discourse; and analysis of classroom discourse.

Ms. Ochs (F)

**284. English for Specific Purposes.** (Formerly numbered English 284K.) Study of methodologies for needs analysis, curriculum development, and testing for specific academic, professional, and vocational groups who require English as a foreign or second language.

**285. Language Socialization.** Prerequisite: course 283. Exploration of process of socialization through language and socialization to use language across the life span, across communities of practice within a single society, and across different ethnic and socio-economic groups. Ways in which verbal interaction between novices and experts is structured linguistically and culturally.

Ms. Ochs

**288. Discourse Laboratory.** Laboratory, three hours; fieldwork or research, approximately 10 hours. Prerequisites: courses 249, 283, two other discourse analysis courses, doctoral standing in applied linguistics. Advanced procedures in data analysis in the field of discourse analysis, including development of a large-scale research program and critical review of current research.

Mr. Agha, Ms. Celce-Murcia, Ms. Ochs

**289. Current Issues in Language Use.** (Formerly numbered English 289K.) Specialized topics in language use and related areas of interest to graduate students in TESL and applied linguistics. Emphasis varies according to current topics of concern in the field.

Ms. Ochs

**370. Teaching English as a Second Language.** (Formerly numbered English 370K.) Lecture, six hours. Prerequisite: consent of instructor. Bibliography, survey, and evaluation of methods and materials. Nature of language learning. Analysis of differences between two languages as a basis of instruction. (F)

**375. Teaching Apprentice Practicum (1 to 4 units).** (Formerly numbered English 375K.) Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

Ms. Goodwin, Ms. Holten, Ms. Jensen (F,W,Sp)

**380. Supervised Teaching: English as a Second Language or Dialect.** (Formerly numbered English 380K.) Prerequisite: course 370. Team teaching at elementary, secondary, or adult level under supervision of a senior staff member. S/U grading.

Ms. Brinton, Ms. Goodwin, Ms. Holten (Sp)

**400. TESL Colloquium.** (Formerly numbered English 400K.) Prerequisite: consent of TESL M.A. adviser. M.A. candidates present and defend results of their thesis research. Required of all candidates but may not be applied toward M.A. degree requirements. Candidates for Ph.D. in Applied Linguistics may also use this course to report on their dissertations. S/U grading. (Sp)

**495. Training and Supervision of Teaching Assistants (2 units).** (Formerly numbered English 495K.) Lecture, two or more hours. Corequisite: appointment as a teaching assistant. Orientation, preparation, and supervision of graduate students who have responsibility for teaching ESL courses at UCLA. Syllabus revision and materials preparation. May not be applied toward degree requirements for M.A. or certificate in TESL or Ph.D. in Applied Linguistics. S/U grading. (F)

**501. Cooperative Program (2 to 8 units).** (Formerly numbered English 501K.) Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study.** (Formerly numbered English 596K.) Prerequisite: graduate standing. Independent study in an area related to English as a second language. May not be repeated for credit.

**598. M.A. Research and Thesis Preparation (4 to 8 units).** (Formerly numbered English 598K.) Prerequisite: graduate standing. Survey of research needs and thesis preparation. Includes optional section on experimental design and statistical methods in Fall Quarter. Credit (four units) toward degree is allowed only once, but all M.A. candidates must enroll in course each term they are registered and engaged in thesis preparation. S/U grading. (F,Sp)

## English as a Second Language (ESL) Service Courses

3308 Rolfe Hall, (310) 825-4378

Courses 32, 33A, 33B, 33C, 34, 35, 36, 103, 106, 107, 109 are only for students whose native language is not English. Placement in these courses is established on the basis of the UCLA English as a Second Language Placement Examination (ESLPE), which students whose native language is not English must take in addition to the Subject A Examination (see "Subject A" in Chapter 2).

Depending on the results of this examination, you may either be exempt from any special ESL requirement or may be required to take one or more courses. You are placed into the ESL track at a particular level and must enroll in one ESL course each term, beginning in your first term in residence at UCLA, until the sequence is completed. The required sequence for undergraduates is English as a Second Language 33A, 33B, 33C, and 35; each course must be passed with a grade of C or better (C- or a Passed grade is not acceptable). The required sequence for graduate students is English as a Second Language 33A, 33B, and 33C; each course must be passed with a grade of C or better if taken for a letter grade, or B or better if taken on an S/U basis. If you do not achieve a minimum score on the placement examination, you may be required to spend a term studying elementary English exclusively, through UCLA Extension, before retaking the ESLPE and continuing through the appropriate sequence of courses at UCLA.

Undergraduates may satisfy the English Composition requirement by completing course 36 with a grade of C or better (C- or a Passed grade is not acceptable). Admission into course 36 is determined by a Composition Placement Test administered the first day of class each term.

## Lower Division Courses

**32. Oral Communication Skills for ESL Students.** (Formerly numbered English 32.) Prerequisite: grade of C or better in course 33B or proficiency demonstrated on English as a Second Language Placement Examination. Course 33C may be taken concurrently. Develops oral skills that prepare nonnative speakers of English to participate in class discussion, make oral presentations before an audience, ask and answer questions, participate appropriately in conversations with members of the academic community, and improve through self-evaluation of speech. P/NP (undergraduates), S/U (graduates), or letter grading.

**33A. Low Intermediate English as a Second Language.** (Formerly numbered English 33A.) Recitation, eight hours; laboratory, two hours. Prerequisite: grade of C or better in Extension course XL832 or proficiency demonstrated on English as a Second Language Placement Examination. Displaces eight units on student's Study List but yields only four units of credit toward a degree. Intensive instruction in structure of English, with focus on vocabulary building, listening and speaking skills, and basic composition techniques.

**33B. High Intermediate English as a Second Language.** (Formerly numbered English 33B.) Recitation, five hours. Prerequisite: grade of C or better in course 33A or proficiency demonstrated on English as a Second Language Placement Examination. Emphasis on reading comprehension, vocabulary development, and composition techniques, with additional work on structure and oral skills.

**33C. Advanced English as a Second Language.** (Formerly numbered English 33C.) Recitation, five hours. Prerequisite: grade of C or better in course 33B or proficiency demonstrated on English as a Second Language Placement Examination. Emphasis on academic reading, writing, study skills, and lecture comprehension.

**34. Advanced Oral Communication Skills for ESL Students.** (Formerly numbered English 34.) Prerequisite: grade of C or better in course 33C or proficiency demonstrated on English as a Second Language Placement Examination. Develops oral skills that prepare nonnative speakers of English to present ideas extemporaneously, lead class discussions, give lectures or speeches before an audience, respond to questions posed by the audience, and improve through self-evaluation of speech. P/NP (undergraduates), S/U (graduates), or letter grading.

**35. Developmental Composition for ESL Students.** (Formerly numbered English 35.) Prerequisite: grade of C or better in course 33C or proficiency demonstrated on English as a Second Language Placement Examination. Developmental composition skills for ESL students, with focus on the writing process, grammatical structures, mechanics of writing, and practice with major forms of academic writing. Additional emphasis on academic reading skills.

**36. Intermediate Composition for ESL Students.** (Formerly numbered English 36.) Prerequisites: grade of C or better in course 35 (33C for graduate students) or proficiency demonstrated on English as a Second Language Placement Examination, and an appropriate Composition Placement Test score. Focus on major rhetorical techniques found in academic writing. Special attention to individual research, grammatical structures, and style.

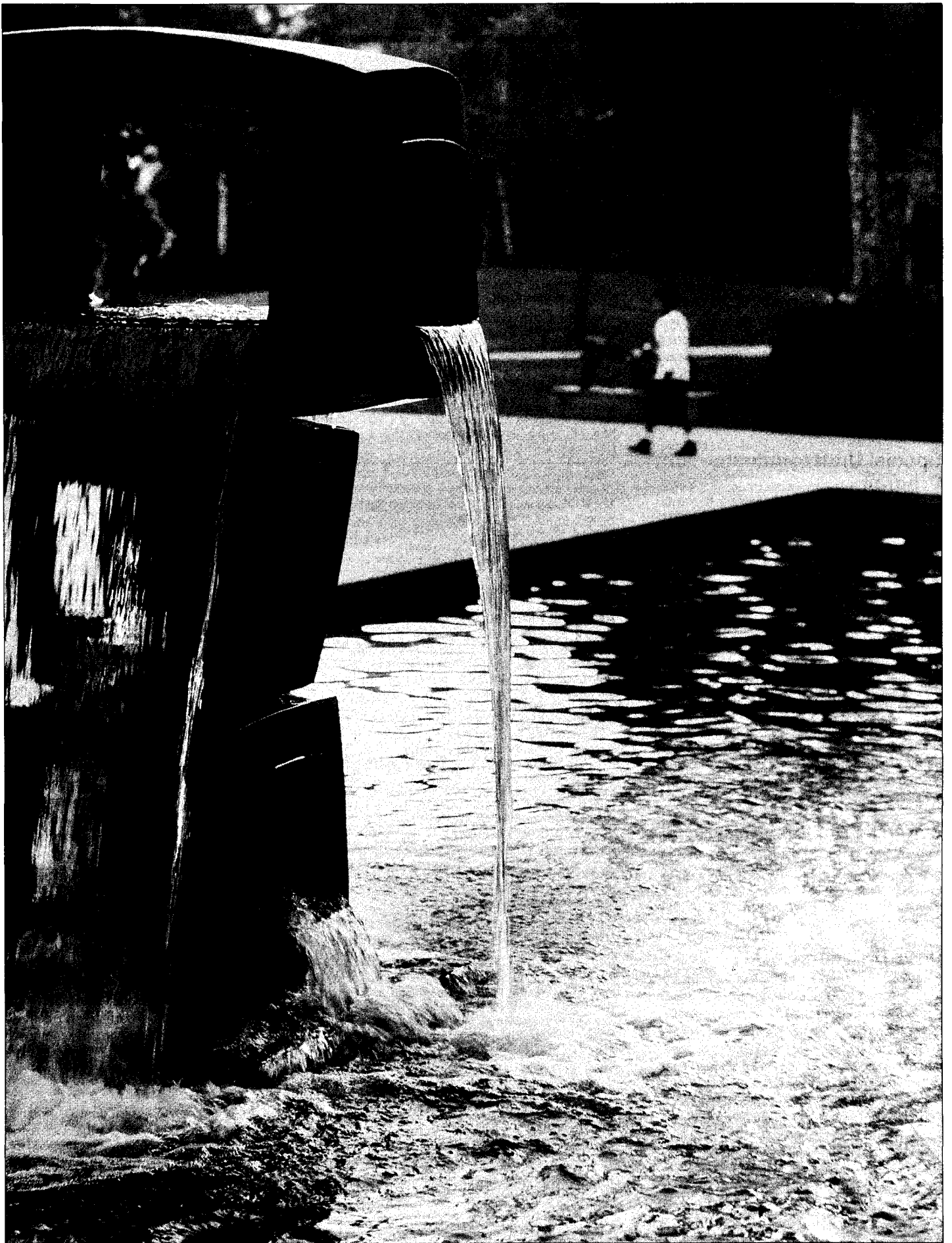
## Upper Division Courses

**103. Pronunciation for ESL Students.** (Formerly numbered English 103J.) Prerequisite: grade of C or better in course 33C or proficiency demonstrated on English as a Second Language Placement Examination. Detailed and systematic study of the sounds of American English and way in which they are put together in connected speech, applied to improvement of student's own accent. Ms. Brinton, Ms. Goodwin

**106. Advanced Composition for ESL Students.** (Formerly numbered English 106J.) Prerequisites: grade of C or better in course 36 or proficiency demonstrated on English as a Second Language Placement Examination, and an appropriate Composition Placement Test score. Focus on production of fully developed, stylistically sophisticated expository and argumentative essays based on complex academic readings. Additional emphasis on grammatical structure and style. Ms. Holten

**107. Advanced Reading and Vocabulary for ESL Students.** (Formerly numbered English 107J.) Prerequisite: grade of C or better in course 33C or proficiency demonstrated on English as a Second Language Placement Examination. Instruction in and practice of academic reading skills using authentic university texts. Focus on improving reading rate and comprehension, expanding academic vocabulary, and developing critical reading skills. Ms. Jensen

**109. Introduction to Literature for ESL Students.** (Formerly numbered English 109J.) Prerequisite: grade of C or better in course 33C or proficiency demonstrated on English as a Second Language Placement Examination. Selections from English and American literature presented so as to make full allowance for students' linguistic and cultural problems and to contribute to increasing command of the English language. Ms. Brinton



## Urban Studies (Interdepartmental)

4256 Bunche Hall, (310) 825-3862

### Scope and Objectives

Cities are multifaceted and can usefully be explored from more than one disciplinary perspective. The undergraduate specialization in urban studies brings together students and faculty from the Departments of Economics, Geography, History, Political Science, Psychology, and Sociology who share an interest in the modern city. The program gives students a solid grounding in the urban perspectives and methods of at least two departments. The specialization must be taken in conjunction with a major in the social sciences.

### Special Undergraduate Program

You may elect to combine this program with a departmental major and may petition to have the area of specialization recognized with the bachelor's degree.

The option of completing an individual major in urban studies is also open to qualified students. For more information on individual majors, see the beginning of Chapter 5.

If you have a departmental major, you should seek advising in your major department. If you are interested in the individual major, consult a Letters and Science counselor.

Courses within the specialization must be taken for a letter grade. The specialization must be taken in conjunction with a major in the division of social sciences.

### Preparation for the Specialization

*Required:* At least five of the following courses appropriate to the courses to be taken in the specialization: Economics 1, 2; Geography 4; Political Science 40; Psychology 10; Sociology 1, 18, 104 or equivalent.

### Upper Division

*Required:* Nine upper division courses, including (1) at least three courses outside your major department selected from Anthropology 167, Economics 120, Geography 150, Psychology 168, Sociology 158; (2) a minimum of three courses selected from one of the following suites within your major department: Economics 121, 130, 133; Geography 150, 151, 156; History 154A, 154B, 154C, 154D; Political Science 181, 183A, 183B; Psychology 127, 135; Sociology 132, 156, 160; (3) a minimum of three courses selected from one of the suites in item 2 in a department outside your major department; (4) internship experience in an urban governmental or community service organization.

Professor Eric Monkkonen (9252 Bunche Hall, 310-825-3376) is the program adviser. For further information, contact the political science undergraduate counselor in the program office.

## Women's Studies (Interdepartmental)

240 Kinsey Hall, (310) 206-8101

### Professors

Paula Gunn Allen, Ph.D. (*English*)  
Edward A. Alpers, Ph.D. (*History*)  
Helen S. Astin, Ph.D. (*Education*)  
Francesca Bray, Ph.D. (*Anthropology*)  
Ellen DuBois, Ph.D. (*History*)  
N. Kathryn Hayles, Ph.D. (*English*)  
Nancy M. Henley, Ph.D. (*Psychology*)  
Nikki Keddie, Ph.D. (*History*)  
Kathleen L. Komar, Ph.D. (*German; Distinguished Teaching Award*)  
Christine A. Littleton, J.D. (*Law*), *Director*  
Neil M. Malamuth, Ph.D. (*Communication Studies*)  
Anne K. Mellor, Ph.D. (*English*)  
Carrie J. Menkel-Meadow, J.D. (*Law*)  
Regina Morantz-Sanchez, Ph.D. (*History*)  
Carole Pateman, D.Phil. (*Political Science*)  
L. Anne Peplau, Ph.D. (*Psychology*)  
Karen B. Sacks, Ph.D. (*Anthropology*)

### Associate Professors

Emily K. Abel, Ph.D. (*Health Services*)  
Ann L.T. Bergren, Ph.D. (*Classics; Distinguished Teaching Award*)  
Ruth Bloch, Ph.D. (*History*)  
King-Kok Cheung, Ph.D. (*English*)  
M. Nicolette Hart, Ph.D. (*Sociology*)  
Katherine C. King, Ph.D. (*Classics; Luckman Distinguished Teaching Award*)  
Nancy E. Levine, Ph.D. (*Anthropology*)  
Valerie J. Matsumoto, Ph.D. (*History*)  
Vickie M. Mays, Ph.D. (*Psychology*)  
Sara Melzer, Ph.D. (*French*)  
Ruth H. Milkman, Ph.D. (*Sociology*)  
Kathryn Norberg, Ph.D. (*History*), *Chair*  
Vilma Ortiz, Ph.D. (*Sociology*)  
Karen E. Rowe, Ph.D. (*English; Distinguished Teaching Award*)  
Miriam Silverberg, Ph.D. (*History*)  
Valerie A. Smith, Ph.D. (*English*)  
Sharon Traweek, Ph.D. (*History*)

### Assistant Professors

Jayne E. Lewis, Ph.D. (*English*)  
Marcyliena H. Morgan, Ph.D. (*Anthropology*)  
Carole E. Newlands, Ph.D. (*Classics*)  
Nadine R. Peacock, Ph.D. (*Anthropology*)  
Sonia Saldivar-Hull, Ph.D. (*English*)  
Brenda Stevenson, Ph.D. (*History*)  
Mariko Tamanoi, Ph.D. (*Anthropology*)

### Lecturers

Sue Levi Ellwell, Ph.D. (*Near Eastern Languages and Cultures*)  
Linda Garnets, Ph.D. (*Psychology*)  
Sondra Hale, Ph.D. (*Anthropology; Luckman Distinguished Teaching Award*)  
Eloise Klein Healy, M.F.A. (*English*)

### Adjunct Associate Professor

Jacqueline D. Goodchilds, Ph.D. (*Psychology*)

## Scope and Objectives

The Women's Studies Program, established in 1975, is an interdisciplinary academic program spanning departments, disciplines, and ideologies and offering two options for study: an undergraduate major and a specialization. Students wishing to focus their studies on multidisciplinary perspectives in order to create a coherent and comprehensive analysis of women and gender may elect the major. Those wishing to enhance study in a traditional discipline may elect the women's studies specialization in addition to a major in their chosen discipline.

The program offers the singular opportunity to study the full range of human experience and arrangements of social organization from the perspectives of those whose participation has been traditionally distorted, omitted, neglected, or denied — women in their racial, class, and sexual diversity. Students develop critical reasoning and analytical skills, research and communication skills, a deep appreciation for complexities of power, asymmetries in gender relations across time, class, and cultures, and conceptual tools for social change. Strong emphasis on multidisciplinary and multiethnic approaches assures a broader exposure to the humanities and social sciences than is commonly available within disciplinary confines. A background in women's studies offers unique contextual validation for today's woman and prepares students for a wide range of career and life choices, as well as for advanced study in traditional disciplines and the professions.

The field of women's studies has exploded over the past 25 years. It has developed a theoretical base, body of knowledge, and perspective which cannot be attained as a by-product of studying other fields. Where the study of women has been neglected or omitted, the field develops new knowledge through research and fills in gaps in the existing curriculum. Further, women's studies generates new perspectives on existing knowledge of women and gender, offers a critique of accepted beliefs and ideas, intellectually challenges existing structures of knowledge, and introduces new conceptual paradigms.

The core faculty members who teach women's studies courses come from various UCLA departments and professional schools. Many professionals within and outside the University contribute their time, expertise, and enthusiasm. A women's studies committee composed of the director, faculty members, and a student representative sets program policies and curricula.

The program sponsors a Student Association and assists other student groups with extra-curricular programming on feminist issues. Research in women's studies is promoted in cooperation with the Center for the Study of Women. A library of information related to women's studies is housed in the program office.

While no formal graduate program exists at UCLA at this time, graduate students are invited to use the program's resources, attend lectures and events, and participate in the feminist research seminar sponsored by the center.

## Requirements for the Undergraduate Programs

### Admission

To be admitted to either the major or specialization, you must have completed Women's Studies 10, be in good standing, and formally register with the program. You are encouraged to declare your major or specialization as early as possible and to discuss your proposed course of study with the director or undergraduate adviser.

You are encouraged to draw on the University's diverse resources in creating your major or specialization program. You may pursue traditional and/or innovative subjects in fields ranging from the humanities and fine arts to the social and life sciences. In addition to courses on the women's studies approved list, you may petition to have diverse courses accepted, including courses outside the College of Letters and Science, independent studies, or field study courses.

## Bachelor of Arts in Women's Studies

The interdisciplinary major in women's studies may be taken alone or in conjunction with another Letters and Science major. In the case of a double major, no more than five courses may be applied toward both majors.

All courses applied toward the major must be taken for a letter grade, and you must have a GPA of 2.0 or better in women's studies courses to receive credit for completing the program. Courses in which you receive a grade below C may not be applied toward the major.

### Preparation for the Major

*Required:* Women's Studies 10. You must also complete departmental lower division prerequisites, as applicable, for upper division women's studies courses in the disciplines.

### The Major

The major is designed to (1) impart core concepts in theory and critical analysis, research design, and methods, (2) provide exposure to a range of feminist scholarship across disciplines, and (3) enable you to acquire a depth of knowledge within one or two disciplinary or topical fields of inquiry. To achieve this goal, the major is divided into three categories.

*Required:* At least 13 upper division courses as follows:

(1) Three *core* courses, including one course from Women's Studies 110A through M110D, one course on the study of American ethnic minority women from the approved list of women's studies credit courses issued each term by the program, and course 197 (departmental 197 courses may not be applied).

(2) At least four *distribution* courses, each from different departments or disciplines, selected from the approved list of women's studies courses.

(3) Six additional *concentration* courses from one or two of the disciplines in which your core and distribution courses have been taken. You may petition for interdisciplinary or topical concentrations such as feminist theory, women of color, women's health, or lesbian studies.

For the purpose of the ethnic studies requirement and the distribution requirement, appropriate Council on Educational Development (CED), field studies, and Women's Studies courses may be applied. Four units of Women's Studies 199 may be applied toward either the distribution or concentration requirement for the major (departmental 199 courses are not affected by this limit).

### Honors Program

The honors program is open to senior women's studies majors with a 3.0 grade-point average in women's studies courses and a minimum 3.0 overall GPA who have no outstanding incomplete grades, and to majors who demonstrate ability to do honors work by submitting a paper to the program director for approval.

To be eligible for honors at graduation, you must successfully complete Women's Studies 197 and two successive terms of independent studies (courses 199HA-199HB) with your faculty sponsor and receive a grade of B or better on your research paper/project. Course 199HA may be applied toward the concentration requirement; course 199HB is in addition to the minimum required courses. Further information is available from the undergraduate counselor in the program office.

## Women's Studies Specialization

The specialization augments study in a traditional field. Students participating in this program are required to complete both a departmental major and the women's studies specialization.

You must take three core courses (Women's Studies 10, one course from 110A through M110D, and 197), plus five upper division elective courses from the approved list of women's studies credit courses issued each term by the program. One course on American ethnic minority women is strongly recommended. At least one of the five courses must be taken in a department other than the major department. Up to two may be experimental courses offered by the Council on Educational Development (CED). No more than four units of course 199 may be applied.

All courses applied toward the specialization must be taken for a letter grade, and you must have a GPA of 2.0 or better in women's studies courses to receive credit for completing the program. Courses in which you receive a grade below C may not be applied toward the specialization.

## Lower Division Course

**10. Introduction to Women's Studies: Feminist Perspectives on Women and Society.** Lecture, two and one-half hours; discussion, one hour. Introduction to study of women and men in society, covering comparative issues of social, political, and economic position in the workplace, family, cultural institutions; historical basis of women's subordination; the female experience; the male experience; relations between women and men; intersections of ethnicity, class, and gender; violence against women; cultural images of women and men; social roles of women and men and movements for social change. (F,W,Sp)

## Upper Division Core Courses

**110A. Feminist Theories: Social and Political.** Lecture/discussion, three hours. Prerequisite: course 10. Examination in depth of differing feminist theorists' attempts to describe, explain, critique, and reconstruct social and political institutions from perspectives of women. Emphasis on whether and how feminist theory is related to change in structure, operation, or understanding of such institutions as law, politics, the state, education, work, family, religion, sexuality.

**110B. Feminist Theories: Criticism.** Lecture/discussion, three hours. Prerequisite: course 10. Examination in depth of differing feminist theorists' interpretations of language, literature, and the arts from a critical perspective. Emphasis on ways in which women and sexuality have been represented in cultural texts.

**110C. Feminist Theories: Perspectives on Gender and Science.** Lecture/discussion, three hours. Prerequisite: course 10. Examination in depth of different theoretical positions on gender and women as they have been applied to study of sciences. Emphasis on the theoretical contributions made by the new scholarship on women as it applies to shaping of scientific enterprise.

**M110D. Philosophical Analysis of Issues in Feminist Theory.** (Same as Philosophy M192.) Lecture, three hours. Prerequisite for women's studies majors: course 10; for other students: one philosophy course or consent of instructor. Examination in depth of different theoretical positions on gender and women as they have been applied to study of philosophy. Emphasis on theoretical contributions made by the new scholarship on women in philosophy. Critical study of concepts and principles which arise in discussion of women's rights and liberation. Philosophical approach to feminist theories. May be repeated for credit with consent of instructor.

**130. Women of Color in the U.S.** Lecture/discussion, three hours. Prerequisite: course 10. Exploration of experiences of African American, Asian American, Chicana, and Native American women in order to assess intersections of race, ethnicity, class, and gender. Contemporary and/or historical and/or theoretical perspectives on racism and its relation to feminism as defined by women of color.

**197. Senior Seminar: Women's Studies.** Discussion, three hours. Prerequisites: course 10, one course from 110A through M110D, two other women's studies courses; for seniors and juniors: consent of instructor. Designed for students completing work in women's studies. Each student pursues research on specific topic concerning women, explores frameworks for understanding female experience (biological, economic, historical, and psychological), and refines methods for research. (W,Sp)

## Upper Division Supporting Courses

**M103. Interracial Work, Friendship, and Love Relationships of African American Men and Women.** (Same as Afro-American Studies M175 and Honors Collegium M103.) Seminar, three hours. Examination of factors that influence development, maintenance, and dissolution of interracial relationships (specifically African Americans in interracial relationships) in the workplace, friendships, and intimate love relationships. P/NP or letter grading. Ms. Mays (Sp)

**M107A. American Women Writers.** (Same as English M107A.) Prerequisite: satisfaction of Subject A requirement. Survey of literary works by American women writers, with emphasis on roles of women, portrayal of nature and society, and evolution of forms and techniques in writing by American women.

Ms. Rowe, Ms. Smith

**M107B. British Women Writers.** (Same as English M107B.) Prerequisite: satisfaction of Subject A requirement. Survey of literary works by British women writers, with emphasis on roles of women, portrayal of nature and society, and evolution of forms and techniques in writing by British women.

Ms. Lewis, Ms. Mellor

**M107C. Special Topics in Women and Literature.** (Same as English M107C.) Prerequisite: satisfaction of Subject A requirement. Variable specialized studies course in women and literature, with emphasis on a period, genre, particular theme, or nontraditional literary grouping.

Ms. Allen, Ms. Cheung, Ms. Smith

**120. Internship in Women's Studies.** Seminar, three hours. Prerequisites: course 10 and at least one course from 110A through M110D. Field studies course combining seminar with field placement. Practical experience in working on women's issues and connecting these experiences to methodological and theoretical themes explored in courses 110A through M110D.

**125. Women and Health Care in the U.S.** Lecture/discussion, three hours. Prerequisite: course 10. Examination in depth of various ways women provide health care in both paid and unpaid capacities and of political, economic, and social factors affecting women as recipients of health care. P/NP or letter grading.

**M132A. Chicana Feminism.** (Same as Chicana and Chicano Studies M110.) Lecture, three hours. Prerequisite: course 10 or consent of instructor. Examination of theories and practices of women who identify as "Chicana feminist." Analysis of writings of Chicanas who do not identify as feminist but whose practices attend to gender inequities faced by Chicanas both within the Chicana/Chicano community and the dominant society. Attention to Anglo-European and Third World women.

Ms. Saldívar-Hull

**M132B. Contemporary Issues among Chicanas.** (Same as Chicana and Chicano Studies M154.) Prerequisite: course 10 or consent of instructor. Overview of conditions facing Chicanas in the U.S., including issues on family, immigration, reproduction, employment conditions. Comparative analysis with other Latinas.

Ms. Ortiz

**M137E. Work Behavior of Women and Men.** (Same as Psychology M137E.) Prerequisite: course 10 or Psychology 10 or senior standing. Examination of work behavior of women and men. Topics include antecedents of career choice, job findings, leadership, performance evaluation, discrimination and evaluation bias, job satisfaction, and interdependence of work and family roles.

Ms. Goodchilds

**M137J. Psychology of Language and Gender.** (Same as Communication Studies M124 and Psychology M137J.) Lecture, three hours. Prerequisites: Psychology 10 or equivalent, junior standing. Examination of current topics at intersection of gender and language. Topics include sex differentiation in language cross-culturally; sex bias in lexicon and usage; sex differences in lexicon, syntax, phonology, and nonverbal behavior; development of sex-differentiated language in children; "women's" and "men's" language in various racial/ethnic/class/sexual preference groups; and conversational interaction.

Ms. Henley

**M148. Women in Higher Education.** (Same as Education M148.) Prerequisite: upper division standing. Education and career development of women in higher education. Specifically, emphasis on undergraduate and graduate women; women faculty and administrators; curricula, programs, and counseling services designed to enhance women's educational and career development, affirmative action, and other recent legislation.

Ms. Astin

**M154. Women in Culture and Society.** (Formerly numbered M163.) (Same as Anthropology M154.) Lecture, three hours. Prerequisite: Anthropology 9. Systematic approach to study of sex roles from an anthropological perspective. Critical review of relevant theoretical issues supported by ethnographic material from traditional cultures and contemporary American culture.

Ms. Hale, Ms. Sacks

**M158. Women in Italian Culture.** (Same as Italian M158.) Lecture, three hours. Designed with intent of examining role that women have played in Italian society. Concentration alternatively on the world of medieval and Renaissance "matriarch" and on "liberated" women of our times. Historical and political documents and social and religious taboos presented and discussed, together with other data derived from literature and art. Italian majors required to read texts in Italian and to prepare papers written in Italian.

Mrs. Cottino-Jones

**M160. Women and Social Movements.** (Formerly numbered 160.) (Same as Anthropology M155Q.) Lecture/discussion, three hours. Recommended (but not prerequisite): prior women's studies or anthropology courses. Comparative studies of social movements (e.g., nationalist, socialist, liberal/reform), beginning with Russia and China and including Cuba, Algeria, Guinea-Bissau, Mozambique, Nicaragua, and Iran. Analysis of women's participation in social transformations and the centrality of gender interests. P/NP or letter grading.

**M162. Sex Roles and Society.** (Same as Sociology M162.) Lecture, three hours; discussion, one hour. Prerequisite: course 10 or Sociology 1 or consent of instructor. Consideration of sociological literature pertaining to development and functions of sex roles in society from a critical perspective. Topics include socialization and gender norms, contemporary sex role strain, and challenge to traditional notions of sex roles posed by feminist critique.

**M164. Gender and Work.** (Same as Sociology M163.) Lecture, three hours. Prerequisite: course 10 or Sociology 1 or consent of instructor. Exploration of relationship of gender to work, concentrating on the U.S. experience but also including some comparative material. Particular emphasis on analysis of causes and consequences of job segregation by gender and of wage inequality.

Ms. Milkman

**M165. Psychology of Gender.** (Same as Psychology M165.) Lecture, three hours. Consideration of psychological literature relevant to understanding contemporary sex differences. Topics include sex-role development and role conflict, physiological and personality differences between men and women, sex differences in intellectual abilities and achievement, and impact of gender on social interaction.

Ms. Peplau

**170. Jurisprudence of Sexual Equality.** Prerequisites: course 10 and one course from 110A through M110D or Political Science 10 or Philosophy 6 or 9 or consent of instructor. Exploration of models of equality described and/or advocated by legal theorists — equality of opportunity, equality of outcome, equality of respect, etc. — using specific problems of women (e.g., sexual harassment or pregnancy leave policy) for purposes of comparison and critique.

Ms. Littleton

**M172. The Afro-American Woman in the U.S.** (Same as Afro-American Studies M172 and Psychology M172.) Prerequisite: upper division standing. Impact of social, psychological, political, and economic forces which impact on interpersonal relationships of Afro-American women as members of a large society and as members of their biological and ethnic group.

Ms. Mays

**185. Special Topics in Women's Studies.** Prerequisites: upper division standing, one prior course in women's studies. Specialized or advanced study in an area within women's studies.

**199. Special Studies in Women's Studies.** Prerequisites: at least two upper division women's studies courses, minimum 3.0 GPA, consent of instructor and program director. Directed program of independent readings and/or research on a specific topic within women's studies. No more than four units may be applied toward women's studies specialization or major.

**199HA-199HB. Directed Studies for Honors.** Prerequisites: course 197, 3.0 GPA overall, 3.0 GPA in major. Limited to women's studies honors majors. Two-term sequence to research and write honors thesis under direction of faculty sponsor.

## Supporting Courses in Other Departments

Check with the program office for additional course listings.

**Anthropology** 151. Marriage, Family, and Kinship  
155. Women's Voices: Their Critique of Anthropology of Japan

263P. Gender Systems

**Asian American Studies** 105. Asian American Women

**Classics** 150A. Origins of the Western View of Women: The Female in Greek Thought

150B. Origins of the Western View of Women: The Female in Roman and Early Christian Thought

**Communication Studies** 153. The Media and Aggression Against Women

**Community Health Studies** 230. Family and Sexual Violence

431. Research in Women's Health: Theories and Methods

**English** 180X. Specialized Studies in Literature

**French** 140. Women's Studies in French Literature

165. Topics in French Literature in Translation: From Nature (Female?) to Culture (Male?)

**Health Services** M241. Women, Health, and Aging: Policy Issues

**History** 137A-137B-137C. History of Women in Europe  
156C-156D-156E. Social History of American Women  
156F-156G. History of the American Family  
197. Undergraduate Seminars

**Humanities** C170. Alternate Traditions: In Search of Female Voices in Contemporary Literature

**Political Science** 149A. Special Studies in Politics: Women and the Political Process

179A. Special Studies in Public Law: Women and Law

**Psychology** 197A. Current Issues in Psychology: Social Psychology of the Lesbian Experience

231. Psychology of Gender

## World Arts and Cultures (Interdepartmental)

An intercollege, interdepartmental major in world arts and cultures is open to students in both the College of Letters and Science and the School of the Arts. You enroll in the college or school of your choice and fulfill the general education requirements of that college or school. For details on this undergraduate major, see Chapter 6 on the School of the Arts.



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# School of the Arts

Robert Blocker, Dean



The School of the Arts is a stimulating academic center dedicated to the education of socially aware and technically skilled artists. It serves as a vital component of the Los Angeles arts community and a resource for the entertainment industry and related fields. While the school offers a broad intellectual and cultural exchange for students, it also provides a learning environment where they can pursue and develop academic and creative excellence.

In addition to a quality education in the arts and liberal studies, students may contribute to the UCLA/Los Angeles community through direct participation in over 35 dance productions, four art and design exhibitions, and 200 music concerts.

The school has five departments — Art, Dance, Design, Ethnomusicology and Systematic Musicology, and Music — and one intercollege, interdepartmental program — World Arts and Cultures.

# 6

# School of the Arts

125 East Melnitz Building, (310) 206-3564

The departments of the School of the Arts both borrow from and add to the rich and varied cultural life of the campus. Students in the Departments of Art and Design are taught to understand the broad panorama of the visual arts, while those in the Dance Department have opportunity to study ballet, modern, and ethnic dance forms. Students in the Department of Ethnomusicology and Systematic Musicology study all styles of music in the world from an ethnographic perspective. And the Music Department offers specializations in composition, theory, and performance.

World arts and cultures is an undergraduate major which integrates art history, dance, music, theater, anthropology, and folklore and mythology into one unique program. This interdisciplinary major is offered jointly by the School of the Arts and the College of Letters and Science.

Informative brochures on the school are available from the Office of Recruitment, 303 East Melnitz Building, UCLA, Los Angeles, CA 90024-1427 (310-825-9708).

If you are interested in obtaining instructional credentials for California elementary and secondary schools, consult the Graduate School of Education, 1605 Maxxam Building (122 Moore Hall in early 1994, 310-825-8328).

## Undergraduate Study

### Admission

In addition to the University of California Undergraduate Application, departments in the School of the Arts require auditions, portfolios, or evidence of creativity. Detailed information on departmental requirements is mailed to you on receipt of your application. Deadline date

for applications is November 30, 1993, for admission in Fall Quarter 1994.

### The Study List

Each term the student Study List must include from 12 to 17 units. The school has no provision for part-time enrollment. After your first term, you may petition to carry more than 17 units (up to 20 units maximum) if you have an overall grade-point average of 3.0 (B) or better **and** have attained at least a B average in the preceding term with all courses passed. The petitions must be filed and approved by the Student Services Office by the end of the fourth week of instruction.

If you have not filed your Study List by the end of the second week of classes, you must obtain the consent of the Student Services Office to continue for that term.

### Graduate Courses

Undergraduate students who wish to take courses numbered in the 200 series for credit toward the degree must petition for advance approval of the department chair and the dean of the school and must meet the specific qualifications. Courses numbered in the 400 and 500 series may not be applied toward the degree.

### Concurrent Enrollment

Enrollment at another institution or UCLA Extension while enrolled at UCLA is not permitted.

## Requirements for Bachelor of Arts Degrees

Each student must meet six kinds of requirements for the B.A. degree: University, school, and unit requirements, as well as residence, major, and scholarship requirements. The requirements are as follows.

## University Requirements

For information on the Subject A or English as a Second Language (ESL) and American History and Institutions requirements, see "Undergraduate Degree Requirements" in Chapter 2 of this catalog.

School of the Arts students enrolled in English as a Second Language 33A, 33B, 33C, 35 must take the courses for a letter grade.

## School Requirements

The general requirements of the School of the Arts must be completed with a grade-point average of 2.0 or better.

## General Education (GE) Course Requirements

**Reciprocity with Other UC Campuses** — Students who transfer to UCLA from other UC campuses and have met all general education requirements prior to enrolling at UCLA are not required to complete the School of the Arts general education requirements. Written verification from the college dean at the other UC campus is required. Verification letters should be sent to the Student Services Office, School of the Arts, 125 East Melnitz Building, UCLA, Los Angeles, CA 90024-1427.

**Intersegmental General Education Transfer Curriculum (IGETC)** — Transfer students from California community colleges have the option to fulfill UCLA's lower division general education requirements by completing the Intersegmental General Education Transfer Curriculum prior to transfer. The curriculum consists of a series of subject areas and types of courses which have been agreed on by the University of California and the California community colleges. The IGETC significantly eases the transfer process, as all of UCLA's general education requirements are fulfilled when you complete it. If you select the IGETC, you must complete it entirely before enrolling at UCLA. Otherwise, you must fulfill the School of the Arts general education requirements. The Office of Undergraduate Admissions and Relations with Schools determines, at the point of admission, your completion of the IGETC.

## English Composition and Rhetoric

English 3 with a minimum grade of C or an AP score of 4 should be completed by the end of your freshman year and may not be taken on a Passed/Not Passed basis.

### Majors and Degrees Offered

Art.....	B.A., M.A., M.F.A.
Dance.....	B.A., M.A., M.F.A.
Dance/Movement Therapy .....	M.A.
Design .....	B.A., M.A., M.F.A.
Ethnomusicology.....	B.A., M.A., C.Phil., Ph.D.
Music.....	B.A., M.A., M.F.A., C.Phil., Ph.D.
World Arts and Cultures .....	B.A.

### Critical Reading and Writing

One course from English 4, \*Humanities 2A, 2B, or 2C with a minimum grade of C or an AP score of 5 should be completed by the end of your sophomore year and may not be taken on a Passed/Not Passed basis.

### Foreign Language

You may meet this requirement by (1) scoring 3, 4, or 5 on the Advanced Placement (AP) foreign language examination in French, German, or Spanish, (2) presenting a UCLA foreign language proficiency examination score indicating competency through level three, or (3) completing one college-level foreign language course equivalent to UCLA's level three or above with an average grade of C or better.

International students may petition to use an advanced course in their native language for this requirement. Students whose entire secondary education has been completed in a language other than English may petition to be exempt from the foreign language requirement.

### Mathematics

One course (four units) in mathematics or statistics or an introductory course in computers selected from Mathematics 1, 2, 3A, 3B, 3C, 5, 31A, 31B, 31E, Program in Computing 1, 10A, 10B, 10C, Statistics 50.

### Science

Two courses (eight units) from different departments in physical or biological sciences selected from Anthropology 7, 10, 12, 15, Astronomy 2A, 2B, 3, 4, 5, 6, 81, 82, Atmospheric Sciences 2, 3, 4, 5, 6, Biology 2, 5, 5L, 6, 9, 10, 13, 20, 21, 25, 30, 40, 70, Chemistry and Biochemistry 2, 11A, 11B, 15, Earth and Space Sciences 1, 2, 5, 8, 9, 15, 16, Geography 1, 2, 5, Microbiology and Molecular Genetics 6, 7, Physics 3A, 3B, 3C, 6A, 6B, 6C, 8A, 8B, 8C, 10, Physiological Science 13, Psychology 15.

### Social Sciences

Three courses (12 units), with at least one from each group:

**Group A** — Economics 1, 2, 5, History 1A, 1B, 1C, 3A through 3D, 4, 5A, 5B, 6A, 6B, 6C, 7A, 7B, 8B, 8C, 8D, 9A through 9D, 10A, 10B, 11A, 11B, Political Science 1, 10, 20, 30, 40, 50.

**Group B** — Afro-American Studies M5, Anthropology 8, 9, 33, Chicana and Chicano Studies 10B, Geography 3, 4, Psychology 10, 11, Social Sciences 20, Sociology 1, 2, 3, 4, 31, Women's Studies 10.

### Humanities

Three courses (12 units), with at least one course in three of the four groups:

**Group A — Arts** — Art History 50, 51, 54, 55A, 55B, 56A, 56B, 57 (except art and design majors), Classics 51, Dance 134A, 134B, 181A, 182, C187 (except dance majors), Design 30A, 161A through 161J (except art and design majors), Ethnomusicology and Systematic Musicology 20A, 20B, 20C, 108A, 108B, M110A, M110B, 113, 136A, 136B, 147, 174 (except music and ethnomusicology majors), Film and Television 106A through 106E, 107, 108, 110A, 110B, 110C, 112, 113, 114, 116, Music 15, 136A, 136B, 136C (except music and ethnomusicology majors), Musicology 2A, 2B, 13, 133, 134, 135A, 135B, 135C (except music and ethnomusicology majors), Theater 102E, M103A through 103F, 104A, 104B, 104C, 105.

**Group B — Culture and Civilization** — Chicana and Chicano Studies 10A, Chinese 50, Classics 10, 20, Folklore and Mythology 15, German 100A, 100B, 100C, Italian 42A, 42B, Japanese 50, Jewish Studies 10, Korean 50, Portuguese M42, M44, Russian 99A, 99B, Spanish M42, M44.

**Group C — Literature** — Classics 40, 41, English 10A, 10B, 10C, 70, 75, 80, 85, 90, 95A, 95B, 95C, 96, French 12, 114A, 114B, 114C, German 50A, 50B, 101A, 101B, 101C, Humanities 1A, 1B, 1C, 1D, 2A\*, 2B\*, 2C\*, Portuguese 40A, 40B, 120A, 120B, 130A, 130B, Russian 25, Scandinavian 50, Spanish 60A, 60B, 60C, 120A, 120B, 136A, 136B.

**Group D — Philosophy/Religion** — Ancient Near East 130, Anthropology 156, Chinese 160, 175, Classics 88A, 145A, 145B, 166A, 166B, East Asian Languages and Cultures 60, Indic 175, Iranian 170, Islamics 110, Japanese 160, 175, Jewish Studies 130, Korean 160, 175, Philosophy 1, 2, 4, 5A, 6, 7, 8, 21, 22, 31, 32.

### Additional Upper Division Nonfield Requirements

In addition to the general education requirements, you are required to take a minimum of 12 upper division units unrelated to your major department/field. Courses that do not apply on this requirement are studio, performance, activity, independent study, debate courses, children's theater, creative dramatics, internships, production, workshop, and field studies courses. Consult your departmental or school counselor prior to enrolling.

### Unit Requirements

Currently, double majors in the school, or between the school and other academic units, are not permitted.

You must complete for credit, with a passing grade, no less than 180 units and no more than 208 units, of which at least 64 units must be upper division courses (numbered 100 through

199). No more than 16 units of CED courses and eight units of freshman seminars or 300-level courses may be applied toward the degree. Credit for 199 courses is limited to 16 units, eight of which may be applied to the major. All 199 courses must be taken for a letter grade.

UCLA Extension courses with the prefix X on those numbered in the 1 through 199, 200, 300, 400, or 800 series may not be applied toward the degree.

Credit earned through the College Entrance Examination Board (CEEB) Advanced Placement Tests may be applied toward the general education requirements. Portions of Advanced Placement Test credit may be evaluated by corresponding UCLA course numbers (e.g., History 1C). If you take the equivalent UCLA course, unit credit for such duplication is deducted before graduation.

### Residence Requirements

You are "in residence" while enrolled and attending classes at UCLA as a major in the School of the Arts. Of the last 45 units completed for the bachelor's degree, 35 must be earned in residence in the School of the Arts. No more than 18 of the 35 units may be completed in UCLA Summer Sessions.

Courses in UCLA Extension (either class or correspondence) may not be applied toward any part of the residence requirements.

### Major Requirements

A major is composed of not less than 14 courses (56 units), including at least nine upper division courses (36 units). All majors include both lower and upper division courses. Those listed under "Preparation for the Major" (lower division) must be completed before upper division major work is undertaken.

You must complete your major with a scholarship average of at least a 2.0 (C) in all courses in order to remain in the major and must be recommended by the chair of your major department. All courses in your major department must be taken for a letter grade.

As changes in major requirements occur, you are expected to satisfy the new requirements insofar as possible. Hardship cases should be discussed with the departmental adviser, and petitions for adjustment should be submitted to the dean of the school when necessary.

Any department offering a major in the School of the Arts may require a general final examination.

### Scholarship and Minimum Progress

A 2.0 (C) average is required in all work attempted at the University of California, exclusive of courses in UCLA Extension and those graded Passed/Not Passed. A C average is

\*If Humanities 2A, 2B, or 2C is taken to meet the critical reading and writing requirement, it may not also be applied toward the humanities/literature requirement.

also required in all upper division courses in the major taken at the University, as well as in all courses applied toward the general education and University requirements.

**Minimum Progress** — You are expected to complete satisfactorily at least 36 units during any three consecutive terms in residence; you are placed on probation if you fail to pass these units. You are subject to dismissal if you fail to pass at least 32 units in three consecutive regular terms in residence.

## World Arts and Cultures

The interdepartmental major in world arts and cultures is open to students in both the School of the Arts and the College of Letters and Science. You enroll in the college or school of your choice and fulfill the general education requirements of that college or school. Counseling is available — consult Silvily Kessler Thomas in the World Arts and Cultures Office, 124 Dance Building. For details on the major, see the section later in this chapter.

## Honors

To receive **Dean's Honors** in the School of the Arts, you must have at least 12 graded units per term with a grade-point average of 3.8 for less than 16 units of work (3.7 GPA for 16 or more units). The honor is posted on your transcript for the appropriate term. You are not eligible for Dean's Honors in any given term if you receive an Incomplete or a Not Passed (NP) grade, change a grade, or repeat a course.

**Honors at graduation** are awarded to students with superior grade-point averages. To be eligible, you must have completed 90 or more units for a letter grade at the University of California. The levels of honors and the requirements for each level are: *cum laude*, an overall average of 3.596; *magna cum laude*, 3.704; *summa cum laude*, 3.778. The GPAs for honors at graduation are subject to change. Required GPAs in effect in your graduating year determine your eligibility.

## Counseling and Program Planning

The School of the Arts offers advising, program planning in the major and general education requirements, and individual meetings with departmental counselors, including a yearly degree check sent to each student. Prior to registration and enrollment in classes, each new student is assigned to a counselor in the major department. For further counseling information, contact the Student Services Office, School of the Arts, 125 East Meinitz Building (310-206-3564).

## Graduate Study

The advanced degree programs offered in the School of the Arts provide graduate students with unique research opportunities when combined with special resources, such as the University Research Library, the special collections of the Arts and Music Libraries, and the University's exhibition and performance halls.

The School of the Arts cooperates with the UCLA John E. Anderson Graduate School of Management in offering a Master of Business Administration (M.B.A.) in Entertainment Management. Participating students serve term-long internships with such professional arts organizations as the Los Angeles County Museum of Art, the Mark Taper Forum, and the Los Angeles Philharmonic Orchestra.

A program in teaching is offered by the Graduate School of Education in each of the arts areas.

Fellowships, grants, and assistantships are available through the dean of the Graduate Division. The Graduate Affirmative Affairs Office provides counseling, academic support, and financial assistance to ethnic minority students.

## Admission

In addition to requiring that applicants hold a bachelor's degree from an accredited U.S. institution or an equivalent degree of professional title from an international institution, each department in the school has limitations and additional requirements. In general, samples of your work (dance or music audition, art portfolio, etc.) are required. Detailed information can be found in the departmental listings which follow.

For information on the proficiency in English requirements for international graduate students, refer to "Graduate Admission" in Chapter 3.

## Other Requirements

Requirements to fulfill each degree objective vary according to the degree and the department. See the departmental listings which follow for specific requirements and procedures.

## Art

1300 Dickson Art Center, (310) 825-3281

### Professors

Chris Burden, M.F.A.  
Henry T. Hopkins, M.A., *Chair*  
Samuel Amato, B.F.A., *Emeritus*  
William J. Brice, *Emeritus*  
Raymond B. Brown, M.A., *Emeritus*  
Elliot J. Elgart, M.F.A., *Emeritus*  
Robert F. Heinecken, M.A., *Emeritus*  
Lee Mullican, *Emeritus*

### Associate Professors

Barbara Drucker, M.F.A.  
Roger Herman, M.F.A.  
Charles Ray, M.F.A.

### Assistant Professors

Paul McCarthy, M.F.A.  
Nancy Rubins, M.F.A.  
Patricia Wickman, M.F.A.

### Lecturers

Mark Durant, M.F.A.  
Anne Marie Karlsen, M.F.A.  
Don Suggs, M.F.A.

## Scope and Objectives

Art courses include painting and drawing, sculpture, printmaking, photography, and new alternative media (which include performance, installation, video, and other nontraditional media). Students are introduced to diverse media and ideas in lower division courses and have the opportunity to specialize in upper division. Individual expression is encouraged in a general way for those who wish careers requiring art-related knowledge and in a specific sense for those who go on to careers as professional artists.

The Department of Art curricula lead to the Bachelor of Arts, Master of Arts, and Master of Fine Arts degrees. All programs benefit from the rich and varied art resources at UCLA and in the Los Angeles community.

## Bachelor of Arts Degree

### Preparation for the Major

*Required:* Art 1A, 1B, 11A through 11D, 31, 32, and one course from Art History 50, 51, 55A, 55B, 56A, 56B, 57.

### The Major

*Required:* A minimum of 13 upper division courses, including Art 100, 150, six courses from at least four of the following: 130, 133, 137, 140, 145, 147, one course from Art History 101A through C119B, and four art electives.

## Master of Arts Degree

### Admission

Students are admitted for Fall Quarter only. Regular admission requires a B.A. or equiv-

alent and faculty consent following the annual review of creative work in February. Applicants must submit slides (maximum 20) or videotape (if applying to the video field) to the Counselor, Department of Art, 1300 Dickson, UCLA, Los Angeles, CA 90024-1615.

Provisional admission may be granted for work with faculty sponsors for three terms, pending reconsideration of regular admission.

### Major Fields or Subdisciplines

Drawing, painting, sculpture, photography, and alternative media. No limit to the variations, extent, or value of these designations is intended.

### Course Requirements

A minimum of 36 quarter units of art courses numbered 130 through 280 (or courses from other departments that may be recommended by your adviser or committee chair) is required, with a B average or better.

Within those 36 units, a minimum of 20 quarter units in the 200 series must be taken in your field of specialization, including four units of Art 276. In addition, four units of course 280 are required as part of the 36 units.

A minimum of 36 quarter units of art history, theory, and criticism in undergraduate and/or graduate study is required (including Art 280). Art history courses completed at the undergraduate level may be applied toward the 36-unit art history requirement but may not be applied toward the 36 units required for the degree. Students with few or no art history courses in undergraduate study may take art history upper division or graduate courses at UCLA as electives to be applied toward the 36-unit art history requirement and toward the total units required for the degree. Subjects related to your special interest may be substituted by petition.

A total of eight units of Art 596 may be applied toward the 36 units required for the degree; four units may be applied toward the graduate course requirement.

### Comprehensive Examination Plan

Each degree is granted on the basis of the quality of work as demonstrated in the exhibition which accompanies the final comprehensive examination. The number of units of credit attained is irrelevant to this judgment.

A precluding review of work precedes the final comprehensive examination. The examination, usually oral, includes a formal exhibition of work and a document of vita, photo records of works, and a statement of the artist. The document is retained as property of the University.

### Master of Fine Arts Degree

#### Admission

Students are admitted for Fall Quarter only. See "Admission" under the Master of Arts degree above.

The M.A. is not prerequisite to the M.F.A. but may be elected as your stated degree objective. Usually, however, students proceed directly to the M.F.A. as a terminal degree. The unit requirements applied to the M.A. do not apply to the M.F.A., with the exception of the accumulative art history units.

### Major Fields or Subdisciplines

Drawing, painting, sculpture, photography, and alternative media. No limit to the variations, extent, or value of these designations is intended.

### Course Requirements

A minimum of 72 quarter units of art courses numbered 130 through 280 is required, with a B average or better.

Within those 72 units, a minimum of 40 quarter units in the 200 series must be taken in your field of specialization, including four units of Art 276. In addition, eight units of course 280 are required as part of the 72 units.

A minimum of 40 quarter units of art history in undergraduate and/or graduate study is required (including Art 280). Art history courses completed at the undergraduate level may be applied toward the 40-unit art history requirement but may not be applied toward the 72 units required for the degree. Students with few or no art history courses in undergraduate study may take art history upper division or graduate courses at UCLA as electives to be applied toward the 40-unit art history requirement and toward the total units required for the degree. Subjects related to your special interest may be substituted by petition.

A total of 12 units of Art 596 may be applied toward the 72 units required for the degree; four units may be applied toward the graduate course requirement.

### Comprehensive Examination Plan

Same as the plan offered for the Master of Arts degree, as noted above.

### Lower Division Courses

**1A. Drawing.** Studio, eight hours; five hours arranged. Course in basic drawing skills intended as preparation for work in a variety of media.

**1B. Sculpture.** Studio, eight hours; five hours arranged. Introduction to concepts and forms of contemporary sculpture to become familiar with tools and material to enable students to visually manifest their individual ideas. Presentation of work of contemporary artists.

**11A. Painting.** Studio, eight hours; five hours arranged. Prerequisites: courses 1A, 1B. Basics of painting: introduction to technical procedures, tools, and materials. Discussion of fundamental conceptual and formal concerns.

**11B. Photography.** Studio, eight hours; five hours arranged. Prerequisites: courses 1A, 1B. Fundamentals in technique, with emphasis on individual projects. Varied approaches, processes, and applications of the photographic medium within the context of art, supported by studies in theory, aesthetics, and history of photography.

**11C. Printmaking.** Studio, eight hours; five hours arranged. Prerequisites: courses 1A, 1B. Introductory survey of various technical and conceptual concerns in a variety of printmaking media as preparation for more focused study in particular media at upper division level.

**11D. New Genres.** Studio, eight hours; five hours arranged. Prerequisites: courses 1A, 1B. Introduction to projects in installation, performance, video, film, intermedia, and other nontraditional media and processes.

**31. Modernism.** Discussion, three hours. Survey of 20th-century European/American art, its antecedents, and its social and political context.

Mr. Hopkins

**32. Survey of Critical Thought.** Discussion, three hours. Overview of premodern, modern, and post-modern theory as reflected in critical writing and artistic practice, with emphasis on the 1940s to the present.

Mr. Hopkins

### Upper Division Courses

**100. Issues in Contemporary Art.** Discussion, three hours. Prerequisites: courses 1A, 1B, 11A through 11D, 31, and 32, or consent of instructor. Selected topics in theoretical, critical, aesthetic, and historical studies and their relevance to practicing artists. May be repeated for a maximum of 16 units.

**130. Advanced Drawing.** Studio, eight hours; five hours arranged. Prerequisites: courses 1A, 1B, 11A through 11D, 31, and 32, or consent of instructor. Drawing as both an independent expressive medium and as a means of visualization. May be repeated for a maximum of 16 units.

Ms. Drucker, Mr. Herman

**133. Advanced Painting.** Studio, eight hours; five hours arranged. Prerequisites: courses 1A, 1B, 11A through 11D, 31, and 32, or consent of instructor. Varied media and subjects to further develop students' technical and expressive means to implement their ideas. May be repeated for a maximum of 16 units.

Ms. Drucker, Mr. Herman

**137. Advanced New Genres.** Studio, eight hours; five hours arranged. Prerequisites: courses 1A, 1B, 11A through 11D, 31, and 32, or consent of instructor. Emphasis to be selected by faculty from one or more of the following media: installation, performance, video, film, other nontraditional media and processes. May be repeated for a maximum of 16 units.

Mr. Burden, Mr. McCarthy

**140. Advanced Printmaking.** Studio, eight hours; five hours arranged. Prerequisites: courses 1A, 1B, 11A through 11D, 31, and 32, or consent of instructor. Selected studies in fine printmaking, historical and contemporary: woodcut, etching and engraving, lithography, silk screen, mixed media. May be repeated for a maximum of 16 units.

Ms. Karlson

**145. Advanced Sculpture.** Studio, eight hours; five hours arranged. Prerequisites: courses 1A, 1B, 11A through 11D, 31, and 32, or consent of instructor. Selected studies in sculpture, historical and contemporary: modeling, carving, casting, welding, and other media; forms in space, including installations and non-studio pieces. May be repeated for a maximum of 16 units.

Mr. Ray, Ms. Rubin

**147. Advanced Photography.** Studio, eight hours; five hours arranged. Prerequisites: courses 1A, 1B, 11A through 11D, 31, and 32, or consent of instructor. Selected projects in photography and related media, concentrating on development of individual students' artwork. Studio emphasis with special topics in theory and critical analysis. May be repeated for a maximum of 16 units.

Mr. Durant

**150. Senior Studio.** Studio, eight hours; five hours arranged. Prerequisites: courses 1A, 1B, 11A through 11D, 31, and 32, or consent of instructor, senior standing. Advanced studio projects, with emphasis on analysis and criticism of individual creative work and ideas. May be repeated once for credit.

**197. Honors Course.** Hours to be arranged. Prerequisites: 3.0 GPA overall, 3.5 GPA in major, consent of instructor, junior or senior standing. Individual studies for majors. May be repeated once for credit.

**199. Special Studies in Art (2 to 8 units).** Hours to be arranged. Prerequisites: 3.0 GPA in major, consent of instructor, senior standing. Individual studies for majors. May be taken for a maximum of eight units.

## Graduate Courses

Prerequisite for all courses: consent of instructor. All courses may be repeated for credit (unless otherwise noted) on recommendation of the adviser; they are not open to undergraduate students.

**271. Painting (2 to 8 units).** Studio, eight hours. Study in painting and associated media.

Ms. Drucker, Mr. Herman

**272. Graduate Printmaking (2 to 8 units).** Studio, eight hours. Studies in traditional and experimental printmaking. Selected studies in intaglio, lithograph, woodcut, silk screen, photo printmaking, and mixed media.

Ms. Karlsen

**273. Graduate Sculpture (2 to 8 units).** Studio, eight hours. Studies in sculpture with specific attention to ongoing nature, specificity, and approach to each student's particular discipline. Individual studio visits and consultation.

Mr. Ray, Ms. Rubins

**274. Photography (2 to 8 units).** Studio, eight hours. Studies concentrating on development of individual students' artwork. Studio emphasis with adjacent studies in theoretical and critical analysis. Specific attention to original, expressive, social, and humanistic values of art.

Mr. Durant

**275. New Genre (2 to 8 units).** Studio, eight hours. Prerequisite: consent of instructor. Studies in alternative media, including installation, performance, video, film, and other nontraditional media and processes.

Mr. Burden, Mr. McCarthy

**276. Graduate Group Critique.** Discussion, four hours; tutorial, to be arranged. Group critique/discussion of students' research. Additional tutorial meetings by arrangement with instructor. May be repeated for credit.

**280. Graduate Seminar: Art.** Discussion, three hours. Advanced topics in critical theory and study of contemporary art, with emphasis on individuals, issues, and methodologies. Possible areas of study from structuralism, deconstruction, feminist and psychoanalytic theory, commodification, and censorship. May be repeated for credit.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study or Research (2 to 8 units).** Prerequisite: consent of instructor.

The Department of Art reserves the right to hold for exhibition purposes examples of any work done in classes and to retain for the permanent collection of its galleries such examples as may be selected.

## Dance

124 Dance Building, (310) 825-3951

### Professors

Elsie Dunin, M.A.  
Judy Mitoma, M.A., *Chair*  
Emma Lewis Thomas, Ph.D.  
Pia Gilbert, *Emerita*  
Alma M. Hawkins, Ed.D., *Emerita (Distinguished Teaching Award)*  
Carol Scothorn, M.A., *Emerita*  
Marion Scott, *Emerita*  
Doris Siegel, *Emerita*  
Allegra Fuller Snyder, M.A., *Emerita*

### Associate Professors

Irma Dosamantes, Ph.D.  
Angelia Leung, M.A., C.M.A.

### Assistant Professors

Judith Alter, Ed.D.  
Pat Catterson  
Colin Quigley, Ph.D.  
Lan Lan Wang, M.F.A.

### Lecturer

Kevin Ritter, M.F.A.

### Visiting Professors

Dan Wagoner  
Rebecca Wright

### Adjunct and Visiting Assistant Professors

Ronald Brown, *Adjunct*  
Pamela Fairweather, *Visiting*  
Judith Gantz-Siegel, M.A., C.M.A., *Visiting*  
Sally Kaplan, *Visiting*  
Maria-Isabel H. Miranda, M.S., *Visiting*  
Stan Pressner, *Visiting*

## Scope and Objectives

A creative and intelligent dance artist or dance researcher must have a deep understanding of the expressive potentials of human movement, skills in dance technique to realize those potentials, and an awareness of dance in its artistic, cultural, and social contexts. The exploration of dance in all its manifestations forms the basis of the UCLA dance curriculum. Dance students at UCLA can select studio classes from a broad palette of forms, including modern dance technique, choreography, improvisation, ballet, a variety of world dance forms, and several historical dance forms. The interdisciplinary nature of dance is examined in costume design, lighting, scenic design, music, and video. Theoretical courses in dance history, ethnology, movement therapy, aesthetics, and education provide methodology for understanding dance in context while notation, Laban analysis, anatomy, and kinesiology provide tools for the analysis of movement.

UCLA offers the Bachelor of Arts degree in Dance, combining preprofessional training with a liberal arts education which is essential to the development of an intelligent creative individual.

The graduate program awards a Master of Arts in Dance, a Master of Arts in Dance/Movement Therapy, and a Master of Fine Arts in Dance. M.A. students may concentrate their work in dance ethnology, dance history, and dance education. The M.A. in Dance/Movement Therapy has a strong clinical component and is approved by the American Dance Therapy Association. The M.F.A. is a professional degree in choreography and/or performance.

*Note: Departmental faculty members are examining all curricula with a view to their revision. Information regarding requirements for graduation may be subject to change.*

## Bachelor of Arts Degree

The dance major offered through the School of the Arts leads to the Bachelor of Arts degree. Students who wish to confer with the departmental counselor regarding program planning and major requirements should contact Wendy Temple, Student Affairs Officer, in the department office.

### Preparation for the Major

*Required:* Twenty-four units of lower division coursework, including Dance 6, 7A-7B-7C, 11A through 11F, 20, 25, 48 (must be taken twice), 70 (or departmentally approved alternative).

### The Major

*Required:* A total of 66 units of upper division coursework, including Dance 100A-100B-100C, C120, 123A, 123B, 132A, 134A, 134B, 141, 144, 148, 149, 196, and 12 units selected from one of the following clusters: (1) choreography/performance (courses 113A, 113B, 142, 145, six units of advanced studio); (2) analysis, documentation, and media (courses 125, 126, C180A, C180B); (3) critical studies (courses C132B, C133, C180A, C180B, 181A through 181D, 182, 183, CM184, C187); (4) applied studies (courses 123C, 151, 152, 153, C160A, C160B, C160C).

Admission to the upper division major is determined by a screening and evaluation conducted during Spring Quarter of your sophomore year. All entering students audition for placement in technique and choreography classes.

## Master of Arts in Dance

### Admission

A bachelor's degree with an undergraduate major in dance or equivalent experience is required. Some of this experience may have been gained outside the academic setting through intensive workshops, summer sessions, and performance and professional work. In addition to that used by UCLA Graduate Application Processing, the department has its own application process which requires three letters of recommendation, an interview, and an audition.

In the audition faculty members look at your technical proficiency and creative potential. Special attention is given to the creative aspects of dance. Because the department recognizes the importance of diversity and specialization at the graduate level, you are evaluated according to your primary focus (education, therapy, ethnology, or history).

Prospective students may write to the Department of Dance, 124 Dance Building, UCLA, Los Angeles, CA 90024-1608, for departmental brochures which give additional information on the graduate program.

### Foreign Language Requirement

There is no foreign language requirement. However, fieldwork in dance ethnology and dance history may require working knowledge of the language of your research area.

### Course Requirements

A minimum of 36 units is required, including nine courses (or more depending on your specialty), distributed as follows: (1) Dance 230; (2) four courses (16 units) in the department at the graduate level (200 series); (3) four courses (16 units) in or outside the department at the upper division or graduate level. Studio courses (techniques in modern dance, ballet, or world dance) and courses taken to fulfill prerequisites may not be applied toward degree requirements.

Eight units of 500-series courses (596A, 596R, 598) may be applied toward the total course requirement; four units may be applied toward the minimum graduate course requirement.

Depending on your area of focus, certain sequences of study, developed with the guidance and advice of the graduate adviser, lead to knowledge and depth in that area and produce a viable program to meet your objectives and goals.

While fieldwork is not a requirement for those specializing in the area of dance ethnology, it is strongly suggested as part of that program.

### Teaching Experience

Teaching experience is not a requirement for the degree. It is highly recommended, however, for those who intend to teach in their area of specialization. A number of teaching assistantships are available through the department.

### Thesis Plan

If you select the thesis plan, you must obtain approval of the subject from a graduate faculty panel by your fifth term. Your written proposal is presented and defended before the faculty panel. After the thesis plan is accepted, a thesis committee is formed. The thesis is the result of your original research or creative work.

### Comprehensive Examination Plan

If you select this plan, you must obtain approval from a graduate faculty panel by your sixth term.

Your written proposal is presented and defended before the faculty panel. After the plan is accepted, a comprehensive examination faculty committee is formed. The examination, administered by this committee, consists of three written questions and an oral section. Each committee member grades all questions. In order to pass, each question must be graded pass or better. If any questions are failed, you may retake the failed portion(s) once only.

### Master of Arts in Dance/Movement Therapy

An M.A. in Dance/Movement Therapy is required for registry as a therapist with the American Dance Therapy Association (ADTA).

### Admission

In addition to the requirements listed above under the M.A. in Dance, an undergraduate course in abnormal psychology is required. Other courses in psychology (developmental, personality, and group dynamics) are highly recommended.

### Course Requirements

A total of 70 units is required, distributed as follows: (1) Dance 230; (2) 50 units in the department at the graduate level; (3) 16 units in or outside the department at the upper division or graduate level. Studio courses (techniques in modern dance, ballet, or world dance) and courses taken to fulfill prerequisites may not be applied toward degree requirements.

These course requirements are to be partially fulfilled by Dance 225A-225B, C260A-C260B-C260C, 261A-261B-261C, 262A-262B-262C, 460A-460B-460C, 596A, 596R.

During your second year, you are required to serve an internship within a clinical facility, which provides an opportunity to work with one of a variety of clinical populations.

### Thesis Plan

If you select the thesis plan, you must obtain approval of the subject from a graduate faculty panel by your fifth term. Your written proposal is presented and defended before the faculty panel. After the thesis plan is accepted, a thesis committee is formed. The thesis is the result of your theoretical, clinical, or empirical work.

### Comprehensive Examination Plan

If you select this plan, you must obtain approval from a graduate faculty panel by your sixth term. Your written proposal is presented and defended before the faculty panel. After the plan is accepted, a comprehensive examination faculty committee is formed. The examination, administered by this committee, consists of three written questions and an oral section. Each committee member grades all questions. In order to pass, each question must be graded pass or better. If any questions are failed, you may retake the failed portion(s) once only.

## Master of Fine Arts in Dance

### Admission

In addition to that used by UCLA Graduate Application Processing, the department has its own screening procedure which requires three letters of recommendation, an audition, and a personal interview. M.F.A. applicants must demonstrate exceptional promise in either choreography (modern) or performance (modern, world, or historical). Auditioners in choreography show three original works; auditioners in performance present three selections already in their repertory. You are required to prepare a statement (no more than one page) describing the works shown.

### Foreign Language Requirement

There is no foreign language requirement. However, if you are a performer, it is recommended that you have working knowledge of the language of the culture in which you are specializing.

### Course Requirements

A total of 96 units is required as follows: at least 24 units at the 400 level, including Dance 441 and 490, and at least 32 units at the 200 level, including 221, 230, and 240A through 240D (with approval of your adviser, you may substitute a course from ethnomusicology in the music of your cultural area for course 221). Only four units of 500-level courses may be applied toward the degree. You must enroll in a studio class (performance, technique, repertory) every term except while in an internship or during your final term.

### Comprehensive Examination

You prepare a major concert in your third year, or a series of concerts in your second and third years. A series of presentations and evaluations serve as the process for advancement toward degree completion. An oral defense of the concert material is held with the comprehensive examination committee and production staff. A written production book with visual materials and a concept paper are completed after the performance.

### Lower Division Courses

**1A-1B-1C. Fundamentals of Modern Dance (2 units each).** (Formerly numbered 1A-1F.) Laboratory, four hours. Designed for nondance majors. Courses should be taken in sequence. Study of dance technique, improvisation, and choreography. Critical viewing, reading, and discussion of modern dance artists' works. Each course may be repeated once. P/NP or letter grading. (F,W,Sp)

**6. Fundamentals of Ballet (2 units).** (Formerly numbered 6F-6W-6S.) Laboratory, four hours. Study of ballet techniques and principles, including dance terminology. May be repeated twice; only two units may be applied toward the major. P/NP or letter grading.

Ms. Wright (F,W,Sp)

**7A-7B-7C. Beginning Ballet (2 units each).** (Formerly numbered 7F-7W-7S.) Laboratory, four hours. Prerequisite: dance major or consent of instructor. Study of beginning ballet techniques and principles, including dance terminology. Only two units may be applied toward the major. P/NP or letter grading.

Ms. Wright (F,W,Sp)

**10. Introduction to Dance (2 units).** Introduction to the many and varied theoretical aspects of dance as a discipline.

**11A-11F. Modern Dance Technique and Choreography (2 units each).** Lecture, one hour; studio, three hours. Limited to dance majors. Experiences designed to achieve beginning to intermediate levels of kinesthetic awareness and technical and improvisational skills, as well as understanding of the creative process of structure and form in dance compositions.

Ms. Catterson, Ms. Leung, Ms. Wang (F,W,Sp)

**20. Music Analysis for Dance (2 units).** Lecture, two hours; laboratory, one hour. Study of elements of music, music structures, and their relationship to dance, with emphasis on rhythmic analysis, dance accompaniment, and teacher/accompanist roles. (F)

**23L. Laboratory in Conditioning for Dancers (2 units).** Laboratory, four hours. Specific conditioning principles applied to strengthening, stretching, and endurance training. Personalized attention enables students to increase their ability to dance more efficiently and to prevent dance injuries. P/NP grading.

Ms. Alter (F,W,Sp)

**25. Introduction to Dance/Movement Notation (2 units).** (Formerly numbered 25A.) Lecture, two hours; laboratory, one hour. Beginning skills in observing, analyzing, reconstructing, and recording dance/movement based on principles of the Labanotation and Labananalysis systems.

**40. Introduction to Dance Theater (2 units).** Lecture, two hours; laboratory, two hours. Introduction to practical and aesthetic perspectives on theater space, as well as basic aspects of scene, lighting, costume, and sound design technology for dance production.

**48. Laboratory in Dance Production (1 unit).** Laboratory, two hours. Realization of concepts of lighting, sound, costume, scene design, and stage practices in departmental dance productions. Must be repeated once in another year. P/NP grading.

Mr. Pressner (Sp)

**70. Survey of Dancing in Selected Cultures (2 units).** Studio, three hours. Introduction to dances and their movement characteristics in Western and non-Western cultures. Mrs. Dunin, Mr. Quigley (F)

**71B. Dance of Indonesia (2 units).** Studio, three hours. Dance experience not required. Introduction to technique and repertory of dance traditions (e.g., Java, Bali, Sunda). Ms. Mitoma (W)

**71C. Dance of Japan (2 units).** Studio, three hours. Dance experience not required. Technique and repertory from the court dance tradition (e.g., Gagaku).

**71D. Dance of India (2 units).** Studio, three hours. Dance experience not required. Introduction to dance in India, with emphasis on a particular tradition (e.g., Bharata Natyam). Ms. Yodh (F)

**71E. Dance of Korea (2 units).** Studio, three hours. Dance experience not required. Technique and repertory of a selected dance tradition (e.g., Korean classical and folk).

**72B. Dance of West Africa (2 units).** Studio, three hours. Dance experience not required. Introduction to technique and repertory of a selected region (e.g., Ghana, Guinea, Nigeria).

**73B. Dance of Mexico (2 units).** Studio, three hours. Dance experience not required. Introduction to forms and styles in dances of several ethnographic regions. Emphasis on identifying dance characteristics through actual dancing. Ms. Miranda (F)

**74C. Dance of Spain (2 units).** Studio, three hours. Dance experience not required. Technique and repertory of dances from selected ethnographic regions. (F)

**74D. Dance of Anglo- and Celtic-American Tradition (2 units).** Laboratory, four hours. Introduction to technique and repertory of vernacular dance traditions of the British Isles and their derivatives in North America. P/NP or letter grading. Mr. Quigley

**76B. Dance of Israel (2 units).** Studio, three hours. Dance experience not required. Technique and repertory from selected ethnographic regions.

**79A-79Z. Dance of a Selected Culture (2 units each).** Laboratory, four hours. Introduction to selected dance forms from a culture area or historical period or of a particular dance genre. P/NP or letter grading.

**80A-80B. Movement as Cultural Behavior (2 units each).** Studio, three hours. Prerequisite: world arts and cultures major or consent of instructor. Studio/laboratory examination of individual and cultural factors which affect expressive movement in cultures. Experimental classes which enhance kinesthetic and movement awareness of self and others through cultural perspective. Ms. Mitoma, Mr. Quigley (W,Sp)

## Upper Division Courses

**100A-100B-100C. Modern Dance: Intermediate Technique and Choreography.** Lecture, three hours; laboratory, four hours. Prerequisite: course 11F. Limited to dance majors. Intermediate to advanced levels of technical skill emphasizing musicality, spatial awareness, and movement complexity. Choreographic assignments include use of composed music, group forms, and stage space. (F,W,Sp)

**101A-101B-101C. Intermediate Modern Dance Technique (2 units each).** Lecture, two hours; laboratory, two hours. Technique levels II and III. Emphasis on increasing technical skill. Each course may be repeated once.

Mr. Brown, Ms. Catterson, Ms. Wang (F,W,Sp)

**C102A-C102B-C102C. Advanced Modern Dance Technique (2 units each).** Laboratory, four and one-half hours. Prerequisite: course 101C or consent of instructor. Technique levels IV and V. Studies in advanced modern dance technique, with emphasis on performing skills. Each course may be repeated for a maximum of six units. Concurrently scheduled with courses C402A-C402B-C402C. P/NP or letter grading.

Mr. Brown, Ms. Catterson, Ms. Wang (F,W,Sp)

**103. Improvisation in Dance (2 units).** Studio, four hours. Prerequisite: dance major or consent of instructor. Development of aesthetic perspective through use of imagery, sound, and other art. Concentration and projection. May be repeated twice. (W)

**106A-106B-106C. Intermediate Ballet (2 units each).** Laboratory, four hours. Prerequisites: courses 7A-7B-7C or consent of instructor. Study of techniques and principles of ballet, including phrasing, combinations, and repertory. Each course may be repeated once. P/NP or letter grading. Ms. Wright (F,W,Sp)

**C107A-C107B-C107C. Advanced Ballet (2 units each).** Laboratory, four and one-half hours. Prerequisite: course 106C or consent of instructor. Advanced technique in ballet, with emphasis on performing skills. Each course may be repeated for a maximum of six units. Concurrently scheduled with courses C407A-C407B-C407C. P/NP or letter grading. Ms. Wright (F,W,Sp)

**113A-113B-113C. Advanced Modern Dance: Performance and Choreography (2 units each).** Studio, two hours; rehearsal, two hours. Prerequisite: course 100C. Improvisation and choreographic study leading to independent work in solo and group forms. Development of performance, direction, and production skills culminating in a presentation. Ms. Leung (F,W,Sp)

**114. Form and Structure in Choreography.** Lecture, one hour; laboratory, three hours. Prerequisite: dance major or consent of instructor. Study of craft of choreography. Emphasis on breath movement, phrasing, ABA, theme and variations, rondo. Learning to discipline and shape creative impulse into specific forms, with emphasis on staging.

**C120. Music as Dance Accompaniment.** Prerequisite: course 20 or consent of instructor. Piano and percussion improvisation for dance. Choreographer/composer relationships. History of music for dance, with emphasis on contemporary trends. Music for dance performance. May be concurrently scheduled with course C220. (W)

**122. Movement Theories: Variable Topics (2 units).** Lecture, two hours; laboratory, two hours. Study of motor coordination patterns as related to expressive movement features for dance performance. Personalized attention and use of video to increase students' stylistic diversity. Development of movement efficiency for prevention of dance injuries. May be repeated twice. P/NP or letter grading.

Ms. Gantz-Siegel (W)

**123A. Anatomy for the Dancer.** Prerequisite: course 11F or consent of instructor. Study of human muscular-skeletal system as related to dance.

Ms. Gantz-Siegel (F)

**123B. Principles of Conditioning and Correctives for Dance.** Prerequisite: course 123A. Study of biological and physical principles of human movement as related to dance. Prevention and care of dance injuries.

Ms. Gantz-Siegel (Sp)

**123C. Projects in Dance Kinesiology.** Prerequisite: course 123B. In-depth study of selected topics introduced in courses 123A and 123B.

Ms. Gantz-Siegel

**125. Principles of Movement Analysis: Laban-analysis.** Lecture, two hours; laboratory, two hours. Prerequisite: course 25. Basic principles of Laban-analysis. Emphasis on experiential understanding of movement through study of motion factors and elementary concepts of spatial dynamics. Focus on qualitative area of movement to further comprehension of dance as a creative art form.

Ms. Gantz-Siegel (W)

**126. Principles of Movement Analysis: Labanotation.** Lecture, two hours; laboratory, two hours. Prerequisite: course 25. Developing skills in reading, writing, reconstructing, and score preparation of complex movement. Mrs. Dunin, Ms. Leung

**C127. Production Techniques for Dance/Video.** Lecture, one hour; laboratory, three hours. Experiential dance/video workshop concentrating on effective techniques of shooting, as well as choreographing movement especially for the camera. Choreographers/dancers and camerapeople/technicians with dance experience collaborate to establish a common vocabulary, set of values, and sensitivity to each other's concerns. Concurrently scheduled with course C227. Undergraduates required to complete short self-designed, edited video work as final project. Ms. Kaplan (W,Sp)

**128. Dance and the Visual Media.** (Formerly numbered 249.) Examination of aesthetic differences between dance, film, and video and exploration of the new aesthetic when they are combined. Analysis of the record and documentary dance film, choreo-cinema, and impact of MTV, as well as integration of media with performance. Ms. Kaplan (F)

**132A-C132B. Philosophical Bases and Trends in Dance (4 units, 2 units).** Course 132A is prerequisite to C132B. Critical analysis of dance as a creative experience and role of professional and educational dance in our society. Study of present-day concepts and their relationships to other art forms and cultures. Course C132B is concurrently scheduled with C231B. Ms. Alter

**C133. Baroque Dance: Analysis and Re-creation.** Lecture, two hours; laboratory, two hours. Prerequisites: courses 134A and 134B or equivalent experience, consent of instructor. Analysis and re-creation of 17th- and 18th-century dance as recorded in dance notation of the era. Study of cultural context, aesthetics, style, music. Social and theatrical dance forms. Concurrently scheduled with course C233.



**134A. History of Dance in Western Culture, Origins to 1600.** Development of dance styles in Western culture; function in society and relationship to contemporary artistic expression; ancient Egypt through European Renaissance. Ms. Alter, Mrs. Thomas (F)

**134B. History of Dance in Western Culture, 1600 to the Present.** Prerequisite: course 134A or consent of instructor. Survey of dance styles in European and American cultures from early baroque to the present. Ms. Alter, Mrs. Thomas (W)

**141. Lighting Design for Dance Theater.** Lecture, four hours; laboratory, two hours. Prerequisite: course 11F or consent of instructor. Lighting for dance: examination of aesthetics, principles, and technical elements. Application to selected choreographies to be publicly performed. Mr. Pressner (W,Sp)

**142. Advanced Studies in Dance Theater Lighting (2 or 4 units).** Lecture, four hours; laboratory, four or more hours. Prerequisite: course 141 or consent of instructor. Analysis of diverse dance theater lighting problems at advanced level and individual development of creative solutions. May be taken for a maximum of four units. Mr. Pressner (Sp)

**144. Costume and Scenic Design Concepts for Dance Theater.** Prerequisite: course 11F or consent of instructor. Study of theory for conceptualizing dance performance environments, communication through visual elements, artistic properties of costume and sets media, and procedures for producing dance costumes and sets in order to facilitate choreographer/designer communication. Mr. Ritter (F)

**145. Advanced Dance Costuming.** Lecture, three hours; laboratory, six hours. Prerequisite: course 144 or consent of instructor. Theory of dance costume construction as it relates to design intent; enhancement, accommodation, and impact on movement. Choice of textiles, construction methodology, fabric modification, and accessories. Laboratories include dance design projects currently in production. Mr. Ritter

**148. Advanced Laboratory in Dance Production (1 unit).** Laboratory, two hours. Prerequisites or corequisites: courses 141 and 144, or consent of instructor. Further development and application of concepts of lighting, sound, costume, scene design, and stage practices in departmental dance productions. May be repeated once. P/NP grading. Mr. Pressner (Sp)

**149. Dance Performance Practicum (1 unit).** Laboratory, four hours. Dancing in selected choreography or repertory in performance. May be repeated for credit. P/NP grading. (F,W,Sp)

**151. Foundations of Dance Education.** Lecture, two hours; laboratory, three hours. Prerequisite: dance major or consent of instructor. Introduction to movement concepts, skills, and teaching principles for modern dance instruction. Supervised teaching practicum included. Ms. Gantz-Siegel, Ms. Leung (F)

**152. Dance as Culture in Education.** Lecture, two hours; laboratory, two hours. Prerequisite: course 70 or consent of instructor. Theoretical and practical aspects of teaching ethnic dance, especially in higher education. Mrs. Dunin (F)

**153. Creative Dance for Children.** Lecture, three hours; laboratory, one hour. Prerequisite: dance major or consent of instructor. Introduction to movement concepts, skills, and principles for teaching children's dance; emphasis on dance as a creative medium of expression. Ms. Leung (Sp)

**C160A-C160B-C160C. Group Dynamics and Process (2 units each).** (Formerly numbered 160.) Lecture, one hour; laboratory, three hours. Prerequisite: consent of instructor. Exploration of individual and group dynamics within context of an ongoing dance/movement therapy group. Courses must be taken in sequence. Concurrently scheduled with courses C260A-C260B-C260C. P/NP or letter grading. Ms. Dosamantes (F,W,Sp)

**C171B. Dance of Indonesia (2 units).** Studio, three hours. Prerequisite: course 71B or consent of instructor. Technique and repertoire of a selected dance tradition (e.g., Java, Bali, or Sunda). Dance in relation to music, aesthetic principles, and cultural context. May be repeated once. Concurrently scheduled with course C471B. Ms. Mitoma (Sp)

**C171C. Dance of Japan (2 units).** Studio, three hours. Prerequisite: course 71C. Technique and repertoire of a selected tradition. Dance in relation to music, aesthetic principles, and cultural context. May be repeated once. Concurrently scheduled with course C471C.

**C171D. Dance of India (2 units).** Studio, three hours. Prerequisite: course 71D. Technique and repertoire of a selected tradition. Dance in relation to music, aesthetic principles, and cultural context. May be repeated once. Concurrently scheduled with course C471D. (W,Sp)

**C171E. Dance of Korea (2 units).** Studio, three hours. Prerequisite: course 71E. Technique and repertoire of a selected tradition. Dance in relation to music, aesthetic principles, and cultural context. May be repeated once. Concurrently scheduled with course C471E.

**C172B. Dance of West Africa (2 units).** Studio, three hours. Prerequisite: course 72B. Technique and repertoire of a selected region (e.g., Ghana, Guinea, Nigeria). Dance in relation to music, aesthetic principles, and cultural context. May be repeated once. Concurrently scheduled with course C472B.

**C173B. Dance of Mexico (2 units).** Studio, three hours. Prerequisite: course 73B. Dance techniques of selected ethnographic regions. May be repeated once. Concurrently scheduled with course C473B. Ms. Miranda (W,Sp)

**C174C. Dance of Spain (2 units).** Studio, three hours. Prerequisite: course 74C. Techniques and repertoire of a selected tradition. Dance in relation to music, aesthetic principles, and cultural context. May be repeated once. Concurrently scheduled with course C474C.

**174D. Dance of Anglo- and Celtic-American Tradition (2 units).** Laboratory, four hours. Prerequisite: course 74D or consent of instructor. Technique and repertoire of vernacular dance traditions of the British Isles and their derivatives in North America. May be repeated for credit. P/NP or letter grading. Mr. Quigley

**C176B. Dance of Israel (2 units).** Studio, three hours. Prerequisite: course 76B. Technique and repertoire from selected ethnographic regions. May be repeated once. Concurrently scheduled with course C476B.

**C179A-C179Z. Dance of a Selected Culture (2 units each).** Laboratory, four hours. Prerequisite: consent of instructor. Dance technique of a selected dance form from a culture area or historical period or of a particular dance genre. May be repeated for credit. Concurrently scheduled with courses C479A-C479Z. P/NP or letter grading.

**C180A-C180B. Studies in Dance Ethnography.** (Formerly numbered 180A-180B.) Development of observation and recording skills for study of dance events, including both analytical consideration of selected ethnographies and development of skills. Concurrently scheduled with courses C279A-C279B. **C180A.** Labanotation and Labananalysis. Lecture, two hours; discussion, two hours; laboratory, two hours. **C180B.** Notation. Prerequisite: course C180A or consent of instructor. Mrs. Dunin, Mr. Quigley (F,W)

**181A. Dance Cultures of Asia.** Introduction to dance cultures of Asia. How theories and practices of dance are influenced by historical and social factors and by ideological and aesthetic systems. Lectures illustrated with demonstrations, films, and slides.

**181B. Dance in Southeast Asia.** Prerequisite: course 181A or consent of instructor. Survey of selected ritual, social, and court dances of Indonesia, Cambodia, Thailand, and the Philippines. Social, historical, and aesthetic factors. Lectures illustrated with demonstrations, films, and slides.

**181C. Dance in East Asia.** Prerequisite: course 181A or consent of instructor. Survey of dances of Japan, China, and Korea and factors which have influenced their development and social function. Consideration of relationship of dance to other art forms. Lectures illustrated with demonstrations, films, and slides.

**181D. Dance in South Asia.** Prerequisite: course 181A or consent of instructor. Survey of dance forms in India and Sri Lanka. Factors influencing development of dance, its social function, and its relationship to other art forms. Lectures illustrated with demonstrations, films, and slides. (F)

**182. Dance in Africa and the African Diaspora.** (Formerly numbered 182A.) Survey of dance in sub-Saharan cultures and their new world transformations, with consideration of role of dance in society, its cultural significance, and historical background. Emphasis on various African and African American cultures and genres.

**183. Dance in Latino American Cultures.** (Formerly numbered 183A.) Survey of dance in Latin America, with consideration of role of dance in society, its cultural significance, historical background, and relationship to other art forms. Emphasis on various Latino American cultures and dance genres. Ms. Miranda (F)

**CM184. Dance in European and Euro-American Cultures.** (Formerly numbered CM184D.) (Same as Folklore CM184.) Survey of social, ceremonial, and ritual European-based dance; consideration of role of dance in society, its cultural significance, and historical background. Emphasis on various European and Euro-American regional and national dance traditions. Concurrently scheduled with course CM284. Mrs. Dunin, Mr. Quigley (W)

**C187. Dance in Native American Cultures.** (Formerly numbered C187A.) Survey of Native American dance; role of dance in society, its cultural significance, and historical background. Concurrently scheduled with course C287.

**190. Projects in Dance (2 to 4 units).** Laboratory, four to six hours (one or two hours may be individualized consultation). Individualized major projects in choreography, performance, production, media. May be repeated for credit. P/NP or letter grading. (F,W,Sp)

**191. Repertory Dance Tour (2 or 4 units).** Lecture, two hours; rehearsal or performance, four to six hours. Prerequisite: dance major or consent of instructor. Creation and performance of dance concerts in the community, with special emphasis on problems of touring dance company with a variable repertory. Ms. Leung

**196. Senior Project (2 or 4 units).** Seminar, two hours; discussion, two hours, or laboratory, to be arranged. Prerequisites: course 100C, senior standing. Advanced project reflecting student's area of concentration. May be taken for a maximum of four units. (W,Sp)

**C197A-C197Z. Selected Topics in Dance (2 to 4 units each).** (Formerly numbered 197A-197B.) Lecture, discussion, and analysis of a selected dance style, specific time period, or dance of a particular culture group. Concurrently scheduled with courses C297A-C297Z.

**199. Special Studies in Dance (2 to 8 units).** Prerequisites: senior standing, consent of instructor.

## Graduate Courses

**211A-211F. Advanced Choreography.** Lecture, two hours; laboratory, two hours. Prerequisite: course 113C or equivalent. Theoretical aspects of advanced choreography for students who have reached the level of self-initiation of substantial creative works. Refinement and realistic self-evaluation; critical counsel by acknowledged choreographers.

Ms. Catterson, Ms. Leung, Ms. Wang (F,W,Sp)

**C220. Music as Dance Accompaniment.** Prerequisite: course 20 or consent of instructor. Piano and percussion improvisation for dance. Choreographer/composer relationships. History of music for dance, with emphasis on contemporary trends. Music for dance performance. May be concurrently scheduled with course C120. Graduate students must complete two additional assignments. May not be applied toward M.A. degree requirements. (W)

**221. Music for Dance.** Prerequisite: course C120. Theory of aesthetic and functional relationship of music to dance. (Sp)

**223. Principles of Dance Kinesiology.** Prerequisite: consent of instructor. Scientific basis for movement for dance. Study of anatomical, kinesiological, and physical principles and demands of dance.

Ms. Gantz-Siegel

**225A-225B. Theories of Movement: Laban Analysis.** Lecture, two hours; laboratory, two hours. Theories of Laban movement analysis as means for analyzing and describing human movement. Use of Laban movement analysis to increase movement observation skills and theoretical understanding of role of movement in dance, nonverbal behavior, and cross-cultural dance studies. Focus on complex movement patterns and timing. Ms. Gantz-Siegel (W, 225A; Sp, 225B)

**226. Advanced Studies in Notation (2 units).** Prerequisite: course 126. Selected problems in directing from notated repertoire; principles of teaching, comparative notation systems, writing projects.

**C227. Production Techniques for Dance/Video.** (Formerly numbered 248.) Lecture, one hour; laboratory, three hours. Experiential dance/video workshop concentrating on effective techniques of shooting, as well as choreographing movement especially for the camera. Choreographers/dancers and camerapeople/technicians with dance experience collaborate to establish a common vocabulary, set of values, and sensitivity to each other's concerns. Concurrently scheduled with course C127. Graduate students expected to complete written papers related to reading and viewing assignments and final video project. Ms. Kaplan (W,Sp)

**230. Research Methods and Bibliography in Dance.** Survey of methods for scholarly analysis of dance materials using systems from social sciences, physical sciences, and humanities. Ms. Alter (Sp)

**231A. Basic Issues in Dance and Dance Theory.** Prerequisite: course 100C. Issues common to specialization areas in the field of dance: movement, presentation and transformation, composition, contexts (such as historical, ritual, social, educational, therapeutic), documentation (notation, film, video), production, etc. Ms. Alter (W)

**C231B. Philosophical Bases and Trends in Dance (2 units).** Prerequisite: course 231A. Study of present-day concepts and their relationship to other art forms and cultures. Concurrently scheduled with course C132B. Evaluations of graduate students based on extended reading list and term papers. Ms. Alter

**232. Aesthetics of Dance.** Analysis of aesthetic concepts and critical methods used in writing about dance. Mrs. Thomas

**C233. Baroque Dance: Analysis and Re-creation.** Lecture, two hours; laboratory, two hours. Prerequisites: courses 134A and 134B or equivalent experience, consent of instructor. Analysis and re-creation of 17th- and 18th-century dance as recorded in Feuillet notation. Study of cultural context, aesthetics, style, music. Social and theatrical dance forms. Concurrently scheduled with course C133.

**234. Renaissance Dance: Analysis and Re-creation.** Lecture, two hours; studio, two hours. Prerequisites: courses 134A and 134B, or consent of instructor. Analysis and re-creation of study of 15th- and 16th-century dance styles from Domenico da Piacenza through Cesare Negri. Mrs. Thomas

**235. History of Ballet.** Prerequisites: courses 134A and 134B, or consent of instructor. Development of ballet from 19th-century Romanticism to the present. Stylistic differences in Italy, France, England, Denmark, and Russia. Mrs. Thomas

**236. Dance in the 20th Century.** Prerequisites: courses 134A and 134B, or consent of instructor. Seminar in historical development of 20th-century dance. Mrs. Thomas

**240A. Production Arts Seminar.** Lecture, two hours; discussion, two hours; laboratory, two hours. Prerequisite: consent of instructor. Examination and research of dance and performer/audience relationships in various historic periods and cultural settings. Impact of different aesthetic/directorial approaches to theatrical production of dance. Exploration of locale, style, aural and visual enhancements. (F)

**240B. Production Arts Seminar.** Lecture, four hours; laboratory, to be arranged. Prerequisite: consent of instructor. Study of elements of design. Development of a vocabulary for analysis of dance movement and choreography. Communication among collaborating artists. Conceptualizing and producing the design and sound score for a dance production. Mr. Pressner, Mr. Ritter (W)

**240C. Production Arts Seminar.** Lecture, four hours; laboratory, to be arranged. Prerequisite: consent of instructor. Examination of contemporary art world, including arts organizations, funding sources, legal aspects of arts production, support groups, public relations and publicity. Relationship of film and video to choreographer and dancer. Choreographing for film/video. Adapting stage works to film/video. Ms. Leung (Sp)

**240D. Production Arts Seminar (2 units).** Lecture, three hours. Prerequisite: consent of instructor. Co-requisites: courses 441, 490. Topics from current problems of students preparing M.F.A. concert productions. Ms. Leung (F)

**251A-251D. Advanced Studies in Dance Education.** Lecture, two hours; discussion, two hours. Prerequisite: course 151 or consent of instructor:

**251A.** Historical and Theoretical Framework for Dance Education. Development of a framework for teaching/learning process in dance and application to varied settings and populations. Ms. Alter (W)

**251B.** Theories and Methods. Examination of current theories of artistic intelligence, body education systems, motor learning, and creativity and how they are related to teaching dance, including analysis of traditional models for developing alternative methodologies. Ms. Alter (F)

**251C.** Curriculum Development in Varied Dance Settings. Issues include course/program/materials planning, development, implementation, and evaluation, with emphasis on analyzing underlying educational values affecting decision-making process. Ms. Alter (W)

**251D.** Dance Administration. Relation of theories and practice to dance settings, clarifying issues of hierarchical structures, chains of command, staffing, facilities, and budget and why and how dance courses/programs succeed or fail. Ms. Alter, Ms. Leung

**C260A-C260B-C260C. Group Dynamics and Process (2 units each).** (Formerly numbered 260A-260B-260C.) Lecture, one hour; laboratory, three hours. Prerequisite: consent of instructor. Exploration of individual and group dynamics within context of an ongoing dance/movement therapy group. Concurrently scheduled with courses C160A-C160B-C160C. S/U grading. Ms. Dosamantes (F,W,Sp)

**261A-261B-261C. Dance/Movement Therapy: Theory and Practice.** Lecture, two hours; laboratory, two hours. Prerequisite: consent of instructor. Year-long sequence encompassing basic theoretical and practice concepts of field of dance/movement therapy. Ms. Dosamantes (F,W,Sp)

**262A-262B-262C. Seminars: Dance/Movement Therapy.** Lecture, two hours; laboratory, two hours. Prerequisites: courses 261A-261B-261C. Year-long sequential dance/movement therapy seminars adopting a psychodynamic life-span developmental approach to clinical community work with ethnically diverse populations. Ms. Fairweather (F,W,Sp)

**C279A-C279B. Studies in Dance Ethnography.** Development of observation and recording skills for study of dance events, including both analytical consideration of selected ethnographies and development of skills. Concurrently scheduled with courses C180A-C180B. **C279A.** Labanotation and Laban-analysis. Lecture, two hours; discussion, two hours; laboratory, two hours. **C279B.** Notation. Prerequisite: course C279A. Mrs. Dunin, Mr. Quigley (F,W)

**280A-280B. Advanced Studies in Dance Ethnology.** (Formerly numbered 280A-280B.) Co-requisites: courses C279A-C279B or consent of instructor. Dance viewed as an aspect of culture and human behavior. **280A.** Survey of literature of the field of dance ethnology and in related fields of anthropology, folklore, and performance studies. **280B.** Advanced studies in methodologies and training in fieldwork to develop dance-focused ethnographies with emphasis on ethnographic interview. Mrs. Dunin, Mr. Quigley (F,W)

**CM284. Dance in European and Euro-American Cultures.** (Formerly numbered CM284D.) (Same as Folklore CM284.) Survey of social, ceremonial, and ritual European-based dance; consideration of role of dance in society, its cultural significance, and historical background. Emphasis on various European and Euro-American regional and national dance traditions. Concurrently scheduled with course CM184. Mrs. Dunin, Mr. Quigley (W)

**C287. Dance in Native American Cultures.** (Formerly numbered C287A.) Survey of Native American dance; role of dance in society, its cultural significance, and historical background. Concurrently scheduled with course C187.

**C297A-C297Z. Selected Topics in Dance.** Lecture, discussion, and analysis of a selected dance style, specific time period, or dance of a particular culture group. Concurrently scheduled with courses C197A-C197Z. S/U or letter grading.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading. (F,W,Sp)

**400. Directed Professional Activities (2 to 8 units).** (Formerly numbered 400A-400B.) Prerequisite: consent of graduate adviser. Directed projects in professional editing, bibliography, filmography, videography, conference and festival direction, and other professional activities. May not be applied toward M.A. degree requirements. May be repeated. S/U grading. (F,W,Sp)

**C402A-C402B-C402C. Advanced Modern Dance Technique (2 units each).** Laboratory, four and one-half hours. Technique levels IV and V. Studies in advanced modern dance technique, with emphasis on performing skills. May be repeated for credit. Concurrently scheduled with courses C102A-C102B-C102C. S/U or letter grading. Mr. Brown, Ms. Catterson, Ms. Wang (F,W,Sp)

**C407A-C407B-C407C. Advanced Ballet (2 units each).** Laboratory, four and one-half hours. Prerequisite: course 106C or consent of instructor. Advanced technique in ballet, with emphasis on performing skills. May be repeated for credit. Concurrently scheduled with courses C107A-C107B-C107C. S/U or letter grading. Ms. Wright (F,W,Sp)

**441. Dance Production Practicum (2 to 4 units).** Laboratory, four to eight hours (one or two hours may be individualized consultation). Prerequisite: consent of instructor. Skills and understanding of production components in roles of stage manager, production assistants, and producer. May be repeated for a maximum of eight units. S/U grading. Ms. Leung, Mr. Pressner, Mr. Ritter

**451. Teaching Assistant Seminar (2 units).** Lecture, one hour; laboratory, three hours. Required of all Dance Department teaching assistants. Lectures, discussion, readings, and practice teaching. May be repeated once for credit. S/U grading. Ms. Gantz-Siegel (F,W)

**452. Directed Field Study in Dance Education (2 to 8 units).** Seminar, one hour; field study, two hours minimum. Prerequisite: consent of instructor. Directed field study to provide teaching experience in the community school or other approved site. No more than four units may be applied toward M.A. degree requirements. S/U grading. (F,W,Sp)

**460A-460B-460C. Clinical Internship Supervision.** Lecture, two hours; discussion, two hours. Co-requisites: courses 262A-262B-262C, 596R. Practicum dealing with student internship: movement/observation, therapeutic goals, therapeutic process, and other clinical uses. S/U grading.

Ms. Fairweather (F,W,Sp)

**C471B. Dance of Indonesia (2 units).** Studio, three hours. Prerequisite: course 71B or consent of instructor. Technique and repertoire of a selected dance tradition (e.g., Java, Bali, or Sunda). Dance in relation to music, aesthetic principles, and cultural context. May be repeated once. Concurrently scheduled with course C171B.

Ms. Mitoma (Sp)

**C471C. Dance of Japan (2 units).** Studio, three hours. Prerequisite: course 71C. Technique and repertoire of a selected tradition. Dance in relation to music, aesthetic principles, and cultural context. May be repeated once. Concurrently scheduled with course C171C.

**C471D. Dance of India (2 units).** Studio, three hours. Prerequisite: course 71D. Technique and repertoire of a selected tradition. Dance in relation to music, aesthetic principles, and cultural context. May be repeated once. Concurrently scheduled with course C171D.

(W,Sp)

**C471E. Dance of Korea (2 units).** Studio, three hours. Prerequisite: course 71E. Technique and repertoire of a selected tradition. Dance in relation to music, aesthetic principles, and cultural context. May be repeated once. Concurrently scheduled with course C171E.

**C472B. Dance of West Africa (2 units).** Studio, three hours. Prerequisite: course 72B. Technique and repertoire of a selected region (e.g., Ghana, Guinea, Nigeria). Dance in relation to music, aesthetic principles, and cultural context. May be repeated once. Concurrently scheduled with course C172B.

**C473B. Dance of Mexico (2 units).** Studio, three hours. Prerequisite: course 73B. Dance techniques of selected ethnographic regions. May be repeated once. Concurrently scheduled with course C173B.

Ms. Miranda (W,Sp)

**C474C. Dance of Spain (2 units).** Studio, three hours. Prerequisite: course 74C. Techniques and repertoire of a selected tradition. Dance in relation to music, aesthetic principles, and cultural context. May be repeated once. Concurrently scheduled with course C174C.

**C476B. Dance of Israel (2 units).** Studio, three hours. Prerequisite: course 76B. Technique and repertoire from selected ethnographic regions. May be repeated once. Concurrently scheduled with course C176B.

**C479A-C479Z. Dance of a Selected Culture (2 units each).** Laboratory, four hours. Prerequisite: consent of instructor. Dance technique of a selected dance form from a culture area or historical period or of a particular dance genre. May be repeated for credit. Concurrently scheduled with courses C179A-C179Z. S/U or letter grading.

**480. Seminar: Research Topics (2 units).** Forum in which faculty, students, and visitors make presentations and obtain feedback on research being planned, conducted, or recently completed. Students required to make a presentation each term they are enrolled for credit. May be repeated for a maximum of eight units. S/U grading.

**490. Projects in Choreography and Performance (2 to 8 units).** Tutorial, one three-hour rehearsal per unit per week minimum. Prerequisite: course 240C or consent of instructor. Creation, casting, and rehearsing of culminating concert, reflecting professional achievement in choreography or performance, in first term. In second term, direction of on-stage rehearsals for culminating concert by each student leading to fully staged performance. May be repeated for a maximum of 16 units.

(F,W,Sp)

**498. Professional Internship in Dance (4, 8, or 12 units).** Full- or part-time supervised fieldwork. Prerequisites: advanced standing in M.F.A. program, consent of instructor. Internship in dance, theater, film, or television organization. Participation in creative, administrative, or technical work of professionals in their specialties.

(F,W,Sp)

**596A. Directed Individual Study or Research (2 to 8 units).**

**596R. Directed Study or Research in a Hospital or Clinic (2 to 8 units).** S/U grading.

**597. Preparation for Master's Comprehensive Examination (2 to 8 units).** Preparation for M.A. or M.F.A. comprehensive examination. S/U grading.

**598. Research for and Preparation of Master's Thesis (2 to 8 units).** Research for and preparation of M.A. or M.F.A. thesis. S/U grading.

## Design

1200 Dickson Art Center, (310) 825-9007

### Professors

James W. Bassler, M.A.

Vasa Mihich

Adrian Saxe, B.F.A.

### Professors Emeriti

Laura F. Andreson, M.A.

Jack B. Carter, M.A.

Archine V. Fetty, M.A.

Thomas Jennings, M.A.

J. Bernard Kester, M.A.

John A. Neuhart

Nathan Shapira, Dottore in Architettura

### Associate Professors

Rebecca Allen, M.S., *in Residence*

William C. Brown, M.A.

Mitsuru Kataoka, M.A.

Janice Tanaka, M.F.A., *in Residence*

### Assistant Professors

Alice E. McCloskey, M.A., *Emerita*

Madeleine Sunkees, B.Ed., *Emerita*

### Visiting Associate Professor

Neda Al Hilali, M.A.

### Visiting Assistant Professors

Luis Bermudez, M.F.A.

Thomas M. Hartman, M.A.

Thomas A. Leeson, M.A.

## Scope and Objectives

Note: The Department of Design is examining the undergraduate and graduate curricula with a view to their revision. Admission to the department is closed for 1993-94. For further details, contact the Counselor, Department of Design, 1200 Dickson, UCLA, Los Angeles, CA 90024-1456.

The department offers a foundation of core courses, including color theory, perceptual drawing, three-dimensional design, computer, photography, and history, followed by a comprehensive group of integrated upper division courses in ceramics, fiber/textile, graphics, video, computer imagery, and environmental design which includes interior space planning and industrial design.

Design students are encouraged to work in experimental modes where materials and processes give new information and in the best of circumstances allow familiar visual and spatial relationships to be seen in new and diverse

ways. The tools of design students range from highly technical electronic video and computer to the loom, potters wheel, camera, drafting table, pen, brush, and sometimes solely the hand and word. Through a balance of courses in theory, criticism, and practice, students develop in both vision and competence to realize new methods and new forms, both functional and expressive.

The Department of Design curricula lead to the Bachelor of Arts, Master of Arts, and Master of Fine Arts degrees. All programs benefit from the rich and varied art resources at UCLA and in the Los Angeles community.

## Bachelor of Arts Degree

### Preparation for the Major

*Required:* Design 31A, 31B, 32A, 32B, 32C, 35A, 35B, 35C, and one course from Art History 50 through 57.

### The Major

*Required:* Twelve upper division courses, selected in consultation with the adviser, including Design 161E, 162A, 165A, 167A, 171A, three courses from 161A, 161C, 161G, 161H, 161J, and History 154C or 154D, and four upper division design electives.

It is recommended that you have each term's program approved by the departmental adviser.

Note: Consult the *Schedule of Classes* for courses restricted to majors only.

## Master of Arts Degree

### Admission

Students are admitted for Fall Quarter only. An acceptable portfolio is required, in the form of slides (maximum 20) or videotape (if applying to the electronic imagery field). Acceptance is by a majority vote of the design faculty.

Applicants are expected to have a bachelor's degree from an accredited institution; it need not be in art or design. A minimum grade-point average of 3.0 overall in undergraduate upper division work is required. Your initial advisory committee is formed immediately after you are accepted.

Prospective students may contact the Counselor, Department of Design, 1200 Dickson, UCLA, Los Angeles, CA 90024-1456, for brochures and information.

### Fields of Concentration

Communication imagery, image transfer, electronic imagery, computer imagery, ceramics, fiber structures, textiles, industrial design, exhibition design.

### Course Requirements

A minimum of 36 quarter units in the department (or nondepartmental courses with the graduate adviser's consent) selected from

courses numbered 161A through 295 (and possibly 596) is required, with a B average or better. These must include a minimum of 20 quarter units of design courses numbered above 200, of which at least four units must be from Design 290 and of which at least eight units must be devoted to a comprehensive project in your area of study. In addition, eight quarter units of art history are required (if you have a B.A. or B.F.A. in Art which includes a background in the history of art, you may substitute eight units in other courses that are germane to your graduate pursuit).

A total of eight units of course 596 may be applied toward the 36 units required for the degree; four units may be applied toward the graduate course requirement.

### Comprehensive Examination Plan

The M.A. program focuses on a scholarly project associated with a field of study and mastery of the technology. You meet with your committee to assess your progress on the comprehensive examination project throughout your two years in the program. Objectives of the design program are presented to students via faculty interaction, committee process, the graduate design curriculum, individual design practice, oral examination, and a master's statement exhibition of work accomplished.

## Master of Fine Arts Degree

### Admission

Admission requirements and procedures are essentially the same as for the M.A., except that the M.F.A. degree is the highest academic degree awarded in the studio disciplines of art and is conferred on the basis of outstanding achievement and consistent demonstration of quality throughout an original body of creative work. A higher standard of demonstrated ability and preparation in the area of intended study is usually applied in the portfolio review.

### Fields of Concentration

Communication imagery, image transfer, electronic imagery, computer imagery, ceramics, fiber structures, textiles, industrial design, exhibition design.

### Course Requirements

A minimum of 72 quarter units of upper division and graduate design courses is required, of which at least four units must be from Design 290 and of which at least 12 units must be devoted to a comprehensive project in your area of study.

Within those 72 units, a minimum of 52 quarter units in the 200 and 500 series must be taken in the field of specialization.

A minimum of 40 quarter units of art history in undergraduate or graduate study is required. Art history courses completed at the undergraduate level can be applied toward the 40-unit art history requirement but cannot be applied toward the 72 units required for the degree. Students with

few or no art history courses in undergraduate study may take art history upper division or graduate courses at UCLA as electives to be applied toward the 40-unit art history requirement and toward the total units required for the degree. You may substitute a maximum of 12 units in other courses that are germane to your graduate pursuit, with the faculty adviser's consent.

A total of 12 units of course 596 may be applied toward the graduate and elective course requirements for the degree.

### Comprehensive Examination Plan

The M.F.A. program focuses on the fostering of mature, professional-quality work with emphasis on experimentation and mastery of the technology associated with the field of study. You meet with your committee to assess your progress on the comprehensive examination project throughout your three years in the program. Objectives of the design program are presented to students via faculty interaction, committee process, the graduate design curriculum, design practice, oral examination, and a thesis exhibition of work accomplished.

## Lower Division Courses

**30A. Nature of Design.** Lecture, three hours; discussion, one hour. Open to nonmajors. Understanding the design process, with emphasis on development of a visual language; study of historic, scientific, technological, economic, and cultural factors influencing design in our physical environment.

**31A. Fundamentals of Design: Color.** Lecture, two hours; laboratory, four hours. Course 32A may be taken concurrently. Exploration of color in theory and practice. Development and articulation of sensory concepts. Mr. Vasa in charge

**31B. Fundamentals of Design: Form.** Lecture, two hours; laboratory, four hours. Course 32B may be taken concurrently. Interrelation of three-dimensional form concepts as foundation for creativity; origination and solution of problems. Mr. Vasa in charge

**32A. Perceptual Drawing.** Demonstration/discussion/laboratory, eight hours. Course 31A or 31B may be taken concurrently. Translation of perception through delineation, drawing, and other descriptive media.

Mr. Vasa in charge

**32B. Visual Presentation.** Studio, six hours. Prerequisite: course 32A. Course 31A or 31B may be taken concurrently. Translation of idea through delineation, drawing, and other descriptive media.

Mr. Vasa in charge

**32C. Drawing Methodologies.** Studio, eight hours. Fundamentals of graphic representation, including orthographic and isometric projection methods, mechanical drawing and drafting, layout techniques, and introductory computer-aided drafting.

Mr. Vasa in charge

**35A. Introduction to Photography.** Lecture, two hours; studio, four hours. Introduction to camera operation, photo processing, laboratory and lighting procedures.

Mr. Vasa in charge

**35B. Introduction to Tools and Processes.** Lecture, two hours; studio, four hours. Introductory design shop course to develop necessary skills with traditional tools and power equipment, including fundamentals of joining, fastening, and finishing both natural and industrial materials, and their appropriate application in fabrication of design prototypes.

Mr. Leeson

**35C. Introduction to Computer.** Lecture, two hours; studio, four hours. Introduction to the computer as a design tool and image development medium; overview of hardware and software, including microcomputers, disk operating systems (DOS), image processing systems, desktop publishing, computer loom, three-dimensional modeling and word processing systems.

Mr. Brown, Mr. Kataoka

## Upper Division Courses

### (I) Historical and Comparative Studies in Design

**161A. Ceramics.** Lecture, three hours. Prerequisite: upper division standing. Open to nonmajors. Evolution of ceramic form through geographic, social, and technological influences. Mr. Saxe

**161C. Communication Design.** Lecture, three hours. Prerequisite: upper division standing. Open to nonmajors. Study of symbols, signs, and images within social, cultural, and historical context; analysis of print and electronic forms. Mr. Brown, Mr. Kataoka

**161E. Modern Design History.** Lecture, three hours. Prerequisite: upper division standing. Open to nonmajors. Historical survey of development of Western industrial culture. Studies of major factors influencing transition from industrial societies to postindustrial information societies.

**161G. Shelter.** Lecture, three hours. Prerequisite: upper division standing. Open to nonmajors. Survey of physical determinants of shelter forms within social, cultural, and historical contexts. Analysis of impact of environment, sociocultural factors, and technology on contemporary private and public buildings.

**161H. Textiles.** Lecture, three hours. Development of textile forms through geographic, cultural, stylistic, and technological influences. Mr. Bassler

**161J. Video Imagery.** Lecture, three hours; laboratory, to be arranged. Analysis of videographic form. Mr. Kataoka

### (II) Concept and Form in Design

**162A. Ceramics.** Studio, six hours. Prerequisites: courses 31A through 35B. Introduction to ceramic materials and processes as a medium of cultural and individual expression. Investigation of handforming methods. Mr. Bermudez, Mr. Saxe

**162B. Ceramics.** Studio, six hours. Prerequisites: courses 162A, 165A, 167A, 171A. Introduction to use of potter's wheel. May be repeated after completion of courses 162B through 162F.

Mr. Bermudez, Mr. Saxe

**162C. Ceramics.** Studio, six hours. Prerequisites: courses 162A, 165A, 167A, 171A. Creative development of ceramic materials and processes, with emphasis on indirect methods of forming such as use of molds and mechanically produced ceramic elements. May be repeated after completion of courses 162B through 162F.

Mr. Saxe

**162D. Ceramics.** Studio, six hours. Prerequisites: courses 162A, 165A, 167A, 171A. Investigation of ceramic surface treatments and their relation to ceramic form; study of traditional and experimental materials and processes to achieve appropriate fired surfaces required for function and as means of creating decorative and expressive imagery. May be repeated after completion of courses 162B through 162F.

Mr. Saxe

**162E. Primitive Ceramics.** Studio, six hours. Prerequisites: courses 162A, 165A, 167A, 171A. Investigation of materials and methods of Neolithic and other early ceramic traditions. Emphasis on creative use of primitive ceramic technology to better understand the nature of clay and effects of firing. Firing in the field without a kiln. May be repeated after completion of courses 162B through 162F.

Mr. Bermudez, Mr. Saxe

**162F. Advanced Ceramics.** Studio, six hours. Prerequisites: courses 162A, 162B, 165A, 167A, 171A. Introduction of advanced technique in use of potter's wheel. Emphasis on individual creative experimentation with materials and methods introduced in courses 162A through 162E, in conjunction with advanced projects incorporating wheelformed elements. May be repeated after completion of courses 162B through 162F.

Mr. Saxe

**165A. Fundamentals of Communication Design.** Studio, six hours. Prerequisites: courses 31A through 35B. Introduction to basic elements of graphic design and development of visual communication concepts. Exploration of letterforms, typography, symbols, and imagery through graphic and electronic media.

Mr. Brown, Mr. Kataoka

**165B. Communication Design: Printed Image.** Studio, six hours. Prerequisite: course 165A. Development of concepts exploring visual potential of the graphic image. Technologies include screen printing, xerography, laser printing, ink jet, thermo dye — sublimated printing, offset lithography, video printing, and other reproduction processes. May be repeated after completion of courses 165B through 165E.

Mr. Brown, Mr. Kataoka

**165C. Communication Design: Video Image.** Studio, six hours. Prerequisite: course 165A. Use of video technology (video systems, cameras, displays, editing, storage, and reproduction devices) to integrate image, sound, time, and motion. Emphasis on expression, continuity, and sequential patterns for video communication. May be repeated after completion of courses 165B through 165E.

Mr. Kataoka, Ms. Tanaka

**165D. Communication Design: Computer Image.** Studio, six hours. Prerequisite: course 165A. Exploration of the computer as an image-generating tool. Development of visual ideas for print, television, and film applications using original images, videography, typography, and photography. May be repeated after completion of courses 165B through 165E.

Ms. Allen, Mr. Brown, Mr. Kataoka

**165E. Advanced Communication Design: Special Studies I.** Studio, six hours. Prerequisites: three courses from 165A through 165D. Synthesis of studies and media presented in courses 165A through 165D. Student initiative encouraged, with emphasis on use of two or more media. May be repeated after completion of courses 165B through 165E.

Mr. Brown, Mr. Kataoka

**165F. Advanced Communication Design: Special Studies II.** Studio, six hours. Prerequisites: minimum of three courses from 165A through 165E, consent of instructor. Emphasis on conceptual versatility based on experience in prior communication design courses. Students should be well-versed in all technologies available in program. May be repeated once.

Mr. Brown, Mr. Kataoka

**167A. Form in Industrialized Materials.** Studio, six hours. Prerequisites: courses 31A through 35B. Exploration of form in relation to industrialized materials and manufacturing processes. Application of wood, metal, plastic, paper/cardboard, and ceramic materials. Use of industrial processes and fabricating methods. Development and design of products.

Mr. Hartman

**167B. Fundamentals of Industrial Design.** Studio, six hours. Prerequisites: courses 162A, 165A, 167A, 171A. Interrelation of function, form, materials, and technology. Fundamentals of industrial design. Studies of creative problem solving and methodology in design. Systems development of mass-produced products from concept to model. Introduction to computer-aided design. May be repeated after completion of courses 167B through 167F.

Mr. Hartman

**167C. Human Factors in Product and Space Planning.** Studio, six hours. Prerequisites: courses 167A, 167B. Studies in psychological and physical requirements for designing products and spaces. Interpretation of anthropometric ergonomic information. Development of design concepts related to needs and use of objects and spaces. Computer applications included. May be repeated after completion of courses 167B through 167F.

Mr. Hartman

**167D. Industrial Design: Product Development I.** Studio, six hours. Prerequisites: courses 167A, 167B. Intermediate-level product planning, research, and development as a design tool. Studies in relation of design methodology to social and economic constraints. Development of design concepts and their realization at model and prototype stage. May be repeated after completion of courses 167B through 167F.

Mr. Hartman

**167E. Industrial Design: Product Development II.** Studio, six hours. Prerequisites: courses 167A, 167B. Product planning, research, and development of design problems and information systems of higher complexity. Application of computer-aided design. Exploration of relation of design concepts to social, economic, and environmental impacts. May be repeated after completion of courses 167B through 167F.

**167F. Advanced Industrial Design: Product Design, Research, and Innovation.** Studio, six hours. Prerequisites: courses 167A, 167B. Further studies in computer applications in industrial design, from ideation, conceptualization, and programming to model building and manufacturing.

**170A-170B. Space Planning.** Lecture, two hours; studio, four hours. Prerequisites: courses 31A through 35B. Human factors and functional requirements in determining spatial configurations and relationships.

**170A.** Emphasis on interior requirements in generating a building envelope. **170B.** Emphasis on environmental factors in creating exterior private and urban scale public spaces. May be repeated once for credit.

Mr. Hartman

**171A. Textiles: Fundamentals of Fiber, Form, and Structure.** Studio, six hours. Prerequisites: courses 31A through 35B. Introduction to terminology and scope of the field; orientation to materials and equipment; expansion of design concepts and theories toward making of fabrics; fundamental experiments in fabric making, dyeing, and patterning.

Ms. Al Hilali, Mr. Bassler

**171B. Fabric Surface.** Studio, six hours. Prerequisites: courses 162A, 165A, 167A, 171A. Patterning through use of linoprint and silk screen processes, including experiments in traditional and random patterning systems; experiments utilizing single and multiple lino and screen printings. May be repeated after completion of courses 171B through 171F.

Mr. Bassler

**171C. Fabric Dye Processes.** Studio, six hours. Prerequisites: courses 162A, 165A, 167A, 171A. Experimentation with essential dye systems and procedures, including immersion, direct application, and resist. May be repeated after completion of courses 171B through 171F.

Ms. Al Hilali, Mr. Bassler

**171D. On-Loom Textile Construction.** Studio, six hours. Prerequisites: courses 162A, 165A, 167A, 171A. Experimentation utilizing loom for structural patterning, including two- to eight-harness weaves; float and supplementary elements; introduction to computer-generated patterning. May be repeated after completion of courses 171B through 171F.

Mr. Bassler

**171E. Non-Loom Fabric Making.** Studio, six hours. Prerequisites: courses 162A, 165A, 167A, 171A. Introduction to terminology of the field, orientation to material and equipment, expansion of design concepts to construct fabrics without the loom as a tool, utilizing fiber and related pliable materials. May be repeated after completion of courses 171B through 171F.

Mr. Bassler

**171F. Textile Construction.** Studio, six hours. Prerequisites: courses 162A, 165A, 167A, 171A. Development of two- and three-dimensional structures utilizing the loom, including experiments in construction of multiple-layer weaves, experiments in manipulation of woven surface, experiments in architecturally scaled fabrics. May be repeated after completion of courses 171B through 171F.

Mr. Bassler

### (III) Proseminars in Design

**189. Topics in Design.** Lecture/discussion, three hours; laboratory, to be arranged. Prerequisite: consent of adviser and instructor. Examination by faculty members of specific problems relevant to design theory and performance. Topics announced in advance. May be repeated for a maximum of 16 units.

**193. Proseminar: Design — Senior Studies.** Proseminar, three hours. Prerequisite: consent of adviser. Open to senior and advanced students through design faculty advisers. Examination by faculty members of specific problems relevant to design theory and performance. Topics announced in advance. May be repeated twice.

**197. Honors Course.** Hours to be arranged. Prerequisites: 3.0 GPA overall, 3.5 GPA in major, consent of instructor, junior or senior standing. Individual studies for majors. May be repeated once for credit.

**199. Special Studies in Art (2 to 8 units).** Hours to be arranged. Prerequisites: 3.0 GPA in major, consent of instructor, senior standing. Individual studies for majors. May be taken for a maximum of eight units.

## Graduate Courses

Prerequisite for all courses: consent of instructor. All courses may be repeated for credit (unless otherwise noted) on recommendation of the adviser; they are not open to undergraduate students.

**280. Communication Design: Graphics/Video/Computer (2 to 8 units).** Studio, two to four hours. Advanced exploration of graphic and electronic imaging processes. Emphasis on research and individual creative manipulation of graphic media and electronic technologies. Development of original concepts and expressive applications.

Mr. Brown, Mr. Kataoka

**284. Ceramics (2 to 8 units).** Studio or studio/seminar, to be arranged. Prerequisite: consent of instructor. Advanced creative research utilizing ceramic media. Emphasis on development of original, expressive, individually produced ceramic art.

Mr. Saxe

**287. Form and Structure (2 to 8 units).** Studio or studio/seminar, to be arranged. Prerequisite: consent of instructor. Exploration of form, with emphasis on expressive experimentation in materials and processes.

Mr. Vasa

**288. Fiber Structures (2 to 8 units).** Laboratory, two to four hours. Advanced formative work in traditional and experimental processes of fabric construction utilizing fiber media.

Mr. Bassler

**290. Design Seminar: Collaborative View.** Seminar, three hours. Critical and theoretical examination of concepts underlying the creative process, including initiation of an idea, its development, and its social and historical context.

**292. Shelter (2 to 8 units).** Development of individual projects to investigate concepts of shelter. Exploration of traditional and contemporary forms, methods, and materials.

**293. Interior Space Design (2 to 8 units).** Concept and practice of designing interior spaces. Evaluation of visual and functional needs for interior spaces (ranging from personal to social spaces) in two- and three-dimensional projects involving color, light, surface, materials, equipment, furniture, etc.

**294. Industrial Design (2 to 8 units).** Laboratory, two to four hours. In-depth studies in topics such as design and management, person/object compatibility, visual identity programs, containing systems, transportation, design for developing countries, ergonomics, urban components, area studies, materials, and processes.

**295. Exhibition Design (2 to 8 units).** Laboratory, two to four hours. Interpretation and presentation of materials for exhibition. Students may elect to work with instructor and gallery staff on regularly scheduled productions or they may outline their own project and proceed by producing studies, renderings, or schematics or by fabricating models.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research (2 to 8 units).** Prerequisite: consent of instructor.

The Department of Design reserves the right to hold for exhibition purposes examples of any work done in classes and to retain for the permanent collection of its galleries such examples as may be selected.

# Ethnomusicology and Systematic Musicology

2539 Schoenberg Hall Annex,  
(310) 206-3033

## Professors

Charlotte A. Heth, Ph.D.  
Nazir A. Jairazbhoy, Ph.D.  
James W. Porter, M.A., *Chair*  
A. Jihad Racy, Ph.D.  
Peter C. Crossley-Holland, M.A., *Emeritus*  
Mantle L. Hood, Ph.D., *Emeritus*  
William R. Hutchinson, Ph.D., *Emeritus*  
J.H.K. Nketia, B.A., *Emeritus*

## Associate Professors

Jacqueline C. DjeDje, Ph.D.  
Roger Kendall, Ph.D.  
Steven J. Loza, Ph.D.  
Timothy Rice, Ph.D.

## Lecturers

Kobla Ladzekpo, M.A.  
Danny Lee  
Ernest Siva, M.M.  
Ikuko Yuge, B.A.  
Tsun Y. Lui, *Emeritus*  
Suenobu Togi, *Senior Emeritus*

## Adjunct Professor

Benjamin Suchoff, Ed.D.

## Scope and Objectives

Ethnomusicology is a research field that combines the various techniques of musical analysis with the methods of the social sciences and humanities (i.e., the study of cultural systems including music). Although originally focused on folk, tribal, and Asian classical music traditions, ethnomusicology at UCLA includes the study of all styles of music in the world, including popular music, jazz, and even Western classical music when approached from a cultural analysis perspective. The undergraduate and graduate programs in ethnomusicology provide students with broad knowledge of world musics and methods currently used in their study.

The object of systematic musicology, a multidisciplinary field, is to answer fundamental questions on the nature and properties of music, not only as art but as empirical phenomena. At UCLA, this research orientation integrates the perspectives of aesthetics and philosophy, music theory, acoustics, sociology, psychology, organology, and semiotics, any of which can be cross-cultural, focusing on the systems or models discernible through these disciplines.

## Bachelor of Arts in Ethnomusicology

### Admission

Applicants are reviewed individually, based on a questionnaire, grade-point average, two let-

ters of recommendation, test scores, and a personal statement of purpose.

### Preparation for the Major

*Required:* Ethnomusicology and Systematic Musicology 10A-10B-10C, 20A-20B-20C, and 16 units of performance organizations (courses 91A-91Z).

### The Major

*Required:* Ethnomusicology and Systematic Musicology M180, 181, C190A, six elective courses selected from 106A, 106B, 106C, 108A, 108B, M110A, M110B, 113 through 121, M126, 128, 130, 136A through 172B, 174, 176, C179, 199E, 199S, and four upper division courses from other departments related to your area of concentration and selected in consultation with a faculty adviser.

## Master of Arts in Ethnomusicology

### Admission

Applicants for the M.A. in either program must have completed a bachelor's degree in music or related fields of study. If your degree is not in music, you must provide evidence of your musical ability. You are required to submit (1) official transcripts of record, (2) a clear statement of purpose, (3) three letters of recommendation, (4) a research or term paper, and (5) proof of musical background or performance ability interpreted on a worldwide scale. For students with a bachelor's degree in music, the degree itself satisfies the musical background requirement. For students in other fields, the requirement is satisfied by official transcripts showing at least two years of music coursework, including music history and theory, or by an audition or monitored recording of any musical tradition.

### Foreign Language Requirement

Reading knowledge of English and one other language relevant to your research and approved by the faculty is required. The requirement may be fulfilled by (1) passing the Graduate School Foreign Language Test (GSFLT) with a score of 500 or better, (2) passing an examination administered by the department or another University department if no GSFLT is available in your selected language, or (3) completing the fifth term in the language with a grade of B or better, or (4) demonstrating literacy through submission of transcripts or other documents.

### Course Requirements

A minimum of nine upper division and graduate courses is required, at least five of which must be at the graduate level. All candidates are required to take Ethnomusicology and Systematic Musicology 200, C201A, and one musical area seminar.

Students in ethnomusicology must also take courses C201B, 281A, 282, one additional musical culture area course, one anthropology

course, and a minimum of two terms of ethnomusicology performance organizations (courses 91A-91Z), which may not be applied toward your degree (not required for systematic musicology students). Students in the systematic musicology option must also take course C203, one course from 271, 273, 275, 283, or Musicology 269, and two terms of course 279. You may apply one term of course 292F toward your elective requirements.

You may select your remaining electives from all other upper division and graduate courses in the department, as well as from selected courses in Western music, a related discipline, or a particular area outside the department approved by your mentor.

If you have not taken courses 20A-20B-20C or their equivalent, you must audit them (unless you are in the systematic musicology option). Course 290 may be taken or audited but may not be applied toward the minimum graduate course requirement (you are encouraged to participate in course 290 in Spring Quarter when it functions as a general colloquium). No more than four units of 500-series courses may be applied toward the M.A. requirements.

### Thesis Plan

You are required to submit an extended essay or other equivalent presentation involving the original investigation of a problem or subject of limited scope. The thesis topic, its presentation, and your thesis committee must be approved by the program faculty before the committee can be appointed. Your presentation must demonstrate significant style, organization, creativity, and depth of understanding of the subject. You must complete the thesis within three years after you begin your M.A. coursework. If you do not, you normally must take the comprehensive examination (not applicable to the systematic musicology option) at the end of your third year in order to be considered for the Ph.D. program.

### Comprehensive Examination Plan

This plan is not available to students in the systematic musicology option.

Students in ethnomusicology must first submit a research paper written during their master's studies to demonstrate their writing and scholarly abilities. After the paper is accepted, you take two written examinations, one in theory and method in ethnomusicology and one in a world music culture area or other approved topic reflecting your course of study. Failed examinations may be retaken only once during the following year. You must complete the comprehensive examination plan within three years after you begin your M.A. coursework.

### Final Examination

The final examination is oral and includes discussion of both the thesis and related matters.

A final oral examination is required under both plans, providing opportunity for you to defend

your thesis or research paper and written examination responses, and for your committee to explore further your suitability for admission to the doctoral program.

## Ph.D. in Ethnomusicology

### Admission

Applicants for the Ph.D. program in either area must normally have completed an M.A. or equivalent degree in one of the following: ethnomusicology, Western music, a non-Western music tradition, a related discipline, or area studies with a music specialization. If your qualifications do not meet the requirements for the department's M.A. degree, you must complete remedial coursework, as recommended by the department, before beginning the Ph.D. program.

### Foreign Language Requirement

Reading knowledge of English and two other languages relevant to your research and approved by the faculty is required. Normally one of the two other languages should be either French or German. See "Foreign Language Requirement" under the Master of Arts degree for testing procedures.

### Course Requirements

If you have an M.A. in Ethnomusicology from UCLA, you must take 10 additional courses, including one musical culture seminar, one course from Ethnomusicology and Systematic Musicology 271, 273, 275, 282, or 283 (systematic musicology students may also select Musicology 269), three terms of course 290 (systematic musicology students may substitute three terms of course 279), and at least three terms of ethnomusicology performance organizations — courses 91A-91Z (not required for systematic musicology students). You may apply one term of course 292F toward your elective requirements.

You may select your remaining electives from all other upper division and graduate courses in the department, as well as from selected courses in Western music, a related discipline, or a particular area outside the department approved by your mentor.

If you do not have an M.A. in Ethnomusicology from UCLA, you may be required, in consultation with your mentor, to take other relevant and necessary courses beyond the 10 specified.

No more than two 500-series courses and two courses outside the department may be applied toward the Ph.D. degree requirements.

### Qualifying Examinations

When you and your guidance committee believe you are ready to take the qualifying examinations, you should take a schedule to the Student Services Office listing the order in which the examinations are to be taken. The Student Services Office staff acts as proctor for the tests. The written examinations should be completed within a three-week period. Re-

peat examinations, if necessary, must be scheduled in consultation with the guidance committee. The departmental "guidance oral" is usually scheduled as soon as feasible after completion of the written examinations.

After passing the departmental examinations, you may submit your dissertation proposal and request for a doctoral committee. This committee administers the University Oral Qualifying Examination.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Dissertation/Final Oral Examination

The dissertation is an extended monograph; a final oral examination is required by the department.

## Lower Division Courses

**1A-1B. Fundamentals of Sound and Music of the World (2 units, 4 units).** Lecture, two hours; laboratory, one hour. Prerequisite: consent of instructor. Acoustical makeup of sound (pitch, tone quality); tuning systems; modes and scales; harmony and polyphony; rhythm and meter; notational systems; relationships of music to culture. Laboratory includes ear training and instrumental techniques. (F,W)

**10A-10B-10C. World Music Theory and Musicianship.** Lecture, two hours; discussion, four hours; laboratory, two hours. Prerequisite: consent of instructor. Limited to ethnomusicology and world arts and cultures majors. Course 10A is prerequisite to 10B, which is prerequisite to 10C. Introduction to and participation in musical systems of selected world cultures through aural and written notations, vocal and instrumental skills, melodic and rhythmic dictation, improvisation, and composition. (F,W,Sp)

**20A-20B-20C. Musical Cultures of the World.** Survey of musical cultures of the world (excluding Western art music), role of music in society and its relationship to other arts; consideration also to scale structure, instruments, musical forms, and performance standards. **20A.** Europe and the Americas; **20B.** Near East and Africa; **20C.** South Asia, Southeast Asia, and the Far East. Mr. Racy, Mr. Rice (F,W,Sp)

**91A-91Z. World Music Performance Organizations (2 units each).** Activity, three hours. Prerequisite: consent of instructor. Group performance of traditional vocal and instrumental music of world cultures. May be repeated for credit without limitation. P/NP or letter grading. **91A.** Music and Dance of the American Indians; **91B.** Music of Bali; **91C.** Music and Dance of the Balkans; **91D.** Music of China; **91E.** Music and Dance of Ghana; **91F.** Music of India; **91G.** Music of Japan; **91H.** Music of Java; **91J.** Music of Korea; **91K.** Music of Mexico; **91L.** Music of Persia; **91M.** Music of Thailand; **91N.** Music of the Near East; **91P.** Music of Afro-Americans; **91Z.** Open Ensemble. (F,W,Sp)

## Upper Division Courses

**106A-106B-106C. Music of the American Indians.** American Indian music studied within broader context of styles, cultural values, and sources, including films, recordings, lectures, and limited group singing and dancing. **106A.** Eastern California-Yuman, Great Basin, and Northwest Coast Areas; **106B.** Athabascan, Pueblo, Plains, and Modern Pan-Indian Trends; **106C.** Sociology of American Indian Music. Ms. Heth (Sp)

**108A-108B. Music of Latin America.** Prerequisite: consent of instructor. Course 108A is not prerequisite to 108B. Survey of traditional and contemporary musical culture. **108A.** Mexico, Central America, and the Caribbean Isles; **108B.** Latin South America.

Mr. Loza

**M110A-M110B. The Afro-American Musical Heritage.** (Same as Folklore M154A-M154B.) Lecture, three hours. Prerequisite: consent of instructor. Study of African music and its impact on the Americas; survey of development of various Afro-American musical genres from slave era to the present, including traditions in the West Indies and Central and South America.

Ms. DjeDje

**M111. Ellingtonia.** (Same as Afro-American Studies M145.) Music of Duke Ellington, his life, and far-reaching influence of his efforts. Ellington's music, known as "Ellingtonia," is one of the largest and perhaps most important bodies of music ever produced in the U.S. Covers the many contributions of other artists who worked with Ellington, such as composer Billy Strayhorn and musicians Johnny Hodges, Cootie Williams, and Mercer Ellington.

Mr. Burrell (W)

**113. Music of Brazil.** Lecture, three hours. Prerequisite: consent of instructor. History of ethnic and art music in Brazil, with some reference to Portuguese antecedents.

Mr. Loza

**115. Musical Aesthetics in Los Angeles.** Lecture, three hours. Confronting aesthetics from classical perspective of art as intuition, examination on a cross-cultural basis of diverse musical contexts within the vast multicultural metropolis of Los Angeles, with focus on various musical networks and specific experiences of the Chicano/Latino, African American, American Indian, Asian, rock culture, Western art music tradition, and the commercial music industry.

Mr. Loza (W)

**117. American Popular Music.** Survey of history and characteristics of American popular music and its relationship to American culture, with emphasis on 20th-century popular music and its major composers, including comparison between traditional pre-1950 popular music and trends in post-1950 popular music.

Ms. Heth

**118. Development of Rock.** Prerequisite: consent of instructor. History of rock from the 1950s to the 1970s. In-depth survey of stylistic trends illustrated by pertinent examples and accompanied by extensive musical analysis.

**120A-120B. Development of Jazz.** Introduction to jazz; its historical background and its development in the U.S.

Ms. Heth (F,W)

**121. Cross-Cultural Perspectives in Jazz.** Prerequisite: consent of instructor. Exploration of assimilation and retention of jazz from the U.S. in various countries, with particular emphasis on cultural and social features which form the basis for new jazz-ethnic music blends.

**123. Music of Bebop.** Lecture, three hours. Study of jazz bebop tradition, including analysis of compositions and song forms, styles of improvisation, and developments from 1940 to the present. (Sp)

**M124. Anglo-American Folk Song.** (Same as English M111B and Folklore CM106.) Survey of Anglo-American balladry and folk song, with attention to historical development, ethnic background, and poetic and musical values.

Mr. Porter

**M126. Folk Music of Western Europe.** (Same as Folklore M181.) Prerequisite: consent of instructor. Introduction to forms and styles of traditional music in Western Europe. Historical and ethnological perspectives on this music combined with numerous recorded examples from major cultural subdivisions of the region.

Mr. Porter

**128. Folk Music of Eastern Europe.** Prerequisite: consent of instructor. Introduction to forms and styles of traditional music in Eastern Europe (including the Balkans). Historical and ethnological aspects of the music illustrated by numerous recorded examples from major cultural subdivisions of the area.

Mr. Porter

**130. Folk Music of the Mediterranean.** Lecture, three hours. Prerequisite: consent of instructor. Introduction to forms and styles of traditional music in the Mediterranean basin, particularly features of contrast, similarity, and cross-cultural interaction. Historical and ethnological aspects of the music illustrated by numerous recorded examples from major cultural subdivisions of the area. Mr. Racy

**CM132. Celtic Folk Music.** (Same as Folklore CM132.) Prerequisite: consent of instructor. Survey and analysis of indigenous traditional music in lands where a Celtic language is or was spoken into modern times. Instrumental and vocal genres, context and performance, social value and ideology. Concurrently scheduled with course CM232. P/NP or letter grading. Mr. Porter

**136A-136B. Music of Africa.** Prerequisite: consent of instructor. Investigation of historical aspects, social functions, musical instruments, and relationships of music to other art forms in selected areas of Africa. Ms. Djedje

**146. Folk Music of South Asia.** Lecture, three hours; laboratory, one hour. Prerequisite: consent of instructor. Illustrated survey of some regional genres, styles, and musical instruments found in India and Pakistan, with special reference to religious, social, economic, and cultural context of their occurrence. Mr. Jairazbhoy

**147. Survey of Classical Music in India.** Examination of melodic, metric, and formal structures of Indian classical music in context of religious, sociocultural, and historical background of the country. Mr. Jairazbhoy

**156A-156B. Music of China.** Lecture, three hours; laboratory, two hours. Prerequisite: consent of instructor. **156A.** History and theory of music of China, including survey of various provinces and their instrumental techniques. **156B.** Prerequisite: course 156A. Introduction to various notational systems. Analysis of representative styles. Mr. Jairazbhoy

**157. History of Chinese Opera.** Prerequisite: consent of instructor. Survey of dramatic elements in Chinese operas, incorporating singing, dance, and acrobatics. Emphasis on traditional and modern Peking opera and its relation to Cantonese and other genres.

**158A-158B-158C. Studies in Chinese Instrumental Music.** Lecture, three hours; laboratory, one hour. Prerequisite: consent of instructor. **158A.** Study of literature, major sources, paleography, theory, and philosophy of the Ch'in, including transcription and analysis. **158B.** Study of literature, major sources, paleography, theory, and philosophy of the P'i P'a, including transcription and analysis. **158C.** Comprehensive study of Chinese musical instruments, classification system, specific musical notation, and use in context of Chinese society. (F,W,Sp)

**160A. Survey of Music in Japan.** Lecture, three hours. Survey of main genres of Japanese traditional music, including Gagaku, Buddhist chant, Biwa music, Koto music, Shamisen music, and music used in various theatrical forms.

**160B. Studies in Japanese Court Music.** Lecture, two hours; laboratory, one hour. Prerequisite: minimal musical ability. In-depth study of Japanese court music, including historical background, with emphasis on understanding the instrumental techniques and notation of various instruments of the court orchestra. Mr. Togi, Ms. Yuge

**170. Acoustics.** Lecture, three hours. Prerequisite: consent of instructor. Interrelationship of acoustical and musical phenomena. Tuning systems, consonance and dissonance, tone quality. Lecture, demonstration, and discussion; tours of instrumental collections and acoustical research facilities. Mr. Kendall

**172A-172B. Psychology of Music. 172A.** Designed for nonmajors. Introduction to psychology of music: historical background and the broad field of study, including use of music as a stimulus, tests and measurements, and related modes of musical behavior. **172B.** Prerequisite: course 172A or consent of instructor. Study of psychological factors and problems in music from points of view of listener, performer, and composer. Mr. Kendall

**173. Experimental Research in Music.** Prerequisite: consent of instructor. Recommended for music majors in all specializations. Theories and processes in various modes of musical experimentation: physical, perceptual, psychological, pedagogical, quantificational, statistical procedures. Mr. Kendall

**174. Aesthetics of Music.** Lecture, three hours. Designed for nonmajors. Historical survey of musical aesthetic thought and practice. Selected readings and musical examples.

**176. Problems in Musical Aesthetics.** Prerequisite: course 174 or consent of instructor. Critical approach to musical problems of aesthetic analysis, description, values, theories, including both Western and non-Western considerations. Mr. Kendall

**C179. Proseminar: Systematic Musicology.** Lecture, three hours. Prerequisite: consent of instructor. Introduction to systematic musicology, including basic readings in aesthetics/philosophy; anthropology, sociology, and ethnomusicology; psychology and acoustics. May be concurrently scheduled with course C203. Mr. Kendall

**M180. Analysis of Traditional Music.** (Same as Folklore M180.) Prerequisite: consent of instructor. Intensive study of methods and techniques necessary to understand traditional music. Mr. Porter

**181. Anthropology of Music.** Prerequisite: consent of instructor. Cross-cultural examination of music in context of social behavior and how musical patterns reflect patterns exhibited in other cultural systems, including economic, political, religious, and social structure. Mr. Rice

**C190A-C190B. Proseminars: Ethnomusicology.** Lecture, three hours. Prerequisites: courses 10A-10B-10C and 20A-20B-20C, or consent of instructor. May be concurrently scheduled with courses C201A-C201B. Mr. Loza, Mr. Racy

**199E. Special Studies in Ethnomusicology (2 to 4 units).** Hours to be arranged. Prerequisites: senior standing, 3.0 GPA, consent of instructor and department chair. Individual studies in ethnomusicology resulting in research project. May be repeated for a maximum of eight units. Ms. Heth and the Staff

**199S. Special Studies in Systematic Musicology (2 to 4 units).** Hours to be arranged. Prerequisites: senior standing, 3.0 GPA, consent of instructor and department chair. Individual studies in systematic musicology resulting in research project. May be repeated for a maximum of eight units. Mr. Kendall and the Staff

## Graduate Courses

**200. Research Methods and Bibliography (6 units).** (Formerly numbered Music 200B.) Lecture, three hours. Prerequisite: graduate standing. Not open to students with credit for former Music 200B. Guided writing, utilizing specific bibliography, in ethnomusicology and systematic musicology. Mr. Kendall, Mr. Loza (W)

**C201A-C201B. Proseminars: Ethnomusicology.** (Formerly numbered Music C290A-C290B.) Lecture, three hours. Prerequisites: graduate standing, consent of instructor. Not open to students with credit for former Music C290A-C290B. Basic literature and schools of thought in the field of ethnomusicology from the late 19th century to the present. May be concurrently scheduled with courses C190A-C190B. Additional assignments, as well as evidence of greater depth of study, required of graduate students. Mr. Loza, Mr. Racy

**C203. Proseminar: Systematic Musicology.** (Formerly numbered Music C291.) Lecture, three hours. Prerequisite: consent of instructor. Not open to students with credit for former Music C291. Introduction to systematic musicology, including basic readings in aesthetics/philosophy; anthropology, sociology, and ethnomusicology; psychology and acoustics. May be concurrently scheduled with course C179. Mr. Kendall

**207. Seminar: North American Indian Music.** (Formerly numbered Music 288.) Seminar, three hours. Prerequisite: course 106A or 106B or 106C or consent of instructor. Not open to students with credit for former Music 288. Survey of representative musical styles of Native North American Indians, including problems of transcription, methods of analysis, symbolic implications of song texts. Emphasis on interrelationship between music and cultural context. Influence of Western music in acculturative contexts. Ms. Heth

**208. Seminar: Latin American Music.** Seminar, three hours. Prerequisite: consent of instructor. Review of bibliographic, methodological, and philosophical bases of musical research in Latin America, working from both general and specific perspectives. Exploration of research problems and investigations on specific musical cultures and distinct genres of musical expression. Mr. Loza (Sp)

**211. Seminar: Afro-American Music.** (Formerly numbered Music 289.) Seminar, three hours. Prerequisites: courses M110A-M110B or consent of instructor, graduate standing. Not open to students with credit for former Music 289. Intensive investigation of problems, theories, and methods of research related to study of Afro-American music. Emphasis on relationship of problems to representative styles of Afro-American music. Ms. Djedje

**228. Seminar: Balkan Music.** (Formerly numbered Music 279.) Seminar, three hours. Prerequisite: course 128 or consent of instructor. Major issues in study of Balkan music, including song text analysis, music instruments, dance music, rituals and customs, minorities, and ideology. Mr. Rice

**CM232. Celtic Folk Music.** (Same as Folklore CM232.) Prerequisite: consent of instructor. Survey and analysis of indigenous traditional music in lands where a Celtic language is or was spoken into modern times. Instrumental and vocal genres, context and performance, social value and ideology. Concurrently scheduled with course CM132. S/U or letter grading. Mr. Porter

**237. Seminar: African Music.** (Formerly numbered Music 287.) Seminar, three hours. Prerequisite: course 136A or 136B or consent of instructor. Not open to students with credit for former Music 287. Intensive investigation of musical style; historical, social, and cultural aspects of indigenous musical traditions and related art forms. Ms. Djedje

**240. Music of Arabic-Speaking Near East.** (Formerly numbered Music 284.) Lecture, three hours. Prerequisite: course 282 or course in ear training, analysis, and theory or consent of instructor. Not open to students with credit for former Music 284. Investigation of historical and cultural backgrounds, main musical styles, relationship between theory and practice and emphasis on mode and improvisation, and 20th-century trends. Concurrent participation in Near East performance ensemble (course 91N) required. Mr. Racy

**241. Music of Iran and Other Non-Arabic-Speaking Communities.** (Formerly numbered Music 282.) Lecture, three hours. Prerequisite: course 282 or course in ear training, analysis, and theory or consent of instructor. Not open to students with credit for former Music 282. Comparative study of music of Iran and other related areas, including Turkey, with particular reference to their historical and cultural background, sources on music theory and aesthetics, instruments, style, technique of improvisation, and contemporary practice. Concurrent participation in Near East performance ensemble (course 91N) required. Mr. Racy

**248A-248B. Classical Music of India.** (Formerly numbered Music 286A-286B.) Lecture, three hours. Prerequisite: course 146 or 147 or consent of instructor. Not open to students with credit for former Music 286A-286B. Study of history, theory, and practice of north and south Indian classical music. During first term, emphasis on music history and traditional theory; second term, analysis of present-day forms, styles, techniques, and musical instruments. Concurrent participation in Indian performance group (course 91F) required. Mr. Jairazbhoy



**250A-250B. Music of Indonesia.** (Formerly numbered Music 281A-281B.) Lecture, three hours. Prerequisite: course 20C or consent of instructor. Not open to students with credit for former Music 281A-281B. During first term, emphasis on music and related performing arts of Java. Focus on music and performing arts of Bali and other Indonesian islands during second term. Concurrent participation in one Indonesian performance group (course 91B or 91H) required.

Mr. Jairazbhoy

**252. Seminar: Music of Mainland Southeast Asia.** (Formerly numbered Music 278.) Seminar, three hours. Prerequisite: course 20C or consent of instructor. Presentation of materials concerning musical performance traditions of Laos, Cambodia, Vietnam, Thailand, and Burma, both in mainland Southeast Asia and in the American context, with perspectives from archaeology, history, performance theory, applied anthropology, and ethnomusicology.

Mr. Jairazbhoy

**271. Seminar: Acoustics of Music (6 units).** (Formerly numbered Music 273.) Seminar, three hours. Prerequisite: course 170 or consent of instructor. Selected topics in acoustics, including laboratory methodologies and practical applications. Topics include Western and non-Western instruments, tuning systems, psychoacoustics, and methods of spectral analysis. May be repeated once for credit.

Mr. Kendall

**273. Seminar: Psychology of Music (6 units).** (Formerly numbered Music 276.) Seminar, three hours. Prerequisite: course 173 or consent of instructor. Selected topics in psychology of music, including recent findings in brain research, musical perception, learning, cognition, memory, therapy, affect, meaning, and measurement. May be repeated once for credit.

Mr. Kendall

**275. Seminar: Aesthetics of Music (6 units).** (Formerly numbered Music 275.) Seminar, three hours. Prerequisite: course 176 or consent of instructor. Specific topics in Western and non-Western aesthetic thought, including value, meaning (semiotics), historical development of theoretical perspectives and critical theory, and interpretation. May be repeated once for credit.

**279. Seminar: Systematic Musicology.** (Formerly numbered Music 272.) Seminar, three hours. Prerequisites: course 170, consent of instructor. Exploration of specific topics in general field of systematic musicology covering disciplines such as anthropology, acoustics, aesthetics, music perception, philosophy, organology, sociology, and experimental approaches. May be repeated for credit.

Mr. Kendall

**281A-281B. Seminars: Field and Laboratory Methods in Ethnomusicology (6 units each).** (Formerly numbered Music 254A-254B.) Seminar, three hours. Prerequisites: courses C201A-C201B. Fieldwork concepts and methods using technical equipment, conducting interviews, dealing with ethical issues, and designing research projects.

Ms. Heth, Mr. Jairazbhoy

**282. Seminar: Notation and Transcription in Ethnomusicology (6 units).** (Formerly numbered Music 253.) Seminar, three hours. Prerequisites: courses 20A-20B-20C and C201A-C201B, or consent of instructor. Not open to students with credit for former Music 253. Survey of notations used in Western and non-Western musical cultures, with emphasis on notations used in ethnomusicology. Discussion of various types of mechanical sound registration equipment. Practical instruction in preparing musical notations and designing other types of diagrams useful in ethnomusicology.

**283. Seminar: Study of Musical Instruments (Organology) (6 units).** (Formerly numbered Music 255.) Seminar, three hours. Prerequisites: courses C201A-C201B or consent of instructor. Musical instruments studied in terms of their structures, performance contexts, cultural significance, and patterns of change.

Mr. Racy

**284. Seminar: Anthropology of Music.** (Formerly numbered Music 277.) Prerequisites: courses C201A-C201B. Analysis of current anthropological paradigms and issues that have major impact on ethnomusicology.

Mr. Rice

**285. Seminar: Comparative Music Theory (6 units).** (Formerly numbered Music 248.) Seminar, three hours. Prerequisite: consent of instructor. Not open to students with credit for former Music 248. Comparative study of codified music theories of select cultures — Western and non-Western — considered in themselves and as expressions of their societies. Theory considered as a science of music; its place between cultural values and artistic practice in different civilizations.

Mr. Jairazbhoy

**M287. Seminar: Folk Music.** (Formerly numbered Music M258.) (Same as Folklore M258.) Seminar, three hours. Prerequisite: consent of instructor. Not open to students with credit for former Music M258.

Mr. Porter

**290. Seminar: Ethnomusicology (6 units).** (Formerly numbered Music 280.) Seminar, three hours. Prerequisites: courses 20A-20B-20C, 200, and C201A-C201B, or consent of instructor. May be repeated for credit.

Mr. Racy, Mr. Rice

**292A-292Z. Seminars: Special Topics in Ethnomusicology.** (Formerly numbered 292.) Prerequisites: graduate standing, consent of instructor. Designed to utilize special interests and expertise of regular and visiting faculty; topics of current interest presently offered in ethnomusicology program.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**495. Introductory Practicum for Teaching Apprentices in Ethnomusicology and Systematic Musicology (2 units).** Eight weekly two-hour sessions, plus intensive training session during Fall Quarter registration week. Prerequisite: appointment as teaching apprentice in Ethnomusicology and Systematic Musicology Department. Required of all new teaching apprentices. Special course dealing with problems and practices of teaching ethnomusicology and systematic musicology at college level. May not be applied toward degree requirements. S/U grading.

Ms. Heth

**596. Directed Individual Studies (2, 4, or 6 units).** (Formerly numbered Music 596B.) Only four units may be applied toward M.A. minimum course requirements.

**597. Preparation for Master's Comprehensive Examination or Ph.D. Qualifying Examinations (2 or 4 units).** May be repeated for credit. S/U grading.

**598. Guidance of M.A. Thesis (4, 8, or 12 units).** May be repeated for credit. S/U grading.

**599. Guidance of Ph.D. Dissertation (4, 8, or 12 units).** May be repeated for credit. S/U grading.

## Music

2539 Schoenberg Hall Annex,  
(310) 825-4761

### Professors

Alden Ashforth, Ph.D.  
Elaine R. Barkin, Ph.D.  
Thomas F. Harmon, Ph.D.  
D. Thomas Lee, D.M.A.  
Vitaly Margulis, M.M.  
Donald Neuen, M.A.  
Paul V. Reale, Ph.D.  
Jon Robertson, D.M.A., *Chair*  
Robert S. Winter, Ph.D.  
Paul E. Des Marais, M.A., *Emeritus*  
Maurice Gerow, Ph.D., *Emeritus*  
Frederick F. Hammond, Ph.D., *Emeritus*  
Henri Lazarof, M.F.A., *Emeritus*  
Roy E. Travis, M.A., *Emeritus*

### Associate Professor

Roger Bourland, Ph.D.

### Assistant Professor

Ian Krouse, Ph.D.

### Lecturers

Gerald E. Anderson, M.S.  
Linda Anderson, M.S.  
Gary G. Gray, M.M., *Senior*  
Mario Guarneri, M.S.  
John L. Hall, M.M., *Senior*  
Gordon Henderson, M.M.E.  
Katherine Hickey  
John T. Johnson, B.M.  
Lou Anne Neill, M.A.  
Theodore Norman  
Barbara Northcutt, B.M.  
Mitchell T. Peters, M.M.  
Sheridon W. Stokes, *Senior*  
Alexander Treger  
Aube Tzerko, B.M., *Senior*  
Paul Zibits, M.M.  
Maureen D. Hooper, Ed.D., *Senior Emerita*  
Bess Karp, M.A., *Senior Emerita*  
Samel Krachmalnick, *Senior Emeritus*  
Donn E. Weiss, M.M., *Senior Emeritus*

### Visiting Professor

Dorothy Warenskjold, B.A.

### Visiting Associate Professor

Heinz Blankenburg

### Adjunct and Visiting Assistant Professors

William Booth, M.M., *Adjunct*  
W. Lumpkin, M.A., *Visiting*  
Ick-Choo Moon, D.M.A., *Visiting*  
Timothy Mussard, D.M.A., *Visiting*  
Antoinette Perry, D.M.A., *Adjunct*  
Russell Steinberg, Ph.D., *Visiting*  
John Steinmetz, M.F.A., *Adjunct*  
Richard Todd, B.M., *Adjunct*  
Evan Wilson, *Adjunct*  
Kari Windingstad, B.A., *Visiting*  
Peter Yates, M.F.A., *Adjunct*

## Scope and Objectives

Students interested in a concentration in music history and literature should consider the major in musicology offered through the College of Letters and Science; those interested in a concentration in world music should consider

## History/Art History (Interdepartmental)

For details on this undergraduate major, see Chapter 5 on the College of Letters and Science.

the major in ethnomusicology offered through the School of the Arts.

The four-year Bachelor of Arts curriculum in Music is a classically oriented, balanced program of practical, theoretical, and historical studies, with related performance and academic studies in non-Western music. The major, designed for students who want to combine fine musicianship with academic excellence, is based on a core curriculum of theory, history, analysis, and individual and group performance. Given in the context of a liberal education, this provides a foundation for an academic or professional career and affords valuable cultural background.

At the graduate level, specialized studies leading to the degrees of Master of Arts and Doctor of Philosophy are offered in composition; specialized studies leading to the degree of Master of Fine Arts (performance practices) are offered in all classical solo instruments, voice, opera, and conducting.

## Bachelor of Arts Degree

### Admission

All applicants for admission and change of major are required to pass an audition in their principal performing medium.

### Preparation for the Major

*Required:* Music 20A, 20B, 20C; 12 units from 60A through 65; two years (12 units) of performance organizations (courses 90A through 90N or Ethnomusicology and Systematic Musicology 91A-91Z) for a letter grade; and Musicology 26A-26B-26C. You must participate in a minimum of two different organizations over the course of your stay at UCLA, one of which must be from courses 90A through 90H or Ethnomusicology and Systematic Musicology 91A-91Z. In addition, you are required to take one college year — or at least one course at level three — of French, German, Italian, or Spanish, which may be used to fulfill the school language requirement.

### The Major

*Required:* A minimum of 48 units in upper division, including Music 120A, 120B, one course from 102, 105, 120C (individual specializations may specify a given course), Musicology 126A-126B-126C, and six courses selected from one of the specializations listed below.

*Composition* — Music 106A, 106B, 120C, 123A-123B-123C, and at least one course from 101, 109A, 109B, 109C, 116, 117, 118A, 118B, C122, additional terms of 123A-123B-123C, 156, C176, 199, Ethnomusicology and Systematic Musicology 117, 128, 130, 136A, 136B, 146, 156A, 156B, 157, 158A, 158B, 158C, 160A, 160B, 170, 181. In addition, you must have an original work completed and ready for rehearsal and performance on campus during your senior year.

*Music Education* — Music 100A-100B-100C, 116, 117, 120C, eight units from 115A through

115E. You are encouraged to take additional coursework from 112A, 112B, 118A, 118B, 199, Ethnomusicology and Systematic Musicology 170, 172B, 174 as your schedule allows. You are also encouraged to enroll in the type of performance organizations (courses 90A through 90N) that you plan to teach. If you are considering a music education specialization, you are encouraged to meet with a music education adviser during your freshman year.

*Performance* — Twelve units in performance instruction courses 160A through 165 (including junior and senior recital requirements), four units of chamber ensembles (Music 175), four units of elective courses from 101, 106B, 112A, 112B, 116, 117, 118A, 118B, 151A, 151B, 199, Musicology C127A through C127F, 130, 133, 134, 135A, 135B, 135C, 139, Ethnomusicology and Systematic Musicology 108A, 108B, 120A, 120B, 121, 170, 176, and one upper division elective course in music.

*Theory* — Music 120C and six courses selected in consultation with a faculty adviser.

## Graduate Study

Graduate study in historical musicology is offered by the Musicology Department (see Chapter 5); study in ethnomusicology and/or systematic musicology is offered by the Department of Ethnomusicology and Systematic Musicology (see the listing earlier in this chapter).

### Admission

Application for admission/fellowship  
due ..... December 30

Supplementary application  
materials due ..... January 15

Assessment examination/  
audition ..... end of January

Notice of acceptance or denial  
sent ..... by March 15

Late applicants must meet the following deadlines:

Late applications for admission only  
(from addresses in the U.S. only)  
accepted until ..... March 1

Supplementary application  
materials due ..... April 1

Assessment examination/  
audition ..... early April

Notice of acceptance or denial  
sent ..... by May 15

Failure to meet any deadline may result in a delay in action on an application for admission, as well as that for a fellowship or assistantship.

The application form must be filed according to instructions in the application booklet; all supplementary materials described below must be submitted to Mary Crawford, Department of Music, 2539 Schoenberg Hall Annex, UCLA, Los Angeles, CA 90024-1616.

Applicants for the M.A. and M.F.A. must have completed a Bachelor of Arts degree, or the equivalent, in Music or other fields of study, provided they have the musical training and musicianship necessary to pursue graduate work. Transcripts should show at least 52 quarter units of work outside music, including one college year (or its high school equivalent) of French, German, Italian, or Spanish and an average grade of at least B in the basic areas that normally constitute the undergraduate core curriculum in music (harmony, counterpoint, music history, analysis, and musicianship).

Applicants for the Ph.D. must have completed a Master of Arts degree in Music (or an equivalent degree). The degree normally will have been taken in the same field as the proposed doctorate. If you wish to obtain a doctorate in a field other than that of the M.A., additional coursework, as prescribed by the department, must be completed.

Applicants for all degrees (M.A., M.F.A., and Ph.D.) are also required to (1) take a departmental assessment examination (details are automatically sent after the application has been received), (2) submit a letter describing their background of study and stating their reasons for wishing to pursue graduate studies in music, (3) submit three letters of recommendation from former instructors and/or professionals with whom they have worked, and (4) submit written examples of their work — for composition, musical scores; for M.F.A. applicants, a repertoire list and sample concert or recital programs; for Ph.D. applicants, the M.A. thesis or composition, if possible. In addition, applicants for the Ph.D. in composition with a cognate in ethnomusicology should submit a written sample of their work, as well as musical scores. M.F.A. applicants also are required to demonstrate by audition their general musical proficiency in their area of specialization. No application can be considered until the examination has been taken and all of the above materials have been received.

### Major Fields

The Music Department offers the degrees of Master of Arts and Doctor of Philosophy in the field of composition and Master of Fine Arts (performance practices) in all classical solo instruments, voice, opera, and conducting.

### Instructional Credential in Music

You may earn credentials for teaching music and other subjects in California elementary and secondary schools through the Graduate School of Education; completion of the instructional credential program in the Teacher Education Laboratory is required. Interested applicants should consult the Graduate School of Education, 1605 Maxxam Building (122 Moore Hall in early 1994, 310-825-8328), and the faculty adviser in music for information.

## Master of Arts Degree

### Foreign Language Requirement

Reading knowledge of French, German, Italian, Spanish, or English (for students whose native language is not English) is required.

### Course Requirements

You are required to complete a minimum of nine courses, five of which must be at the 200 level. Only four units of Music 596A, 596C, or 596D and four units of course 597 or 598 may be applied toward the total course requirement. No more than four units of all types of 500-series courses may be applied toward the minimum graduate course requirement. Upper division courses that may be applied toward the minimum of nine courses include 109A, 109B, 109C, 112A, 112B, 116, 117, 118A, 118B, 151A, 151B, 156, 175 (four units only), Ethnomusicology and Systematic Musicology 106A, 106B, 106C, 113, M126, 128, 130, 136A, 136B, 146, 147, 156A, 156B, 157, 158A, 158B, 158C, 160A, 160B, 170, 173, 176, M180, 181. Course 598 serves to guide the preparation of the thesis and should normally be taken during your last term in residence.

You must complete Music 251A, 266A-266B, one course from 251B or 251C or 251D, 252A, 252B, and 252C in sequence (with the option of substituting course 596A for 252C), and two electives on the recommendation of your graduate adviser. In addition to the thesis, you are expected to produce other works involving both instrumental and vocal music for both solo and ensemble forces. You are also responsible for the campus presentation of one original work during each year of residency.

### Thesis Plan

The thesis is a work proposed by the student and approved by the composition and theory faculty. The topic and composition of the master's committee are approved by the faculty before submission to the Graduate Division.

### Final Examination

The final examination is oral and includes discussion of both the thesis and related matters.

## Master of Fine Arts Degree

### Foreign Language Requirement

Reading knowledge of French, German, or Italian is required. International students may petition to substitute English. Candidates in the opera speciality must also be fluent in speaking one of these languages. The language requirement should be satisfied by the end of your first year in residence.

### Course Requirements

You are required to complete a minimum of 18 courses, including at least six at the 200 level and six or more in the 400 series. Only four units of Music 596A, 596C, or 596D and eight units of course 598 may be applied toward the

total course requirement. No more than four units of all types of 500-series courses may be applied toward the minimum graduate course requirement. The minimum residence requirement for the M.F.A. is two years.

Course requirements are as follows: two terms of Music 261A through 261F, six terms of 400-level performance instruction, two terms (eight units) of 598, seven elective courses, and Musicology 200A. Conducting students declare either a choral or instrumental specialization. Six terms of course 475 are required in the area of specialization (i.e., choral or instrumental) and at least two terms in the other area. (On a two-year program, the ratio would be four to one.) Recommended electives include courses 175, 596A, 596C, 596D, Ethnomusicology and Systematic Musicology 170, 176, and additional courses from the 200 and 400 series. A maximum of four units of chamber ensembles (course 175) may be applied toward the minimum 18 courses. Course 598 serves to guide the preparation of the final project and should normally be taken during your last two terms in residence.

Each year you must complete a solo recital on campus (preferably a noon concert) with a faculty committee in attendance to evaluate the performance. Conducting students present a program, or a substantial portion thereof, approved by the conducting faculty, either on or off campus.

The final project is to be completed during your last year in residence. A solo recital and appropriate scholarly paper are required in all areas. In addition, a major operatic performance is required in the area of opera. Conducting students present an on-campus program, or a substantial portion thereof, with one of the department's performance organizations. The scholarly paper should be equivalent to a graduate seminar paper (15 to 25 pages in length) and should be concerned with performance problems which can be elucidated through research and analysis. The final version of the scholarly paper, with the accompanying recital program, must be submitted to the department in the format of a thesis.

The language requirement and a majority of the coursework must be completed before you submit the final project proposal and request for an M.F.A. committee. The proposal, which is to include the complete recital program and an abstract of the scholarly paper, should be submitted by Fall Quarter of your last year in residence.

## Ph.D. Degree

### Admission

See "Admission" under Graduate Study above.

### Foreign Language Requirement

Reading knowledge of two languages selected from German, French, Latin, Italian, Russian, Spanish, or English (for students whose native language is not English; you may not use both English and the native language) is required.

## Course Requirements

You may petition, on the advice of your graduate adviser, for exemption from specific requirements on the basis of equivalent work done at the M.A. level. You may complete the residence requirement by electing courses (with consent of the graduate adviser) from the 200 series or the list of 100-level courses under "Course Requirements" for the M.A.

You must complete Music 251A, 266A-266B, one course from 251B or 251C or 251D, six terms of 252A, 252B, 252C in sequence (with the option of substituting course 596A for 252C), and Musicology 200A. If you received the M.A. in composition from UCLA, you normally take a minimum of three terms of courses 252A, 252B, 252C in sequence in the Ph.D. program. If you received the M.A. in composition elsewhere, you normally take six terms of courses 252A, 252B, 252C in sequence, with the option of substituting course 596A for either or both 252Cs. In addition to the dissertation, you are expected to produce other works involving both instrumental and vocal music for both solo and ensemble forces. You are also responsible for the campus presentation of one original work during each year of residency.

You may elect to complete the optional cognate in ethnomusicology, in which you may substitute Ethnomusicology and Systematic Musicology C201A for Musicology 200A and Ethnomusicology and Systematic Musicology 282 or 283 for Music 251B or 251C or 251D. You are required to take two courses from Ethnomusicology and Systematic Musicology 207, 211, 237, 240, 241, 248A, 248B, 250A, 250B.

## Qualifying Examinations

When you and your guidance committee believe you are ready to take the qualifying examinations, you should take a schedule to the Student Services Office listing the order in which the examinations are to be taken. The Student Services Office staff acts as proctor for the tests. Normally the written examinations are spread over a two-week period but should be completed within three weeks. Repeat examinations may be scheduled in consultation with the guidance committee and after a stipulated period of time. Contact the Student Services Office for details on the written examinations.

When you successfully complete the written examinations, the departmental oral qualifying examination can be scheduled. After passing this oral examination, you may submit your dissertation proposal and request for a doctoral committee; this committee administers the University Oral Qualifying Examination.

## Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

## Dissertation/Final Oral Examination

The dissertation consists of (1) an extended composition accompanied by a short description of the style and techniques of the work and (2) an analytical monograph dealing with some aspect of 20th-century music.

A final oral examination is required by the department.

## Lower Division Courses

**1A-1B. Fundamentals of Music.** Lecture, three hours; discussion, two hours. Designed for nonmusic majors.

**1A.** Introduction to elements of music: pitch and rhythm symbols, meter and time signatures, notation, scales, intervals, and chord structure. **1B.** Prerequisite: course 1A. Diatonic harmony; four-part writing, including inversions, sevenths, secondary dominants, and modulation; organization of melody and accompaniment; simple analysis; sight-singing and ear training.

**3A-3B. Preparatory Theory for Music Majors (2 units each).** Lecture, two hours; discussion, one hour. Prerequisite: music major or consent of instructor. Course 3A is not open for credit to students with credit for course 1A; course 3B is not open for credit to students with credit for course 1B. Course for music majors in music fundamentals, including musicianship, theory, and terminology.

**4A-4B-4C. Basic Musicianship (2 units each).** Laboratory, three hours. Class instruction in elementary ear training and keyboard skills.

**8G. Graduate Piano Sight-Reading (2 units).** Prerequisite: graduate standing. Designed to help entering graduate students remedy entrance deficiencies, to be cleared by examination. May be repeated. S/U grading.

**10. Computer-Assisted Sight-Singing Laboratory (2 units).** Lecture, two hours; laboratory, one hour. Prerequisites: course 1A or equivalent, consent of instructor. Individualized, self-instructional approach for development of sight-singing skills through use of a music computer, keyboard instrument, and linear program learning.

**12A-12B. Counterpoint (2 units each).** Lecture, four hours. **12A.** Prerequisites: music theory placement examinations. 16th-century modal counterpoint in two parts, including writing of motets. **12B.** Prerequisites: courses 20A, 20B, 20C. 18th-century tonal counterpoint in two parts, including writing of inventions.

Mr. Reale and the Staff

**15. Art of Listening.** Lecture, three hours; laboratory, one hour. Acquisition of listening skills through direct interaction with live performance, performers, and composers. Relationship of listening to theoretical, analytical, historical, and cultural frameworks. Music as aesthetic experience and cultural practice.

Mr. Winter

**20A. Music Theory I.** Lecture, two hours; discussion, six hours. Prerequisite: passing score on departmental examination. Theory: species counterpoint through fifth species; description of triads and inversions. Musicianship: interval recognition; fixed-do solfège of diatonic melodies; one-part dictation of diatonic melodies; two-part dictation of small-compass, note-against-note melodies; simple rhythmic dictation; use of treble, alto, and bass clefs.

**20B. Music Theory II.** Lecture, four hours; discussion, four hours. Prerequisites: course 20A with a grade of C (2.0) or better, consent of instructor. Theory: diatonic harmony through secondary dominants and diminished sevenths; modulations to dominant and relative keys; writing of four-part chorales; style composition in baroque dance forms; introduction to figured bass notation. Musicianship: harmonic dictation, including secondary dominants and diminished sevenths, but not modulations; more advanced two-part dictation; chromatic one-part dictation; more advanced sight-singing; keyboard (three-part open score in homophonic textures, introduction to tenor clef).

**20C. Music Theory III.** Lecture, four hours; discussion, four hours. Prerequisites: course 20B with a grade of C (2.0) or better, consent of instructor. Theory: chromatic harmony including development of tonality, 1800 to 1850; appropriate analysis and style composition. Musicianship: advanced sight-singing; two-part contrapuntal dictation; keyboard harmony (harmonic sequences in major and minor keys); reading in open score of four homophonic parts in four clefs.

**23. Composition Workshop (2 units).** Prerequisites: courses 20A, 20B, and 20C, or consent of instructor. Introductory composition course which provides compositional experiences at a basic level. May be repeated once for credit.

Ms. Barkin, Mr. Bourland

**60A-65. Undergraduate Instruction in Performance (2 units each).** Limited to music majors (all lower division majors, and upper division majors not in performance specialization). Individual instruction of one hour per week. Students must perform in a practicum once during academic year. Grades are assigned by applied instructor in Fall and Winter Quarters and by jury examination in Spring Quarter. May be repeated for credit:

60A. Violin.	Ms. Kamei, Mr. Treger
60B. Viola.	Mr. Wilson
60C. Cello.	Mr. Leonard
60D. String Bass.	Mr. Zibits
60E. Harp.	Ms. Neill
60F. Classical Guitar.	Mr. Norman, Mr. Yates
60G. Viola da gamba.	
60K. Lute.	
61A. Flute.	Mr. Stokes
61B. Oboe.	Ms. Northcutt
61C. Clarinet.	Mr. Gray
61D. Bassoon.	Mr. Steinmetz
61E. Saxophone.	Mr. Gray
62A. Trumpet.	Mr. Guarneri
62B. French Horn.	Mr. Todd
62C. Trombone.	Mr. Booth
62D. Tuba.	Mr. Johnson
63. Percussion.	Mr. Peters
64A. Piano.	
	Mrs. Harris-Heggie, Mr. Tzerko, and the Staff
64B. Organ.	Mr. Harmon
64C. Harpsichord.	Ms. Karp
65. Voice.	Mr. Mussard and the Staff

**90A. Concert Choir (2 units).** Activity, four hours. Prerequisite: audition. Select mixed ensemble of 50 to 60 voices performing choral music appropriate for a concert choral ensemble, with emphasis on music after 1700. May be repeated for credit without limitation. P/NP or letter grading.

**90B. Collegiate Chorus (2 units).** Nonaudition mixed chorus of 50 to 150 voices performing medium- and concert-length choral works from baroque to the present. Collegiate Chorus performs only as part of "Choral Union," a large chorus made up of all of the choral ensembles. May be repeated for credit without limitation. P/NP or letter grading.

**90C. Chamber Singers (2 units).** Activity, three hours. Prerequisite: audition. Select mixed ensemble of 16 to 20 voices performing chamber choral music of all periods, with emphasis on Renaissance and baroque music. May be repeated for credit without limitation. P/NP or letter grading.

**90D. Opera Workshop (2 units).** Activity, six hours. Prerequisite: audition. Rehearsal and performance of scenes and complete operas, as well as repertoire, stage movement, and foreign language diction coaching. May be repeated for credit without limitation. P/NP or letter grading.

Mr. Lumpkin

**90E. Symphony Orchestra (2 units).** Activity, four hours. Prerequisite: audition. Group performance of symphonic literature, as well as orchestral accompaniment for operatic and major choral works. May be repeated for credit without limitation. P/NP or letter grading.

Mr. Robertson

**90F. Symphonic Band (2 units).** Prerequisite: audition. Group performance of instrumental music scored for band. May be repeated for credit without limitation. P/NP or letter grading.

Mr. Henderson

**90G. Wind Ensemble (2 units).** Activity, four hours. Prerequisite: audition. Group performance of concert literature for wind ensemble. May be repeated for credit without limitation. P/NP or letter grading.

Mr. Lee

**90H. Collegium Musicum (2 units).** Activity, three hours. Prerequisite: audition. Group performance of vocal and instrumental music of medieval, Renaissance, and baroque eras on period instruments. May be repeated for credit without limitation. P/NP or letter grading.

**90J. Men's Glee Club (2 units).** Activity, three hours. Prerequisite: audition. Select male chorus of 40 to 45 voices performing male choral music of all periods, with emphasis on popular and folk arrangements. May be repeated for credit without limitation. P/NP or letter grading.

**90K. Women's Chorus (2 units).** Activity, three hours. Prerequisite: audition. Select female chorus of 45 to 55 voices performing treble choral music of all periods, with emphasis on music after 1750. May be repeated for credit without limitation. P/NP or letter grading.

**90L. Musical Comedy Workshop (2 units).** Activity, six hours. Prerequisite: audition. Rehearsal and performance of scenes and complete musical theater productions, including repertoire and stage movement coaching. May be repeated for credit without limitation. P/NP or letter grading.

Mr. Hall

**90M. Marching and Varsity Bands (2 units).** Activity, four hours. Prerequisite: audition. Group performance of special band arrangements for football and basketball games as well as special events. May be repeated for credit without limitation. P/NP or letter grading.

Mr. Henderson

**90N. Jazz Ensemble (2 units).** Activity, three hours. Prerequisite: audition. Group performance of jazz and popular music in ensembles of 20 to 30 instruments. May be repeated for credit without limitation. P/NP or letter grading.

Mr. Henderson

## Upper Division Courses

**100A-100B-100C. Music in American Education.** Lecture, four hours; laboratory, one hour. Prerequisites: courses 20A, 20B, 20C, 116, 120A, 120B, 120C, Musicology 26A-26B-26C. Critical study and analysis of philosophy, history, organization, curriculum, and literature of music programs for elementary and secondary schools in American education. Each course may be taken independently for credit. **100A.** General Music; **100B.** Choral Music; **100C.** Instrumental Music.

Mr. Anderson and the Staff

**101. Advanced Keyboard Harmony and Score Reading.** Prerequisite: course 120B or consent of instructor. Intensive individual work in keyboard harmony and reading of chamber and orchestral scores. May be repeated once for credit.

**102. Instrumentation.** Lecture, three hours. Prerequisite: course 120B with a grade of C (2.0) or better. Not open for credit to students with credit for course 106A. Intended for music majors in specializations other than composition. Ranges and characteristics of instruments, exercises in scoring.

Mrs. Barkin

**105. Introduction to Composition.** Lecture, three hours. Prerequisites: courses 20A, 20B, 20C, 120A, 120B, 120C. Intended for music majors in specializations other than composition. Nature of compositional process, with selected exercises in specific techniques and styles.

**106A. Orchestration I.** Discussion, three hours. Prerequisites: courses 20A, 20B, 20C. May be taken concurrently with courses 120A, 120B, 120C. Ranges and characteristics of instruments, with exercises in scoring.

**106B. Orchestration II.** (Formerly numbered 106B-106C.) Discussion, three hours. Prerequisite: course 106A. Scoring and analysis for ensembles and full orchestra.

**109A-109B-109C. Composition for Motion Pictures and Television (2 units each).** Prerequisites: courses 20A, 20B, 20C, 120A, 120B, and 120C, or consent of instructor. Course 109A is prerequisite to 109B, which is prerequisite to 109C. Composition of music for dramatic and documentary film in cinema and television. Techniques used in recording and editing. Mr. Raksin

**112A-112B. Practical Scoring.** Lecture, two hours; laboratory, two hours. Prerequisites: courses 20A, 20B, 20C, 120A, 120B, 120C, and Musicology 26A-26B-26C, or consent of instructor. Emphasis on practical problems in scoring for small and large ensembles at various educational levels. **112A. Band Scoring; 112B. Choral Scoring.** Mr. Henderson

**113A-113B. Music Literature for Children.** Lecture, three hours; laboratory, one hour. Prerequisites: course 1A and Musicology 2A, or consent of instructor. Course 113A is not prerequisite to 113B. Designed for nonmusic majors, particularly elementary education students. Study of music literature applicable to elementary school programs. **113A.** Emphasis on listening analysis, movement, and improvisation. **113B.** Emphasis on class performance — music reading, singing, and folk instruments.

**115A-115E. Study of Instrumental and Vocal Techniques (1 unit each).** (Formerly numbered 115A-115F.) Laboratory, three hours. Prerequisite or corequisite: course 20A. Applied studies in basic performance techniques and tutorial materials. Each of courses 115A-115D may be repeated once for credit. **115A.** Strings; **115B.** Woodwinds; **115C.** Brass; **115D.** Percussion; **115E.** Voice. Mr. Anderson

**116. Introduction to Conducting (2 units).** Lecture, three hours. Prerequisites: courses 20A, 20B, 20C, 120A. Fundamentals of conducting, including basic skills, techniques, analysis, and repertoire. Mr. Anderson

**117. Study and Conducting of Instrumental and Choral Literature (2 units).** (Formerly numbered 117A-117B.) Lecture, three hours. Prerequisite: course 116 or consent of instructor. Study and practice of conducting both instrumental and choral repertoire. In addition to further development of conducting gestures, focus on score study techniques, rehearsal techniques, style, and interpretation as applied to choral and instrumental repertoire. Mr. Anderson and the Staff

**118A-118B. Advanced Study and Conducting of Choral and Instrumental Literature (2 units each).** Lecture, one hour; laboratory, two hours. Prerequisites: courses 116 and 117, or consent of instructor. Detailed investigation of musical styles, performance practices, and rehearsal techniques. Each course may be repeated once for credit. **118A.** Choral; **118B.** Instrumental. Mr. Lee and the Staff

**119. Creative Process: Developing Imagination and Craft.** Lecture, three hours. Prerequisites: courses 106A and 106B, or consent of instructor. In-depth philosophical and technical discussions as to nature of creativity, as well as compositional exercises intended to develop technique and imagination and to enrich musical vocabulary of students.

**120A. Music Theory IV.** Lecture, four hours; discussion, four hours. Prerequisites: course 20C with a grade of C (2.0) or better, passing score on departmental first-year examination. Theory: baroque counterpoint including chorale prelude; two-part invention; exposition and first modulation of a three-part invention; canonic principles; analysis of inventions, canons, and fugues. Musicianship: sight-singing of extended chromatic melodies; advanced harmonic dictation (diatonic and chromatic); keyboard harmonization of modulating melodies; elementary score reading.

**120B. Music Theory V.** Lecture, four hours; discussion, four hours. Prerequisites: course 120A with a grade of C (2.0) or better, consent of instructor. Theory: advanced chromatic harmony including development of harmony from 1850; analytical projects; style composition. Musicianship: advanced score reading; advanced harmonic dictation; preparation for departmental examination.

**120C. Music Theory VI.** Lecture, four hours; discussion, two hours; listening, two hours. Prerequisites: course 120B with a grade of C (2.0) or better, consent of instructor. 20th-century harmonic language, including nonfunctional harmony, polytonality, free atonality, serialism, and minimalism.

**121. Special Topics in 20th-Century Music.** Lecture, three hours. Prerequisites: courses 20A, 20B, 20C, 120A, 120B, and 120C, or consent of instructor. In-depth study of certain aspects of 20th-century music ranging from individual composers and schools to ideological or stylistic concerns. May be repeated once for credit.

**C122. Speculative Music Theory.** (Formerly numbered 103A-103B.) Discussion, three hours. Prerequisites: courses 20A, 20B, 20C, 120A, 120B, and 120C, or consent of instructor. Techniques of tonal coherence studied through analysis and compositional exercises in styles of given periods. May be repeated once for credit. May be concurrently scheduled with course C222. Ms. Barkin

**123A-123B-123C. Composition.** (Formerly numbered 107A-107B-107C.) Lecture, three hours. Prerequisites: courses 20A, 20B, 20C, 120A, 120B, 120C. Course 123A is prerequisite to 123B, which is prerequisite to 123C. Designed for students specializing in composition. Vocal and instrumental composition in the smaller forms, including style composition and 20th-century techniques. Each course may be repeated once for credit, but first year must be taken in sequence. Mr. Bourland

**136A-136B-136C. Historical Survey of Music Theater.** Lecture, four hours; discussion, one hour. Historical survey of major works from music theater, tracing development of the art form from its European beginning to the American music theater of today. P/NP or letter grading. **136A.** Music Theater, Early Forms to 1900; **136B.** Music Theater, 1900-1945; **136C.** Music Theater, 1945-1975. Mr. Hall

**150. Introduction to Music Criticism.** Lecture, three hours. Prerequisite: music major or consent of instructor. Readings and discussion of music criticism past and current, and exercise in the writing of criticism of live concert events and recordings. Designed to aid students (performers, critics, or listeners) in verbalizing the experience of listening to music.

**151A-151B. History of Musical Performance Practices.** Prerequisites: courses 20A, 20B, 20C, 120A, 120B, Musicology 26A-26B-26C. General survey of musical interpretation and re-creation from viewpoint of stylistic authenticity. **151A.** Medieval through Baroque; **151B.** Classic through 20th Century.

**155. Audio Technology for Musicians.** Lecture, two hours; laboratory, three hours. Prerequisites: courses 20A, 20B, 20C, consent of instructor. Theory and practice of sound engineering in relation to concert and studio recording techniques. Mr. Cloud

**156. Electronic Music: Theory and Techniques.** Lecture, three hours; laboratory, three hours. Prerequisites: courses 123A-123B-123C. Designed for students specializing in composition. Applicable acoustical and electronic theory, history of technological and compositional development of classical electronic music. Analysis, manipulation of analog and digital synthesizers and ancillary equipment, invention and realization of materials. Mr. Bourland

**158. New Orleans Jazz.** Lecture, three hours; discussion, two hours. Major black and Creole figures in origin and development of jazz in New Orleans from turn of the 20th century through the 1960s, with emphasis on polycultural roots, local municipal traditions, and stylistic analysis.

**160A-165. Undergraduate Instruction in Performance for the Performance Specialist (2 units each).** Limited to upper division music majors who have been accepted by audition into performance specialization. Individual instruction of one hour per week. Students must perform in a noon concert once during their junior year and must present a full recital in their senior year. Grades are assigned by applied instructor in Fall and Winter Quarters and by jury examination in Spring Quarter. May be repeated for credit.

**160A.** Violin.

Ms. Kamei, Mr. Treger

**160B.** Viola.

Mr. Wilson

**160C.** Cello.

Mr. Leonard

**160D.** String Bass.

Mr. Zibits

**160E.** Harp.

Ms. Neill

**160F.** Classical Guitar.

Mr. Norman, Mr. Yates

**160G.** Viola da gamba.

**160K.** Lute.

**161A.** Flute.

Mr. Stokes

**161B.** Oboe.

Ms. Northcutt

**161C.** Clarinet.

Mr. Gray

**161D.** Bassoon.

Mr. Steinmetz

**161E.** Saxophone.

Mr. Gray

**162A.** Trumpet.

Mr. Guarneri

**162B.** French Horn.

Mr. Todd

**162C.** Trombone.

Mr. Booth

**162D.** Tuba.

Mr. Johnson

**163.** Percussion.

Mr. Peters

**164A.** Piano.

Mrs. Harris-Heggie, Mr. Tzerko, and the Staff

**164B.** Organ.

Mr. Harmon

**164C.** Harpsichord.

Ms. Karp

**165.** Voice.

Mr. Mussard and the Staff

**C167. Selected Topics in Keyboard Literature.** Lecture, three hours. Corequisite: course 164A or 164B or 164C or consent of instructor. In-depth study of selected topics in keyboard literature, concentrating on problems of performance through analysis, historical and comparative studies, and actual performances by participants. May be concurrently scheduled with course C267.

**174A-174B-174C. The Language of Song (2 units each).** Prerequisite: music major. Sounds of the language as applied to singing, including use of International Phonetic Alphabet, translation of art song texts, and application to student's current vocal repertoire. Background in the language is encouraged. **174A.** German; **174B.** French; **174C.** Italian. Mrs. Hast

**175. Chamber Ensembles (2 units).** Prerequisite: audition. Students must be at advanced level of their instrument to participate. Applied study of performance practices of literature appropriate to the ensemble. Students may enroll in two sections per term; total of 12 units may be applied toward degree requirements. May be repeated for credit.

**C176. Electronic Music Composition.** Lecture, three hours; studio, three hours. Prerequisites: course 156, advanced experience and accomplishment in serious composition (art music), consent of instructor. Limited enrollment. Analog and digital realizations of original compositional materials culminating in a composition at least five minutes in duration. May be concurrently scheduled with course C226. Mr. Bourland

**C185. Historical and Philosophical Foundations of Music Education.** Lecture, three hours. Prerequisite: completion of undergraduate music education specialization or consent of instructor. Development of music education in the U.S. according to established schools of thought. May be concurrently scheduled with course C225.

**199. Special Studies in Music (2 or 4 units).** Hours to be arranged. Prerequisites: senior standing, 3.0 GPA, consent of instructor and department chair. Individual studies in music resulting in research project. May be repeated for a maximum of eight units.

Mr. Harmon and the Staff

## Graduate Courses

**202. Analysis for Performers.** Lecture, three hours. Prerequisite: graduate standing. Survey of analytical techniques and approaches required for professional performers, including phrase structure, harmonic rhythm and prolongation, small and large forms, theories of musical coherence, and understanding of styles. Mr. Harmon, Mr. Winter

**203. Musical Terminology.** Lecture, three hours. Prerequisite: graduate standing in music. Survey of musical terminology designed to clarify the performance and interpretation of vocal and instrumental music in the European tradition. Coverage of terms in Italian, French, and German.

Mr. Harmon, Mr. Winter

**204. Music Bibliography for Performers.** Lecture, three hours. Prerequisite: graduate standing in music performance. Survey of general bibliographic techniques in music, with emphasis on materials for the performing musician.

Mr. Winter

**C222. Speculative Music Theory.** Discussion, three hours. Prerequisite: graduate standing in music. Techniques of tonal coherence studied through analysis and compositional exercises in styles of given periods. May be repeated once for credit. May be concurrently scheduled with course C122.

Ms. Barkin

**C225. Historical and Philosophical Foundations of Music Education.** Lecture, three hours. Prerequisites: graduate standing, consent of instructor. Development of music education in the U.S. according to established schools of thought. May be concurrently scheduled with course C185. Additional assignments, as well as evidence of greater depth of study, required of graduate students.

**C226. Electronic Music Composition.** Lecture, three hours; studio, three hours. Prerequisites: course 156, graduate standing, advanced experience and accomplishment in serious composition (art music), consent of instructor. Limited enrollment. Analog and digital realizations of original compositional materials culminating in a composition of major proportions at least seven minutes in duration. May be concurrently scheduled with course C176.

Mr. Bourland

**251A-251D. Seminars: Special Topics in Composition and Theory.** Seminar, three hours. Intensive exploration of specialized aspects of composition. May be repeated for credit. **251A.** Orchestration; **251B.** Specific Media; **251C.** Specific Styles; **251D.** Compositional Analysis.

**252A-252B-252C. Seminars: Composition (6 units each).** Seminar, three hours. Prerequisites: courses 106B, 123C. Course 252A is prerequisite to 252B, which is prerequisite to 252C. Courses may be taken out of sequence only with consent of instructor. May be repeated for credit.

Mr. Bourland and the Staff

**261A-261F. Problems in Performance Practices.** Seminar, three hours. Prerequisites: courses 151A-151B or consent of instructor. Investigation of primary source readings in performance practices as related to the period; analytical reports and practical applications in class demonstrations. May be repeated for credit. **261A.** Medieval; **261B.** Renaissance; **261C.** Baroque; **261D.** Classical; **261E.** Romantic; **261F.** Contemporary.

**266A-266B. Seminars: Music of the 20th Century.** Seminar, three hours. Prerequisite: graduate standing in music or consent of instructor. Discussion and analysis of major works of the 20th century, with emphasis on study of groups of works written at the same time in history. **266A.** 1900 to 1949; **266B.** 1950 to the Present.

Mr. Ashforth, Mr. Reale

**C267. Selected Topics in Keyboard Literature.** Lecture, three hours. Corequisite: course 464A or 464B or 464C or consent of instructor. In-depth study of selected topics in keyboard literature, concentrating on problems of performance through analysis, historical and comparative studies, and actual performances by participants. May be concurrently scheduled with course C167.

**270A-270G. Seminars: Music Education (6 units each).** Lecture, three hours. Prerequisite: consent of instructor. May be repeated for credit. **270A.** History; **270B.** Non-Western Musics; **270C.** Curriculum Innovations; **270D.** Tests and Measurements; **270E.** Choral Literature; **270F.** Instrumental Literature; **270G.** General Topics.

**370. Music in General Education (2 units).** Prerequisite: graduate standing in Graduate School of Education teacher training program (all music students must take course 370 concurrently with Education 100, 112, 312, 315A, 315B, and supervised teaching). Critical discussions related to supervised teaching in progress. May be repeated twice for credit.

Mr. Anderson

**371. The Marching Band in Secondary Education (2 units).** Prerequisite: course 193 or consent of instructor. Study of contemporary marching band as a component of the music curriculum in secondary education, including current approaches, practices, and problems associated with the marching band, as well as historical perspective.

Mr. Henderson

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**460A-465. Graduate Instruction in Performance (6 units each).** Limited to M.F.A. students. Individual instruction of one hour per week, with performance laboratory at discretion of instructor. Intensive study and preparation of musical literature in area of specialization. May be repeated for credit. **460A.** Violin; **460B.** Viola; **460C.** Cello; **460D.** String Bass; **460E.** Harp; **460F.** Classical Guitar; **460G.** Viola da gamba; **460K.** Lute; **461A.** Flute; **461B.** Oboe; **461C.** Clarinet; **461D.** Bassoon; **461E.** Saxophone; **462A.** Trumpet; **462B.** French Horn; **462C.** Trombone; **462D.** Tuba; **463.** Percussion; **464A.** Piano; **464B.** Organ; **464C.** Harpsichord; **465.** Voice.

**470. Opera Studio for Graduate Students.** Laboratory, six hours. Prerequisites: graduate standing, consent of instructor. Performance techniques and repertoire for graduate students in opera.

**472. Master Class in Opera (6 units).** Laboratory, three hours. Limited to M.F.A. students. Intensive study and preparation of opera literature. May be repeated for credit.

**475. Master Class in Conducting (6 units).** Laboratory, three hours. Limited to M.F.A. students. Intensive study and preparation of musical literature in specialized field of conducting. May be repeated for credit.

**495. Introductory Practicum for Teaching Apprentices in Music (2 units).** Eight weekly two-hour sessions, plus intensive training session during Fall Quarter registration week. Prerequisite: appointment as teaching apprentice in Music Department. Required of all new teaching apprentices. Special course dealing with problems and practices of teaching music at college level. May not be applied toward degree requirements. S/U grading.

**596A. Directed Individual Studies in Orchestration and Composition (2, 4, or 6 units).** Only four units may be applied toward M.A. or M.F.A. degree requirements. May be repeated for credit.

**596C. Directed Individual Studies in Music Education (2, 4, or 6 units).** Only four units may be applied toward M.A. or M.F.A. course requirements.

**596D. Directed Individual Studies in Performance Practices (2 to 12 units).** Prerequisite: graduate standing. Only four units may be applied toward M.A. or M.F.A. degree requirements. May be repeated for credit.

**597. Preparation for Master's Comprehensive Examination or Ph.D. Qualifying Examinations (2 or 4 units).** S/U grading.

**598. Guidance of M.A. Thesis or M.F.A. Final Project (4, 8, or 12 units).** M.A. candidates may apply four units toward degree requirements; M.F.A. candidates may apply eight units toward degree requirements. May be repeated for credit. S/U grading.

**599. Guidance of Ph.D. Dissertation (4, 8, or 12 units).** May be repeated for credit. S/U grading.

## Related Courses in Other Departments

Dance C120. Music as Dance Accompaniment

221. Music for Dance

Folklore and Mythology CM106. Anglo-American Folk Song

M123B. Finnish Folk Song and Ballad

M243A. The Ballad

M243B. Problems in Ballad Scholarship

## World Arts and Cultures (Interdepartmental)

124 Dance Building, (310) 206-3696, 206-1342

### Professors

Elsie Dunin, M.A. (*Dance*)

Robert A. Georges, Ph.D. (*English, Folklore and Mythology*)

Michael O. Jones, Ph.D. (*History, Folklore and Mythology*)

Judy Mitoma, M.A. (*Dance*), *Chair and Concentration Adviser*

James W. Porter, M.A. (*Ethnomusicology and Systematic Musicology, Folklore and Mythology*)

A. Jihad Racy, Ph.D. (*Ethnomusicology and Systematic Musicology*)

William R. Hutchinson, Ph.D., *Emeritus (Ethnomusicology and Systematic Musicology)*

Jacques Maquet, Ph.D., *Emeritus (Anthropology)*

Philip L. Newman, Ph.D., *Emeritus (Anthropology)*

Allegra Fuller Snyder, M.A., *Emerita (Dance)*

### Associate Professors

Robert L. Brown, Ph.D. (*Art History*), *Concentration Adviser*

Donald J. Cosentino, Ph.D. (*English, Folklore and Mythology*), *Concentration Adviser*

Alessandro Duranti, Ph.D. (*Anthropology*), *Concentration Adviser*

Patricia M. Harter, Ph.D. (*Theater*)

Steven J. Loza, Ph.D. (*Ethnomusicology and Systematic Musicology*), *Concentration Adviser*

Joseph F. Nagy, Ph.D. (*English, Folklore and Mythology*)

Beverly J. Robinson, Ph.D. (*Theater*), *Concentration Adviser*

Carol J. Sorgenfrei, Ph.D. (*Theater*)

### Assistant Professors

Colin Quigley, Ph.D. (*Dance*)

Edit Villarreal, M.F.A. (*Theater*)

### Visiting Professor

Peter Sellars, B.A. (*World Arts and Cultures*)

## Scope and Objectives

The interdisciplinary major in world arts and cultures is available to students in both the School of the Arts and the College of Letters and Science. The course of study is designed to provide students with the conceptual tools with which to examine and extract meaning from the arts — regardless of language, culture, or geographical location. Students view the arts not as isolated phenomena, but as dynamic aesthetic forms which embody culture, history, and belief systems. The program is unique in that it places emphasis on cross-cultural study rather than the conventional focus on Western "high art" traditions. Techniques of inquiry and analysis are taken from both the arts and letters and science frameworks and therefore require investigative research as well as aesthetic sensibility. The program encourages that both approaches be given equal consideration. In addition to these resources, the program utilizes UCLA's oppor-

tunities for participation in dance, music, and theater performance classes.

Students are encouraged to consider the Education Abroad Program during their junior year. Individuals interested in careers in elementary and secondary education should consult the program's student affairs officer.

## Bachelor of Arts Degree

### Admission

New students are admitted to the major only for Fall Quarter. Procedures and guidelines for the selection of freshman and transfer students are approximately the same. Applicants are reviewed individually, based on a questionnaire, grade-point average, two letters of recommendation, and a personal essay. For freshman applicants, college placement test scores are also considered.

Current UCLA students who petition to change their major are required to meet with the student affairs officer prior to application. An interview with the program chair may also be required. You are advised to take world arts and cultures courses during the term in which you apply to the program. You must have a minimum 3.0 overall grade-point average and no more than 120 quarter units. Change of major petitions are accepted in October for Winter Quarter and in April for Fall Quarter.

### Concentrations

The *anthropology* concentration stresses both the empirical and theoretical foundations of cultural anthropology.

The *art history* concentration has particularly strong offerings for students interested in Asia, Africa, and the Americas.

The *dance* concentration includes studio opportunities, theory and research techniques, and history courses in both Western and non-Western dance.

The *folklore and mythology* concentration exposes students to a wide range of folklore forms derived from a diversity of cultures. (UCLA offers no undergraduate degree in folklore.)

The *music* concentration focuses on basic theory and skill in both Western and non-Western music. The theory option requires skill levels equivalent to lower division music majors, while the world musicianship option emphasizes ethnomusicology.

The *theater* concentration explores three fundamental aspects of Western and non-Western theater: (1) history and literature, (2) visual design, and (3) production and performance techniques.

Majors should be aware that the upper division course requirements in the major and in their college or school may not meet the upper division requirement for graduation (72 units for Letters and Science, 64 for the Arts). Addition-

al upper division units may need to be taken to reach the unit total.

### General College/School Requirements

You must satisfy the general education requirements of your school or college (Arts or Letters and Science). You may select either regardless of your concentration.

If you wish to confer with the student affairs officer regarding planning and major requirements, contact Silvily Kessler Thomas in the program office (310-206-3696).

### The Major

The major includes a core of 32 units from anthropology, art history, dance, folklore and mythology, music, and theater; a concentration consisting of 36 units in one of these six disciplines; an eight-unit senior colloquium; and 12 units of upper division elective coursework.

The following courses are required:

(1) A core of 10 interdepartmental courses (32 units): Anthropology 9, Art History 55A or 55B or 56A or 56B, Dance 70, 80A-80B, Ethnomusicology and Systematic Musicology 1A-1B, Folklore and Mythology 101, Theater 102E, World Arts and Cultures 100.

(2) A concentration of nine courses (36 units) in one of the following areas:

*Anthropology* — Courses 60, 133R, M154; group A: course 130 or 150; group B: any five courses from 110, 111, 112, 113P, 113Q, 113R, 114P, 114Q, 114R, 118A, 118B, 130P, 132, 133Q, 133R, 135A, 135B, 135C, 135S, M136Q, 137, 139, 139L, M140, 141, 143, 144, 145, 146, 151, 152, 153, 156, 161, 162, M162P, M164, 165, 167, M168, including one course from 171, 172R, M172T, 173Q, 174P, 174Q, 175P through 175U, 177.

*Art History* — Group A: one course from 50, 51, 54, 55A, 55B, 56A, 56B, 57; group B: eight courses from M102A, M102B, 104A, 104B, 114A, 114C through 114F, C115A through C115F, C117A, C117B, C117C, 118A, 118C, 118D, C119A, C119B.

*Dance* — Courses 134A, 134B, C180A-C180B; group A: four courses from 181A, 181B, 181C, 181D, 182, 183, C187; group B: two two-unit courses from C171B through C179Z (note that courses 71B through 79Z are prerequisites for C171B through C179Z).

*Folklore and Mythology* — Group A: five courses from CM106, M111, 118, M122, M123B, 124, M140, M154A, M154B, 163, C165, C175, M180, M181, CM184, 190, Classics 161, 168; group B: four courses from C105, C107, 108, M112, 113, M121, M123A, M125, M126, M127, M128, M129, 130, 131, M142, M149, M150, M155, M170, 172, M182, 183, 190, German 134.

*Music* — Courses 20A, 20B, 20C (Western theory option) or Ethnomusicology and Systematic Musicology 10A-10B-10C; group A: two two-unit

performance courses from Ethnomusicology and Systematic Musicology 91A-91Z; group B: one course with Western emphasis from Ethnomusicology and Systematic Musicology 117, 118, 120A, 120B, M126, 128, 174, Musicology 130, 135A, 135B, 135C, 139, Music 151A, 151B, 158; group C: four courses with non-Western emphasis from Ethnomusicology and Systematic Musicology 106A, 106B, 106C, 108A, 108B, M110A, M110B, 113, 121, 130, 136A, 136B, 146, 147, 156A, 156B, 157, 158A, 158B, 158C, 160A, 160B, M180, 181, C190A, C190B.

*Theater* — Courses 101A-101B-101C; group A: one course from 140A, 141A, 142B, 153A, C158A; group B: eight units from 118A, 119A, 119B, 130A, 160, C190A, C190B; group C: three courses from M103A through 103F, 104A, 104B, 104C, 111A, 111B, 111C, Film and Television 106C, 128. Due to pending changes in the Department of Theater curriculum, this concentration may need to be revised. Contact the program office for the most current information.

(3) World Arts and Cultures 190A-190B. These courses are the culmination of the major and focus on the culturally diverse communities of Los Angeles for field research. You select research topics on individual artists, community arts groups, or a genre of the arts.

(4) Three elective courses (12 units) which may be considered from the list below (or which may be petitioned in from a wide range of departments). In order to meet degree requirements, all electives must be related to the major and approved by the concentration adviser. The three courses selected to meet this requirement must be upper division courses from three different areas outside the area of concentration.

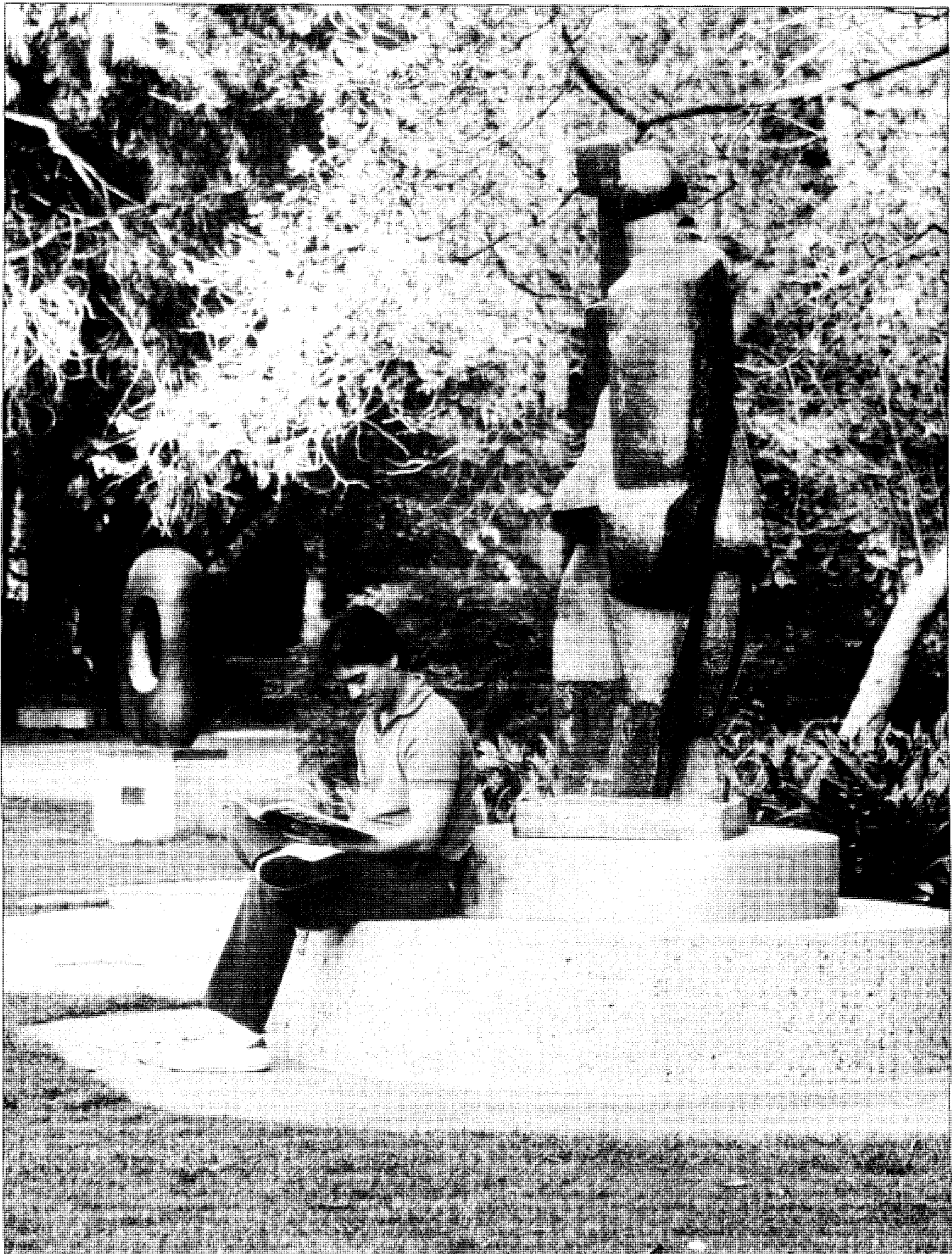
### Honors Program

Majors enrolled in the College of Letters and Science who have a cumulative GPA of 3.0 overall and a cumulative GPA in major coursework of 3.5 or better are eligible to participate in the College Honors program. Interested students should consult the student affairs officer and the Honors Programs Office.

### Upper Division Courses

**100. Introduction to World Arts and Cultures.** Lecture, three hours. Limited to world arts and cultures majors. Introduction to concepts and theories which integrate and underlie the multidisciplinary world arts and cultures major. Ms. Mitoma (F)

**120. Field Studies in World Arts and Cultures.** Seminar, two to four hours; fieldwork in community settings, eight to 12 hours. Field studies in the arts. Seminars, guest speakers, and field trips provide theory and methodology related to ethnographic research and/or internship placements. Projects emphasize ethnic communities or international arts organizations. May be repeated once for credit.





**130. Selected Topics in World Arts and Cultures.** Lecture, three hours. Prerequisite: junior standing. Selected topics dealing with arts and cultures through disciplines of anthropology, art history, dance, folklore and mythology, music, and theater, and additional multidisciplinary cross-cultural areas. Consult *Schedule of Classes* for topics to be offered in a specific term. May be repeated twice for credit. P/NP or letter grading.

**140A. Art and Social Responsibility.** Prerequisite: junior standing. Discussion of what constitutes an artist's social responsibility and in what ways art is qualified to engage in direct political action. Study of tension between the powers of this world and the powers of art. P/NP or letter grading. Mr. Sellars (F)

**140B. Art as Moral Action.** Prerequisite: junior standing. One's ability to distinguish between right and wrong action is culturally intuited, nurtured, and developed. Study of cultural strategies of moral engagement, persuasion, and inquiry in personal and public life, including acts of conscience and civil disobedience. P/NP or letter grading.

Mr. Sellars (W)

**140C. Seminar: Intercultural and Interdisciplinary Performance.** Prerequisite: junior standing. Recent discussions of multiculturalism have demanded a broader base of cultural literacy for society in general and from artists in particular. Moving beyond stereotyping and formalism, focus on areas of overlap and exchange, collaborations, collective creation, hybridization, and evolving possibilities of video and extended media. P/NP or letter grading.

Mr. Sellars (Sp)

**M162P. Destruction and Survival of Indigenous Societies.** (Same as Anthropology M162P.) Lecture, three hours. Prerequisite: Anthropology 9 or upper division standing or consent of instructor. Clarification of concepts and forms of destruction and survival; analysis directed to different processes threatening the institutions of a group and its survival. Exploration of current theories of ethnocide and genocide for their relevance and validity. P/NP or letter grading.

Ms. Bray

**190A-190B. World Arts and Cultures Senior Colloquium.** Limited to senior world arts and cultures majors. Comparative and integrative studies in world arts and cultures, with application of concepts and content from the six disciplines of the major. Lecture/seminar format with World Arts and Cultures faculty during first term; topics include arts in a societal context, ethnicity and the individual, and problems and approaches to fieldwork. Faculty-directed individual projects during second term. Fieldwork on some aspect of various arts/expressive behaviors found in ethnic communities of Los Angeles. In Progress grading.

Mr. Trimillos (W,Sp)

**199. Special Studies in World Arts and Cultures (2 to 8 units).** Prerequisites: junior standing, 3.0 GPA in major, consent of instructor. Individual studies for world arts and cultures majors. May be taken twice for a maximum of eight units. (F,W,Sp)

## Upper Division Electives

This is a sample list only; while all electives must be petitioned, many other options exist besides those listed.

### Anthropology 110. World Archaeology

- 113P. Archaeology of North America
- 113Q. Prehistory of California Indian Cultures
- 113R. Southwestern Archaeology
- 114P. Ancient Civilizations of Western Middle America (Nahuatl Sphere)
- 114Q. Ancient Civilizations of Eastern Middle America (Maya Sphere)
- 114R. Ancient Civilizations of Andean South America
- 118A, 118B. Museum Studies
- 122. Biology, Society, and Culture

### 130. Study of Culture

- 130P. Study of the Individual in Society and Culture
- 133R. Aesthetic Systems
- 135C. Seminar: Psychocultural Studies
- M136Q. Laboratory for Naturalistic Observations: Developing Skills and Techniques
- 137. Ethnography on Film
- 139, 139L. Field Methods in Cultural Anthropology
- M140. Language in Culture
- 144. American Indian Ethnolinguistics and Sociolinguistics
- 145. Afro-American Sociolinguistics: Black English
- 146. Language and Culture in Polynesia: Past, Present, and Future.
- 150. Study of Social Systems
- 153. Evolution of Human Societies
- M154. *Women in Culture and Society*
- 156. Comparative Religion
- 162. Contemporary American Indian Problems
- M164. The Afro-American Experience in the U.S.
- M168. Health in Culture and Society
- 171. Civilizations of Sub-Saharan Africa
- 172R. Cultures of the Pueblo Southwest
- M172T. Ethnohistory of Hispanic Cultures in the U.S. Southwest
- 174P. Ethnography of South American Indians
- 174Q. Ethnology of South American Indians
- 175P. Civilizations and Cultures of Southeast Asia
- 175Q. Civilizations of South Asia
- 175R. Civilizations of Inner Asia
- 177. Cultures of the Pacific

### Art History 101A. Egyptian Art and Archaeology

- 101B. Egyptian Art and Archaeology of the Middle and New Kingdoms
- M102A. Minoan Art and Archaeology
- M102B. Mycenaean Art and Architecture
- M102C. Archaic Greek Art and Archaeology
- M102D. Classical Greek Art and Archaeology
- M102E. Hellenistic Greek Art and Archaeology
- M102F. Etruscan Art
- M102G. Roman Art
- M102H. Late Roman Art
- 104A. Western Islamic Art
- 104B. Eastern Islamic Art
- C104C. Problems in Islamic Art
- 114A. Early Art of India
- 114C. Japanese Art
- 114D. Later Art of India
- 114E. Arts of Korea
- 114F. Arts of Southeast Asia
- C115A. Advanced Indian Art
- C115B. Advanced Chinese Art
- C115C. Advanced Japanese Art
- C115D. Art of Early China, Neolithic to A.D. 906
- C117A. Pre-Columbian Art of Mexico
- C117B. Pre-Columbian Art of the Maya
- C117C. Pre-Columbian Art of the Andes
- 118A. Arts of Oceania
- 118C. Arts of Sub-Saharan Africa
- 118D. Arts of Native North America
- C119A. Advanced Studies in African Art: Western Africa
- C119B. Advanced Studies in African Art: Central Africa
- Chinese (East Asian Languages) 150. Chinese Literature in Translation: Classical Literature**
- 151. Chinese Literature in Translation: Modern Literature
- 160. Chinese Buddhism
- 175. Introduction to Chinese Thought
- 190. Archaeology in China

### Classics 161. Introduction to Classical Mythology

- 168. Introduction to Comparative Mythology
- Dance 134A. History of Dance in Western Culture, Origins to 1600**
- 134B. History of Dance in Western Culture, 1600 to the Present
- 152. Dance as Culture in Education
- C171B. Dance of Indonesia (courses 71B through 79Z are prerequisites for C171B through C179Z)
- C171D. Dance of India
- C172B. Dance of West Africa
- C173B. Dance of Mexico
- C174C. Dance of Spain
- C176B. Dance of Israel
- 181A. Dance Cultures of Asia
- 181B. Dance in Southeast Asia
- 181C. Dance in East Asia
- 181D. Dance in South Asia
- 182. Dance in Africa and the African Diaspora
- 183. Dance in Latino American Cultures
- C187. Dance in Native American Cultures
- English M104A. Early Afro-American Literature**
- M104B. Afro-American Literature from the Harlem Renaissance to the 1960s
- Ethnomusicology and Systematic Musicology**
- 106A-106B-106C. Music of the American Indians
- 108A-108B. Music of Latin America
- M110A-M110B. The Afro-American Musical Heritage
- 113. Music of Brazil
- 117. American Popular Music
- 120A-120B. Development of Jazz
- M126. Folk Music of Western Europe
- 128. Folk Music of Eastern Europe
- 130. Folk Music of the Mediterranean
- 136A-136B. Music of Africa
- 146. Folk Music of South Asia
- 147. Survey of Classical Music in India
- 156A-156B. Music of China
- 157. History of Chinese Opera
- 158A-158B-158C. Studies in Chinese Instrumental Music
- 160A. Survey of Music in Japan
- 160B. Studies in Japanese Court Music
- 170. Acoustics
- 172A-172B. Psychology of Music
- 174. Aesthetics of Music
- 176. Problems in Musical Aesthetics
- M180. Analysis of Traditional Music
- 181. Anthropology of Music
- Film and Television 106C. History of African, Asian, and Latin American Film**
- 110A. History of Broadcasting
- 128. Media and Ethnicity
- Folklore and Mythology CM106. Anglo-American Folk Song**
- 108. Afro-American Folklore and Culture
- M111. Literature of Myth and Oral Tradition
- M112. Survey of Medieval Celtic Literature
- 118. Folk Art, Folklife, and Material Culture
- M121. British Folklore and Mythology
- M122. Celtic Mythology
- M123A. Finnish Folklore and Mythology
- M123B. Finnish Folk Song and Ballad
- 124. Finnish Folk Art and Technology
- M125. Folklore and Mythology of the Lapps
- M126. Baltic and Slavic Folklore and Mythology
- M127. Celtic Folklore
- M128. Hungarian Folklore and Mythology
- M129. Folklore and Mythology of the Ugric Peoples

130. North American Indian Folklore and Mythology Studies

131. Folklore of India

M149. Folk Literature of the Hispanic World

M150. Russian Folk Literature

M154A-M154B. The Afro-American Musical Heritage

M180. Analysis of Traditional Music

M181. Folk Music of Western Europe

190. Selected Topics in Folklore and Mythology Studies

199. Special Studies in Folklore

**German (Germanic Languages)** 134. German Folklore

**Japanese (East Asian Languages)** 150. Japanese Literature in Translation: Classical

151. Japanese Literature in Translation: Modern

160. Japanese Buddhism

175. Introduction to Japanese Thought

**Music** 158. New Orleans Jazz

**Musicology** 130. Music of the U.S.

139. History and Literature of Church Music

**Theater** M103A. African American Theater History: Slavery to Mid-1800s

M103B. African American Theater History: Minstrel Stage to Rise of the American Musical

M103C. Origins and Evolution of Chicano Theater

M103D. Contemporary Chicano Theater

M103E. African American Theater History: The Depression to the Present

103F. Native American Theater

104A-104B-104C. History of American Theater

111A. Selected Topics on History of European Theater from Primitive Times to 1640

111B. Selected Topics on History of European Theater from 1640 to 1900

111C. Selected Topics on History of European Theater from 1900 to the Present

118A. Creative Dramatics

119A. Theater for the Child Audience: Theory and Criticism

119B. Theater for the Child Audience: Performance

140A. Scenic Techniques for the Stage

141A. Lighting Techniques for the Stage

142B. Advanced Costuming for the Stage

144. Theater Sound Techniques

153A. Costume Design

C155G. Graphic Representation of Design: Scene Painting Techniques

C158A. Scenic Design Technology

160. Fundamentals of Play Direction

C190B. Role of Management in Educational and Community Theater

**World Arts and Cultures** 120. Field Studies in World Arts and Cultures

130. Selected Topics in World Arts and Cultures

140A. Art and Social Responsibility

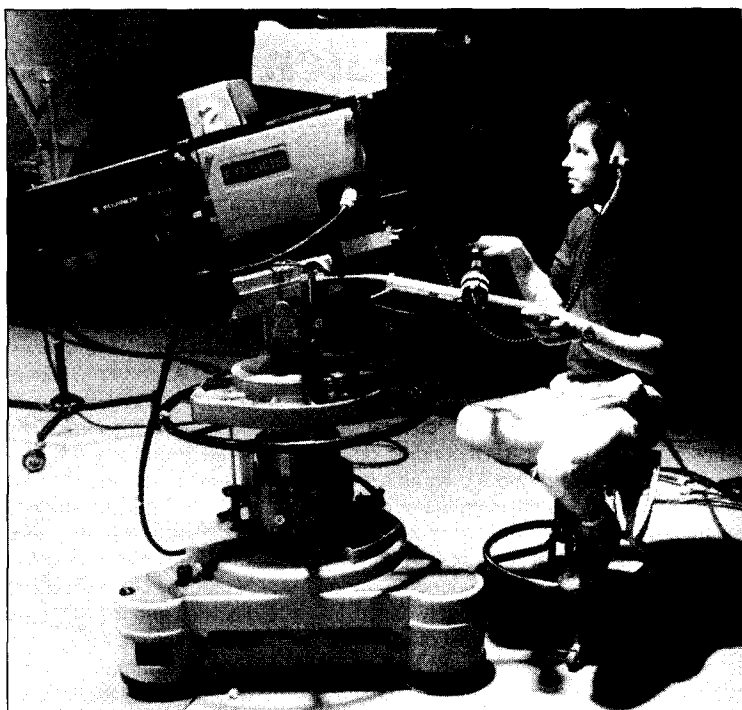
140B. Art as Moral Action

140C. Seminar: Intercultural and Interdisciplinary Performance

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# School of Theater, Film, and Television

Gilbert Cates, Dean



The School of Theater, Film, and Television consists of the Department of Theater and the Department of Film and Television, recognized national centers for higher education in production and performance as well as theory and criticism. Whether exploring the ancient and sacred roots of theater or the latest secular rituals enacted by popular film, creating a dramatic character on a bare stage or a dramatic narrative on screen, or writing scripts or scholarly articles, our students study and practice both the aesthetic forms and cultural significance of theater, film, and television. Offering an intensive, discipline-based curriculum, the school recognizes the inherent differences of theater, film, and television, affirms their similarities, and encourages their interaction. Both art forms and cultural interventions, theater, film, and television have in common the ability and power to reflect and shape our perception of a complex, diverse, and ever-changing world. We believe — as artists and scholars — that we have an obligation to reflect on this power and to use it responsibly.

Situated in the diverse and culturally rich environment of Los Angeles and drawing on the many resources of the campus at large, including the UCLA Center for the Performing Arts, Westwood Playhouse, and UCLA Film and Television Archive, the school provides the ideal setting for students to engage in the study and practice of these art forms so integral to a healthy and dynamic society.

# 7

# School of Theater, Film, and Television

103 East Melnitz Building, (310) 825-5761

The Department of Theater and the Department of Film and Television are essential components of the rich intellectual, cultural, and professional life of UCLA. Depending on the degree involved, the school's programs are either strongly professional in nature or oriented toward advanced scholarly study and research in an atmosphere that recognizes and often draws on studio practice. Students in undergraduate courses receive a broadly based, liberal education within the context of either theater or film and television. The various specializations of the Master of Fine Arts degree are professional programs geared to preparing talented and highly motivated students for careers in the worlds of theater, film, and television. The M.A. and Ph.D. programs engage students in the critical study and research of each medium, including history, aesthetics, and theoretical issues, and prepare students for advanced research within the context of college and university teaching, as well as for writing and research in a variety of media-related professions.

In the Department of Theater, approximately 275 undergraduate and 125 graduate students interact with over 40 faculty members, outstanding guests of national and international standing, and a professional staff of 35 in an exciting artistic community of theater production and study. Resources include the three theaters of the Macgowan Hall complex. Specializations in the Master of Fine Arts program include acting, directing, playwriting, design, technology and production management, and the producers program. Most specializations include an internship.

The Department of Film and Television includes both production and critical studies programs, with approximately 250 graduate and 70 undergraduate students. The 50 faculty members include leading scholars as well as members of the Los Angeles and international film and television professional communities. In production, graduate specializations are of-

fered in the areas of film and television production, screenwriting, animation, and the producers program. The critical studies program offers M.A. and Ph.D. degrees for the advanced scholarly study of film and television. The department's resources in Melnitz Hall include three sound stages, three television studios, extensive editing, scoring, and viewing facilities, and a complete animation laboratory for both traditional and computer-generated animation. The M.A. and Ph.D. programs are supported by the collections of the University's libraries and the UCLA Film and Television Archive, the largest in the U.S. outside the Library of Congress. This archive forms a unique and priceless resource for research and class use.

Additionally the school participates in the undergraduate interdisciplinary world arts and cultures major which integrates art, dance, music, theater, anthropology, and folklore and mythology within one unique program. M.A. and Ph.D. faculty members and students also participate in various campus organized research units.

Informative brochures on the school are available from the Student Services Office, 103 East Melnitz Building, UCLA, Los Angeles, CA 90024-1622.

If you are interested in obtaining instructional credentials for California elementary and secondary schools, consult the Graduate School of Education, 1605 Maxxam Building (122 Moore Hall in early 1994, 310-825-8328).

## Undergraduate Study

### Admission

In addition to the University of California Undergraduate Application, departments in the School of Theater, Film, and Television require supplementary material. Detailed information on departmental requirements is mailed to you on receipt of your application. Deadline date for applications is November 30, 1993, for admission in Fall Quarter 1994.

### The Study List

Each term the student Study List must include from 12 to 17 units. The school has no provision for part-time enrollment. After your first term, you may petition to carry more than 17 units (up to 20 units maximum) if you have an overall grade-point average of 3.0 (B) or better **and** have attained at least a B average in the preceding term with all courses passed. The petitions must be filed and approved by the Student Services Office by the end of the fourth week of instruction.

If you have not filed your Study List by the end of the second week of classes, you must obtain the consent of the dean of the school to continue for that term.

### Graduate Courses

Undergraduate students who wish to take courses numbered in the 200 series for credit toward the degree must petition for advance approval of the department chair and the dean of the school and must meet the specific qualifications. Courses numbered in the 400 and 500 series may not be applied toward the degree.

### Concurrent Enrollment

Enrollment at another institution or UCLA Extension while enrolled at UCLA is not permitted.

## Requirements for Bachelor of Arts Degrees

Each student must meet six kinds of requirements for the B.A. degree: University, school, and unit requirements, as well as residence, major, and scholarship requirements. The requirements are as follows.

### University Requirements

For information on the Subject A or English as a Second Language (ESL) and American History and Institutions requirements, see "Undergraduate Degree Requirements" in Chapter 2 of this catalog.

School of Theater, Film, and Television students enrolled in English as a Second Language 33A, 33B, 33C must take the courses for a letter grade.

### School Requirements

The general requirements of the School of Theater, Film, and Television must be completed with a grade-point average of 2.0 or better.

### Majors and Degrees Offered

Film and Television .....	M.A., M.F.A., C.Phil., Ph.D.
Motion Picture/Television .....	B.A.
Theater .....	B.A., M.A., M.F.A., C.Phil., Ph.D.

## Literature

\*Three courses (12 units) in literature are required, at least one of which must be upper division. Any literature course taken in the original language can fulfill this requirement.

## Foreign Language

You may meet this requirement by (1) scoring 3, 4, or 5 on the Advanced Placement (AP) foreign language examination in French, German, or Spanish, (2) presenting a UCLA foreign language proficiency examination score indicating competency through level three, or (3) completing one college-level foreign language course equivalent to UCLA's level three or above with an average grade of C or better.

International students whose entire secondary education has been completed in a language other than English may petition to be exempt from the foreign language requirement.

## General Education (GE) Course Requirements

Listed below is the set of general education (GE) requirements that were effective Fall Quarter 1992. Students admitted prior to Fall Quarter 1992 are required to fulfill the previous GE requirements as listed in the catalog of their entrance year. For assistance in determining the set of requirements for which you will be held responsible, contact a school counselor.

For specific courses that fulfill the general education requirements, consult the Student Services Office before enrolling. Courses listed below are used only as a guideline. Note: Courses that include the review of film or television may not be applied toward any general education requirements.

### Reciprocity with Other UC Campuses —

Students who transfer to UCLA from other UC campuses and have met all general education requirements prior to enrolling at UCLA are not required to complete the School of Theater, Film, and Television general education requirements. Written verification from the college dean at the other UC campus is required. Verification letters should be sent to Director of Student Services, School of Theater, Film, and Television, 103 East Melnitz Building, UCLA, Los Angeles, CA 90024-1622.

### Intersegmental General Education Transfer Curriculum (IGETC) —

Transfer students from non-UC schools have the option to fulfill UCLA's lower division general education requirements by completing the Intersegmental General Education Transfer Curriculum prior to transfer. The curriculum consists of a series of subject areas and types of courses which have been agreed on by the University of California and the California community colleges. The IGETC significantly eases the transfer process, as all of UCLA's

general education requirements are fulfilled when you complete it. If you select the IGETC, you must complete it entirely before enrolling at UCLA. Otherwise, you must fulfill the School of Theater, Film, and Television general education requirements. The Office of Undergraduate Admissions and Relations with Schools determines, at the point of admission, your completion of the IGETC.

### English Composition and Rhetoric

English 3 with a minimum grade of C or an AP score of 4 should be completed by the end of your freshman year and may not be taken on a Passed/Not Passed basis.

### Critical Reading and Writing

One course from English 4, \*Humanities 2A, 2B, or 2C with a minimum grade of C or an AP score of 5 should be completed by the end of your sophomore year and may not be taken on a Passed/Not Passed basis.

### Art and Philosophy

Five courses (20 units), with no more than two courses from any single group:

**Group A** — Art History 50, 51, 54, 55A, 55B, 56A, 56B, 57, Classics 51, Design 30A.

**Group B** — Dance 134A, 134B, 181A, 182, C187.

**Group C** — Ethnomusicology and Systematic Musicology 20A, 20B, 20C, 108A, 108B, M110A, M110B, 113, 136A, 136B, 147, 174, Music 15, Musicology 2A, 2B, 13, 133, 134, 135A, 135B, 135C.

**Group D** — Philosophy 1, 2, 4, 5A, 6, 7, 8, 21, 22.

### Social Sciences

Three courses (12 units), with no more than two courses from any single group. Whenever possible, two courses from a single sequence are recommended:

**Group A** — Chinese 50, Classics 10, 20, East Asian Languages and Cultures 60, Folklore and Mythology 15, German 100A, 100B, 100C, Italian 42A, 42B, Japanese 50, Jewish Studies 10, Korean 50, Portuguese M42, M44, Russian 99A, 99B, Spanish M42, M44, Women's Studies 10.

**Group B** — History 1A, 1B, 1C, 3A through 3D, 4, 5A, 5B, 6A, 6B, 6C, 7A, 7B, 8B, 8C, 8D, 9A through 9D, 10A, 10B, 11A, 11B, Political Science 10, 20, 40, 50.

**Group C** — Anthropology 8, 9, 33, Psychology 10, 11, Sociology 1, 2, 3, 4, 31.

### Science

One course (four units) in physical sciences and one course (four units) in biological sciences:

**Group A — Physical Sciences** — Astronomy 2A, 2B, 3, 4, 5, 6, Atmospheric Sciences 2, 3, 4, 5, 6, Chemistry and Biochemistry 2, 11A,

11B, 15, Earth and Space Sciences 1, 2, 5, 8, 9, 15, Geography 1, Mathematics 2, 3A, 3B, 5, 31A, 31B, 31E, Physics 3A, 3B, 3C, 6A, 6B, 6C, 8A, 8B, 8C, 10.

**Group B — Biological Sciences** — Anthropology 7, 10, 12, 15, Biology 2, 5, 6, 10, 13, 20, 21, 25, 40, 70, Earth and Space Sciences 16, Geography 2, 5, Microbiology and Molecular Genetics 6, 7, Psychology 15.

### Unit Requirements

Double majors in the school, or between the school and other academic units, are not permitted.

You must complete for credit, with a passing grade, no less than 180 units and no more than 208 units, of which at least 64 units must be upper division courses (numbered 100 through 199). No more than 16 units of CED courses and eight units of freshman seminars or 300-level courses may be applied toward the degree. Credit for 199 courses is limited to 16 units, eight of which may be applied to the major. All 199 courses must be taken for a letter grade.

UCLA Extension courses with the prefix X on those numbered in the 1 through 199, 200, 300, 400, or 800 series may not be applied toward the degree.

Credit earned through the College Entrance Examination Board (CEEB) Advanced Placement Tests may be applied toward the general education requirements. Portions of Advanced Placement Test credit may be evaluated by corresponding UCLA course numbers (e.g., History 1C). If you take the equivalent UCLA course, unit credit for such duplication is deducted before graduation.

### Residence Requirements

You are "in residence" while enrolled and attending classes at UCLA as a major in the School of Theater, Film, and Television. Of the last 45 units completed for the bachelor's degree, 35 must be earned in residence in the School of Theater, Film, and Television. No more than 18 of the 35 units may be completed in UCLA Summer Sessions.

Courses in UCLA Extension (either class or correspondence) may not be applied toward any part of the residence requirements.

### Major Requirements

A major is composed of not less than 14 courses (56 units), including at least nine upper division courses (36 units). The theater major includes both lower and upper division courses. Those listed under "Preparation for the Major" (lower division) must be completed before upper division/major work is undertaken. The motion picture/television major requires upper division work only.

You must complete your major with a scholarship average of at least a 2.0 (C) in all courses in order to remain in the major and must be

\*If Humanities 2A, 2B, or 2C is taken to meet the critical reading and writing requirement, it may not also be applied toward the literature requirement; English 4 may never be applied toward the literature requirement.

recommended by the chair of your major department. All courses in the school must be taken for a letter grade.

As changes in major requirements occur, you are expected to satisfy the new requirements insofar as possible. Hardship cases should be discussed with the departmental adviser, and petitions for adjustment should be submitted to the dean of the school when necessary.

Any department offering a major in the School of Theater, Film, and Television may require a general final examination.

### Scholarship and Minimum Progress

A 2.0 (C) average is required in all work attempted at the University of California, exclusive of courses in UCLA Extension and those graded Passed/Not Passed. A C average is also required in all upper division courses in the major taken at the University, as well as in all courses applied toward the general education and University requirements.

**Minimum Progress** — You are expected to complete satisfactorily at least 36 units during any three consecutive terms in residence; you are placed on probation if you fail to pass these units. You are subject to dismissal if you fail to pass at least 32 units in three consecutive regular terms in residence.

### Honors

To receive **Dean's Honors** in the School of Theater, Film, and Television, you must have at least 12 graded units per term with a grade-point average of 3.8 for less than 16 units of work (3.7 GPA for 16 or more units). The honor is posted on your transcript for the appropriate term. You are not eligible for Dean's Honors in any given term if you receive an Incomplete or a Not Passed (NP) grade, change a grade, or repeat a course.

**Honors at graduation** are awarded to students with superior grade-point averages. To be eligible, you must have completed 90 or more units for a letter grade at the University of California. The levels of honors and the requirements for each level are: *cum laude*, an overall average of 3.66; *magna cum laude*, 3.762; *summa cum laude*, 3.817.

### Counseling and Program Planning

The School of Theater, Film, and Television offers advising, program planning in the major and general education requirements, and individual meetings with departmental counselors, including a yearly degree check sent to each student. Prior to registration and enrollment in classes, each new student is assigned to a counselor in the major department. For further counseling information, contact the Student

Services Office, School of Theater, Film, and Television, 103 East Melnitz Building (310-825-5761).

## Graduate Study

The advanced degree programs offered in the School of Theater, Film, and Television provide graduate students with unique research opportunities when combined with special resources, such as the University Research Library, the special collections of the Arts Library, and the University's exhibition and performance halls.

The School of Theater, Film, and Television cooperates with the UCLA John E. Anderson Graduate School of Management in offering a Master of Business Administration (M.B.A.) in Entertainment Management. Participating students serve term-long internships with such professional arts organizations as the Los Angeles County Museum of Art, the Mark Taper Forum, and the Los Angeles Philharmonic Orchestra.

The producers program is an M.F.A. management program in the Departments of Theater and Film and Television, with options in either theater or film and television.

A program in teaching is offered by the Graduate School of Education in each of these areas.

Fellowships, grants, and assistantships are available through the dean of the Graduate Division. The Graduate Affirmative Affairs Office provides counseling, academic support, and financial assistance to ethnic minority students.

### Admission

In addition to requiring that applicants hold a bachelor's degree from an accredited U.S. institution or an equivalent degree of professional title from an international institution, each department in the school has limitations and additional requirements. Detailed information can be found in the departmental listings which follow.

For information on the proficiency in English requirements for international graduate students, refer to "Graduate Admission" in Chapter 3.

### Other Requirements

Requirements to fulfill each degree objective vary according to the degree and the department. See the departmental listings which follow for specific requirements and procedures.

## Film and Television

103 East Melnitz Building, (310) 825-5761

### Professors

Jerzy Antczak, M.A.  
Nicholas K. Browne, Ed.D.  
Gilbert Cates, M.A., *Dean*  
Lewis R. Hunter, M.A.  
Dan F. McLaughlin, M.A.  
Jorge R. Preloran, B.A.  
Robert Rosen, M.A., *Chair*  
Delia N. Salvi, Ph.D.  
Peter Wollen, B.A., *Acting*

### Professors Emeriti

William B. Adams, M.A.  
John D. Boehm, M.A.  
Edgar L. Brokaw, B.A.  
Shirley M. Clarke, A.A.  
Arthur B. Friedman, Ph.D.  
William Froug, B.J.  
Hugh M. Grauel, M.A.  
Richard C. Hawkins, M.A.  
Walter K. Kingson, Ed.D.  
Mark McCarty, M.A.  
William H. Menger, M.A.  
Darrell E. Ross, M.F.A.  
Ruth E. Schwartz, Ph.D.  
Frank A. Valert, M.A.  
John W. Young, M.A.

### Associate Professors

Janet Bergstrom, Ph.D.  
Teshome H. Gabriel, Ph.D.  
Stephen D. Mamber, Ph.D.  
Robert A. Nakamura, M.F.A.  
Howard Suber, Ph.D. (*Distinguished Teaching Award*)  
Richard Walter, M.A.

### Assistant Professor

Chon A. Noriega, Ph.D.

### Lecturers

Scott Brownlee, C.A.P.  
Dee Caruso, M.A.  
John Cones, J.D.  
Robert Friedman  
Gerald Isenberg, M.B.A.  
Robert Jennings, M.A.  
Stacey Lassally, J.D.  
Nigel Pearson  
Daniel Pyne, M.F.A.  
Cathy Rabin, Ph.D.  
Arnold Rifkin  
Tom Sherak, A.A.  
Nigel Sinclair, LL.M.  
C. Fabian Wagmister, M.F.A.

### Adjunct and Visiting Professors

Harold Ackerman, M.A., *Adjunct*  
Max Almy, M.F.A., *Visiting*  
Burt Brinckerhoff, *Visiting*  
John T. Caldwell, Ph.D., *Visiting*  
George Custen, Ph.D., *Visiting*  
Thomas F. DeNove, *Visiting*  
Vera Dika, Ph.D., *Adjunct*  
Patrick Drummond, *Visiting*  
Richard Edwards, B.A., *Adjunct*  
Gyula Gazdag, M.F.A., *Visiting*  
A.P. Gonzalez, M.A., *Adjunct*  
Peter Guber, LL.M., *Visiting*  
Velina Houston, Ph.D., *Visiting*  
Jonathan Kuntz, Ph.D., *Visiting*  
David Marc, Ph.D., *Visiting*

Barbara Marks, *Visiting*  
 Richard Marks, B.A., *Visiting*  
 Nancy Sackett, M.F.A., *Adjunct*  
 Myri Schreiberman, M.F.A., *Adjunct*  
 Robert M. Silberling, M.F.A., *Visiting*  
 Janet Staiger, Ph.D., *Visiting*  
 Robert Trachinger, *Adjunct*

## Scope and Objectives

The purpose of the Film and Television Department is to develop in its students a scholarly, creative, and professional approach to the film and television arts. The aim of the department is to train graduates who will eventually make original contributions in their chosen field.

The department offers graduate programs leading to the Master of Arts, Master of Fine Arts, and Ph.D. degrees in Film and Television.

## Bachelor of Arts in Motion Picture/Television

### Preparation for the Major

Students are admitted for Fall Quarter only. Admission is competitive, and only a limited number of students can be accepted each year. Prior to entry, you must complete at least 84 quarter units (56 semester units) with a 3.0 GPA or better and the general education requirements of the School of Theater, Film, and Television. You are also required to submit a portfolio of original written work consisting of (1) a personal essay, (2) a critical essay on a film, and (3) a creative writing sample. For further information on admission, contact the Student Services Office, School of Theater, Film, and Television, 103 East Melnitz Building, UCLA, Los Angeles, CA 90024-1622.

### The Major

*Required:* Film and Television 130A, 130B, 175A-175B, 185, two film/television history courses from 106A, 106B, 106C, 108, 110A, two film/television theory and criticism courses from 107, 110B, 110C, 112, 113, 114, 116, and 18 to 24 units of film and television elective courses for a minimum total of 68 upper division units in the major. It is recommended that the majority of the required courses be completed during the junior year.

You should be mindful of the exigencies inherent in filmmaking and be prepared to meet the additional demands of time and costs.

Students are required to perform assignments on each other's projects. In addition, the department reserves the right to hold for its own purposes examples of any work done in classes and to retain for distribution such examples as may be selected.

Consult the *Schedule of Classes* for courses limited to majors only.

## Graduate Study

The department offers the Master of Arts (M.A.), Master of Fine Arts (M.F.A.), and Doctor of Philosophy (Ph.D.) degrees in Film and Television.

### Admission

Students are admitted for Fall Quarter only. Admission is competitive, and only a limited number of students are accepted each year in each program. The department does not have an application in addition to the one used by UCLA Graduate Application Processing, and no screening examination prior to admission is required. For further information, contact the Student Services Office, School of Theater, Film, and Television, 103 East Melnitz Building, UCLA, Los Angeles, CA 90024-1622.

Additional admission requirements are noted under each specific program.

## Master of Arts Degree

### Admission

In addition to the UCLA graduate application, you must submit a sample of scholarly or critical writing, a statement of purpose, three letters of recommendation, Graduate Record Examination (GRE) scores, and proof of competence in English for international students whose native language is not English (e.g., TOEFL scores). Consult the Student Services Office, School of Theater, Film, and Television, 103 East Melnitz Building, UCLA, Los Angeles, CA 90024-1622, for further information.

### Major Fields or Subdisciplines

The program requires that you be conversant in both film and television, as you are tested on each in the comprehensive examination.

### Research Tool Requirement

You may be required to demonstrate competence in a foreign language if necessary to support the research in your area of study. The language requirement may be met by (1) passing the Graduate School Foreign Language Test (GSFLT) in French, Spanish, German, or Russian with a score of 500 or better, (2) completing a level five foreign language course or equivalent with a grade of C or better, or (3) passing a UCLA language examination given in any foreign language department.

In certain cases, with committee approval, courses in statistics or computer science may fulfill the research tool requirement.

### Course Requirements

A minimum of nine courses is required, five of which must be 200-level courses in film and/or television history, theory, or criticism. Of the five courses, Film and Television 200, 206C, 208B, and 217 are required core courses. The remaining seminar must be selected from course 203, 206A, 208A, 208C, 209A, 209B, 209D, 210, 211A, 211B, 219, 220, 221, 222, 223, 270, 271, 276, 277, or 298A-298B (only as approved by

the chair). All five graduate-level courses must be completed with a grade of B or better. You select electives to complete the minimum requirement of nine courses with the advice and approval of the film and television studies committee.

Eight units of courses 596A, 596B, 596C, and 598 may be applied toward the total course requirement for the degree; however, none of these courses may be applied toward the minimum graduate course requirement.

## Comprehensive Examination Plan

The written examination consists of two days of testing, four hours each day, and examines a broad range of knowledge in film and television. After completion, your committee grades you either pass or fail. You may be reexamined on any failed portions of the examination when it is next regularly scheduled, or within the year following the term in which it was first taken. The examination is required of all M.A. students applying to the Ph.D. program.

## Thesis Plan

Under special circumstances and with the approval of the critical studies committee, you may propose a thesis in lieu of taking the comprehensive examination. Guidelines may be obtained from the chair of the critical studies program.

## Master of Fine Arts Degree

### Admission

Applicants with diverse backgrounds and undergraduate majors in areas other than theater, film, or television arts are encouraged. You must state clearly your degree objective (M.F.A.) and the area of specialization desired within the program: animation, film/television production, screenwriting, or producers program. All areas of specialization require three letters of recommendation.

If you intend to concentrate in film/television production, you must submit a description of the film or television project you may possibly undertake in graduate study. The description should be in proposal or treatment form, two to three pages in length.

If you intend to concentrate in writing, you must submit samples of creative writing such as screenplays, short stories, plays, poems, etc.

If you intend to concentrate in animation, you must submit a description of the animation project you may possibly undertake during graduate study, preferably in storyboard form. Other creative work may be submitted.

If you intend to concentrate in the producers program, you may submit a portfolio of supporting material which shows evidence of creative background, or a substantial statement of purpose and résumé.

Consult the Student Services Office, School of Theater, Film, and Television, 103 East Melnitz

Building, UCLA, Los Angeles, CA 90024-1622, for further information.

### Foreign Language Requirement

There is no foreign language requirement for the M.F.A. degree.

### Course Requirements

A total of 18 courses (72 units) is required, five of which must be at the graduate level. At least three courses must be in the 200 series in film history, aesthetics, or structure. Course requirements for each specialization are available from the Student Services Office.

Only 16 units of Film and Television 596 may be applied toward the total course requirement, and only eight of these units may be applied toward the minimum graduate course requirement. Only four units of course 596A and four units of course 596B may be taken prior to advancement to candidacy. Courses 596C through 596F may be taken only after advancement to candidacy.

Fieldwork and internships are not required but may be taken as courses which may be applied toward the degree.

### Comprehensive Examination Plan

The comprehensive plan is satisfied by fulfilling projects appropriate to your specialization. No later than the beginning of your final term in residence, you must submit for approval to the M.F.A. committee the appropriate documents for advancement to candidacy and a list of at least three faculty members who will serve on your committee. Consult the Student Services Office for further information.

### M.A.-African Area Studies/M.F.A.-Film and Television

The Department of Film and Television and the African Area Studies Program have an articulated degree program which allows students to combine study for the M.A. in African Area Studies and the M.F.A. in Film and Television. You must be accepted by both areas to pursue this degree program. Articulated programs do not allow course credit to be applied toward more than one degree. Interested students should write to the Graduate Adviser, Student Services Office, UCLA School of Theater, Film, and Television.

### Ph.D. Degree

#### Admission

Completion of an M.A. or M.F.A. degree equivalent to that offered by the UCLA Department of Film and Television is required. In exceptional cases, students with an M.A. outside the field are considered for direct admission to the program. The dossier submitted for admission must contain a letter describing your reasons for wishing to earn the Ph.D., the master's the-

sis or writing samples that demonstrate a high level of ability to write criticism or historical narrative, three letters of recommendation, GRE scores, and proof of competence in English for international students whose native language is not English (e.g., TOEFL scores).

Further information is available from the Student Services Office, School of Theater, Film, and Television, 103 East Melnitz Building, UCLA, Los Angeles, CA 90024-1622.

### Major Fields or Subdisciplines

You are expected to understand film and television within their social contexts as significant forms of art and communication, and to achieve by disciplined study a mastery of their history, theory, and criticism.

### Foreign Language Requirement

Mastery of one foreign language is required and must be demonstrated by one of the following methods: (1) passing the Graduate School Foreign Language Test (GSFLT) in French, Spanish, German, or Russian with a score of 500 or better, (2) completing a level five foreign language course or equivalent with a grade of C or better, or (3) passing a UCLA language examination given in any foreign language department. When mastery of more than one foreign language is necessary for your dissertation study, you are required to take courses or pass examinations in the additional language(s). Normally, the required foreign language examinations must be passed by the end of your first year in residence.

### Course Requirements

During your first six terms in the Ph.D. program, you must take 13½ courses. During your first year in residence, Film and Television 211B, 215, and 273 must be completed, while course 274 is required in your sixth term. In addition to this core sequence, course 496 is also required. Further, you must select nine graduate elective courses, at least six of which must be from film and television.

You must select courses from three areas of concentration, chosen to broaden your familiarity and competence in related subject areas. A suggested list of concentrations is as follows: film theory, criticism, narrative studies, film and the other arts, authors, genres, documentary, film history, American film, European film, non-Western film and television, television studies, media and society, film and television as a business enterprise, and film and television production. It is expected that the dissertation topic will emerge from one of the concentrations.

### Teaching Experience

Every student must complete Film and Television 496.

### Qualifying Examinations

At the end of your second term in residence, you must take a preliminary oral examination

conducted by the critical studies committee. The committee tests your progress to date and determines your general fitness to continue in the doctoral program. You present a plan of study at this time; guidelines are available from the Student Services Office.

After completion of all language and course requirements and approval of a dissertation prospectus, you are eligible to take and required to pass a written qualifying examination administered in three-hour segments during two successive days. Information regarding the examination is available from the chair of the critical studies committee. You may be reexamined on any failed portions of the examination when it is next regularly scheduled, or within the year following the term in which it was first taken.

After you pass the written examination, a doctoral committee is formed to administer the University Oral Qualifying Examination. You are advanced to candidacy only on successful completion of this examination.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Dissertation/Final Oral Examination

A dissertation demonstrating your ability to carry out independent and significant inquiry in a historical, theoretical, or critical field of film and/or television is required. Final award of the Ph.D. depends on successful completion of the dissertation.

A final oral examination, held after completion of the dissertation, may be required at the option of the dissertation committee.

### Upper Division Courses

**106A. History of the American Motion Picture (6 units).** Lecture/screenings, eight hours; discussion, one hour. Historical and critical survey, with examples, of the American motion picture both as a developing art form and as a medium of mass communication. May be repeated once for credit with consent of department and topic change.

**106B. History of the European Motion Picture (6 units).** Lecture/screenings, eight hours; discussion, one hour. Historical and critical survey, with examples, of the European motion picture both as a developing art form and as a medium of mass communication. May be repeated once for credit with consent of department and topic change.

**106C. History of African, Asian, and Latin American Film (6 units).** Lecture/screenings, eight hours; discussion, one hour. Critical, historical, aesthetic, and social study — together with exploration of the ethnic significance — of Asian, African, Latin American, and Mexican films.

**106D. Development of Film in Europe and the U.S. from WWI through the Depression.** Lecture/screenings, eight hours; discussion, one hour. Interdisciplinary and comparative approach to development of film in Europe and the U.S. from the silent era through the Depression. Particular emphasis on interrelationship of film with its historical context and social dimensions of film structure, aesthetics, and language.



**106E. Development of Film in Europe and the U.S. from WWII to the Present.** Lecture/screenings, eight hours; discussion, one hour. Course 106D is not prerequisite to 106E. Interdisciplinary and comparative approach to development of film in Europe and the U.S. from end of the 1930s to the present. Particular emphasis on interrelationship of film with its historical context and social dimensions of film structure, aesthetics, and language.

**107. Experimental Film (6 units).** Lecture/screenings, eight hours; discussion, one hour. Study and analysis of unconventional developments in the motion picture.

**108. History of Documentary Film (6 units).** Lecture/screenings, eight hours; discussion, one hour. Philosophy of documentary approach in the motion picture. Development of critical standards and examination of techniques of teaching and persuasion used in selected documentary, educational, and propaganda films.

**110A. History of Broadcasting.** Lecture/viewing, six hours; discussion, one hour. Critical survey of broadcasting here and abroad. Consideration of social responsibilities and educational implications of broadcasting.

**110B. Problems and Issues in Broadcast Media.** Lecture, four hours; discussion, two hours; laboratory, to be arranged. Prerequisite: consent of instructor. Study of current issues and problems related to public and commercial broadcast programming and management, including analysis of contemporary criticism of broadcast media.

**110C. World Media Systems.** Lecture/viewing, four hours; discussion, one hour. Prerequisites: course 110A or equivalent, upper division standing, consent of instructor. Global analysis of internal and external broadcasting services, with emphasis on their motives, origins, technologies, and programming. Special attention to political, economic, and regulatory constraints and common world media issues.

**112. Film and Social Change (6 units).** Lecture/screenings, eight hours; discussion, one hour. Development of documentary and dramatic films in relation to and as a force in social development.

**113. Film Authors (6 units).** Lecture/screenings, eight hours; discussion, one hour. In-depth study of a specific film author (director or writer). May be repeated once for credit with consent of department and topic change.

**114. Film Genres (6 units).** Lecture/screenings, eight hours; discussion, one hour. Study of a specific film genre (e.g., Western, gangster cycle, musical, silent epic, comedy, social drama). May be repeated once for credit with consent of department and topic change.

**115. Stylistic Studies for the Moving Image: Theory and Practice (6 units).** Lecture, four hours; screenings, four to eight hours. Drawing heavily on a wide array of historical examples and using laser disc technologies, examination of many expressive strategies potentially usable in creation of moving image art forms: iconography, editing, composition, kinesthetics, sound, narrative, discourse, and performance.

**116. Film Criticism.** Lecture, four hours; laboratory, to be arranged. Study of and practice in film criticism.

**126. Acting for Film and Television.** Laboratory, six hours. Prerequisite: consent of instructor. Projects in acting for television, video, and film. May be repeated twice for credit.

**128. Media and Ethnicity.** Prerequisite: consent of instructor. Utilizing the Asian American experience, exploration of impact and uses of media on contemporary American ethnic communities. Role and techniques of media influence besides community utilization and production.

**CM129. Contemporary Topics in Theater, Film, and Television (2 units).** (Same as Theater CM129.) Lecture, two hours; screenings, two hours. Prerequisite: upper division or graduate standing in theater/film and television. Examination of creative process in theater, film, and television, with consideration of writing, direction, production, and performance. Overview of individual contributions in the collaborative effort; examination of distinctiveness and interrelations among these arts. Individual units include participation of leading members of theater, film, and television professions. May be repeated for a maximum of six units. Concurrently scheduled with course CM229.

**130A. Screenwriting Fundamentals (2 units).** Lecture, one hour. Corequisite for graduate students enrolled in course 431. Examination of screenwriting fundamentals: structure, character and scene development, conflict, locale, theme, history of drama. Review of authors such as Aristotle, Egri.

**130B. Screenwriting Fundamentals Workshop.** Discussion, three hours. Prerequisite: consent of instructor. Problems in film and television writing.

**131. Nontheatrical Screenwriting for Film and Television (4 or 8 units).** Discussion, three hours. Prerequisite: consent of instructor. Research and writing of documentary, technical, educational, industrial, and propaganda scripts. May be repeated for a maximum of 12 units.

**135. Advanced Screenwriting Workshop (8 units).** Workshop, three hours. Prerequisites: course 130B and/or consent of instructor. Course in film and television writing. Original screenplays to be developed. May be repeated twice for credit. (F,W,Sp)

**150. Basic Cinematography: Film and Electronic.** Lecture, three hours; laboratory, three hours. Prerequisite: consent of instructor. Limited to film and television majors. Introduction to image control in motion picture photography through exposure, lighting, and selection of film, camera, and lens. Supervised projects in photography to complement material covered in lecture.

**151. Film and Television Image Laboratory.** Lecture, three hours; laboratory, to be arranged. Prerequisite: consent of instructor. Limited to film and television majors. Techniques of image manipulation, design, and art direction. May be repeated twice for credit (if repeated, students required to design and complete a short film).

**152. Film and Television Sound Recording.** Lecture, three hours; laboratory, to be arranged. Prerequisite: consent of instructor. Limited to film and television majors. Introduction to principles and practices of film and television sound recording, including supervised exercises.

**153. Color Cinematography.** Lecture, three hours. Prerequisite: consent of instructor. History and theories of color photography, with emphasis on present-day methods in film and television production. Comparative study of additive and subtractive systems as employed by Technicolor, Ansco, Kodak, and others.

**154. Film Editing.** Lecture, three hours; laboratory, to be arranged. Prerequisite: consent of instructor. Limited to film and television majors. Introduction to artistic and technical problems of film editing, with practical experience in editing of image and synchronous sound.

**164. Film Directing.** Laboratory, to be arranged. Prerequisite: consent of instructor. Study of problems faced by a film director and various approaches to their solution. May be repeated twice for credit.

**165. Television Directing.** Laboratory, six hours. Prerequisites: courses 130B, 185, consent of instructor. Introduction to and supervised exercises in television multicamera direction, with emphasis on creative use of cameras, sound, composition, and communication with those in front of and behind the camera. May be repeated twice for credit.

**175A-175B. Undergraduate Film Production (8 units, 4 to 8 units).** Prerequisite: consent of instructor. Limited to film and television majors. Not open to students with credit for former course 166. **175A.** Lecture, four hours; laboratory, eight hours. Writing, preproduction, and production for a short 16mm nonsynch film. **175B.** Lecture, three hours; laboratory, eight hours. Completion of postproduction (editing, creation of nonsynch sound tracks) for short film begun in course 175A.

**176A-176B. Undergraduate Production II (8 units each).** Lecture, three hours; laboratory, to be arranged. Prerequisites: courses 175A-175B, 185, consent of production faculty. Limited to film and television majors. Completion of a video production (no more than 20 minutes), including its writing, production, and editing.

**177. Film and Television Acting Workshop (2 units).** Laboratory, four hours. Prerequisite: consent of instructor. Workshop providing opportunities for students to rehearse, perform, and evaluate their scenes under supervision and criticism of instructor. Three different production styles to which performers may need to adjust are (1) preproduction rehearsals with director, (2) single-camera experience, and (3) (2) multiple-camera experience. May be repeated twice for credit (to accommodate performer's circumstance).

**178. Technical Film and Television Laboratory (2 or 4 units).** Laboratory, to be arranged. Prerequisite: consent of instructor. Limited to film and television majors. Laboratory on various aspects of film and television production. May be repeated for a maximum of 12 units, but only eight units may be applied toward film and television major.

**181A. Animation Design in Film and Television.** Lecture, three hours; laboratory, three hours. Prerequisite: consent of instructor. History and use of creative arts used in animation to form effective communication on film.

**181B. Writing for Animation (4 to 8 units).** Lecture, six hours; laboratory, to be arranged. Prerequisites: course 181A, consent of instructor. Research and practice in creative writing and planning for animated film. May be repeated for a maximum of 16 units.

**181C. Animation Workshop (4 or 8 units).** Lecture, six hours; laboratory, to be arranged. Prerequisites: course 181A, consent of instructor, storyboard at first class meeting. Organization and integration of various creative arts used in animation to form a complete study of a selected topic. May be repeated for a maximum of 16 units.

**185. Undergraduate Television and Video Production (8 units).** Laboratory, six hours (additional hours to be arranged). Prerequisite: consent of instructor. Limited to film and television majors. Instruction and exercises in basic techniques of television and video production.

**187A-187B-187C. Producing and Directing Field Television Programming (4 units, 6 units, 6 units).** Laboratory, three hours (additional hours to be arranged). Prerequisites: course 185, consent of instructor. **187A.** Introduction to field or remote broadcasting utilizing multiple- and single-camera video. Educational goals in student productions to be clarity of concept, simplicity in production, and meeting deadlines. **187B-187C.** Instruction and supervised productions of the remote experience, with focus on development and execution of concept. Experience closely patterned after professional experiences in working with talent, production venues, and production logistics of remote on-location video programs.

**189. Overview of Motion Picture Industry.** Discussion, three hours. Prerequisite: consent of instructor. Evolution of economic and business structure of motion pictures from early beginnings to present, stressing methods of operation and influence of social and economic pressures that contributed to changing financial, distribution, and exhibition practices.

**192. Film and Television Internship (4 to 8 units).** Field experience, to be arranged. Prerequisite: consent of instructor. Limited to senior film and television majors. Internship at film and television industry organizations. May be taken for a maximum of eight units.

**193A. Film Curatorship.** Lecture, two hours; discussion, two hours; laboratory, four hours. Prerequisite: consent of instructor. Study of principles and techniques of film curatorship and research, including but not limited to acquisitions, cataloging, storage, and retrieval systems. Special attention to application of new technology, equipment, and program materials to film archival-library design for research and teaching.

**193B. Television Curatorship.** Lecture, two hours; discussion, two hours; laboratory, four hours. Prerequisite: consent of instructor. Study of principles and techniques of television curatorship and research, including but not limited to acquisitions, cataloging, storage, and retrieval systems. Special attention to application of new technology, equipment, and program materials to television archival-library design for research and teaching.

**199. Special Studies in Film and Television (2 to 8 units).** Prerequisites: senior standing, 3.0 GPA in major, consent of instructor. May be taken for a maximum of eight units.

## Graduate Courses

Certain graduate courses concerned with individual student projects may be repeated for credit on recommendation of the departmental graduate adviser. Graduate courses are not open to undergraduate students.

**200. Bibliography and Methods of Research in Film and Television (6 units).** Discussion, three hours; laboratory, four to six hours (additional screenings and/or video laboratory work as required). Prerequisites: graduate standing, consent of instructor. Examination and study of research methods, techniques, and resources related to film and television research, including development of computer skills for preparation of bibliographies, on-line data base searching and retrieval and, when appropriate, use of computer/video disc technology for research.

**203. Seminar: Film and Other Arts (6 units).** Discussion, three hours; film screenings, four to six hours. Prerequisites: graduate standing, consent of instructor. Studies in interrelationships between film and fine arts, or performing arts, or literature, with emphasis on ways these other arts have influenced film. May be repeated twice for credit.

**206A. Seminar: European Film History (6 units).** Discussion, three hours; film screenings, four to six hours. Prerequisites: course 106B, graduate standing, consent of instructor. Studies in selected historical movements such as expressionism, socialist realism, surrealism, neorealism, New Wave, etc. May be repeated twice for credit.

**206C. Seminar: American Film History (6 units).** Discussion, three hours; film screenings, four to six hours. Prerequisites: course 106A, graduate standing, consent of instructor. Study of central topics in American film history. May be repeated twice for credit.

**207. Seminar: Experimental Film (6 units).** Discussion, three hours; film screenings, four to six hours. Prerequisites: graduate standing, consent of instructor. Studies of form, style, politics, and history of experimental, innovative, avant-garde, and minority film and video.

**208A. Seminar: Film Structure (6 units).** Discussion, three hours; film screenings, four to six hours. Prerequisites: graduate standing, consent of instructor. Examination of various film conventions, both fictional and nonfictional, and of role of structure in motion picture.

**208B. Seminar: Classical Film Theory (6 units).** Discussion, three hours; film screenings, four to six hours. Prerequisites: graduate standing, consent of instructor. Study of principal topics and lines of inquiry that characterize theoretical writings of Arnheim, Eisenstein, Bazin, Mitry, etc.

**208C. Seminar: Contemporary Film Theory (6 units).** Discussion, three hours; film screenings, four to six hours. Prerequisites: course 208B, graduate standing, consent of instructor. Study of redefinition of aims and methods of film theory through contemporary writings.

**209A. Seminar: Documentary Film (6 units).** Discussion, three hours; film screenings, four to six hours. Prerequisites: graduate standing, consent of instructor. Nonfictional film and its relation to contemporary culture.

**209B. Seminar: Fictional Film (6 units).** Discussion, three hours; film screenings, four to six hours. Prerequisites: graduate standing, consent of instructor. Film as fiction and its relation to contemporary culture. May be repeated once for credit.

**M209C. Ethnographic Film.** (Same as Anthropology M288.) Prerequisites: graduate standing, consent of instructor. Seminar on uses of film in ethnography and production course in which anthropologists, other social scientists, and humanists learn how to make films that are useful for their disciplines. Cameras and editing facilities provided. (F)

**209D. Seminar: Animated Film.** Discussion, three hours; laboratory, three hours. Prerequisites: graduate standing, consent of instructor. Critical study of animated film: its historical development, structure, style, use, and relation to contemporary culture.

**210. Seminar: Contemporary Broadcast Media.** Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. Consideration of issues raised by recent developments in television and radio, commercial and public, associated with innovations in satellite, cable, and cartridge systems.

**211A. Seminar: Historiography.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Limited to film and television M.A. candidates. Beginning examination of function and methods of writing film and television history as seen in works of key historians in the U.S. and Europe.

**211B. Seminar: Historiography.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Limited to film and television Ph.D. candidates. Examination of function and methods of writing film and television history as exemplified by key works in this tradition, with attention to central issues of historical thought on the media.

**215. Seminar: Theory and Method.** Discussion, three hours. Limited to film and television Ph.D. candidates. Examination of major modes of theoretical reflection that bear on film and television through study of central texts of such traditions as phenomenology, auterism, semiology, psychoanalysis, sociology, etc.

**217. Seminar: Television History.** Discussion, four hours; viewing, to be arranged. Prerequisite: course 110A or equivalent. Examination of origins and development of American television. Topics include industry structure, economics, policy and regulation, and programming.

**218. Culture, Media, and Society.** Lecture, four hours; screenings, to be arranged. Prerequisite: consent of instructor. Emphasis on "discourse of the other(s)." Thematization of the other is concerned with theories of "difference" rather than similarity or identity — with how other cultures enter into politics of representation and representation of politics through metaphors of (1) difference without opposition, (2) heterogeneity without hierarchy, and/or (3) otherness without ethnocentrism. Examination of how women, national minorities, and Third World peoples have been rendered others; place of the cinematic apparatus in this process and how academization of others is positioned vis-à-vis mainstream critical discourse.

**219. Seminar: Film and Society (6 units).** Discussion, three hours; film screenings, four to six hours. Prerequisites: graduate standing, consent of instructor. Study of ways film affects and is affected by social behavior, belief, and value systems; considered in relation to role of media in society. May be repeated once for credit.

**220. Seminar: Television and Society.** Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. Study of ways television forms affect and are affected by social behavior, belief, and value systems; study of technological and economic aspects of the medium. May be repeated once for credit.

**221. Seminar: Film Authors (6 units).** Discussion, three hours; film screenings, four to six hours. Prerequisites: graduate standing, consent of instructor. Intensive examination of works of outstanding creators of films. May be repeated twice for credit.

**222. Seminar: Film Genres (6 units).** Discussion, three hours; film screenings, four to six hours. Prerequisites: graduate standing, consent of instructor. Studies of patterns, styles, and themes of such genres as the Western, gangster, war, science fiction, comedy, etc. May be repeated twice for credit.

**223. Seminar: Visual Perception.** Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. Aesthetic, psychological, and physiological principles of vision as they relate to ways in which man "sees" film and television, with emphasis on ways in which these are different from other visual experiences.

**224. Computer Applications for Film Study.** Survey of computer applications relevant to film study, principally computer-video disc systems and image capture technology.

**CM229. Contemporary Topics in Theater, Film, and Television (2 units).** (Same as Theater CM229.) Lecture, two hours; screenings, two hours. Prerequisite: upper division or graduate standing in theater/film and television. Examination of creative process in theater, film, and television, with consideration of writing, direction, production, and performance. Overview of individual contributions in the collaborative effort; examination of distinctiveness and interrelations among these arts. Individual units include participation of leading members of theater, film, and television professions. May be repeated for a maximum of six units. Concurrently scheduled with course CM129.

**247. Production Planning in Film and Television.** Discussion, three hours. Prerequisite: consent of instructor. Analysis of procedures and problems in preparing a script for film or television production, with emphasis on role of production manager in breaking down scripts, setting up shooting schedule, planning postproduction, and preparing budgets.

**M265A-M265B. Ethnographic Film Direction (4 or 8 units each).** (Same as Anthropology M267B-M267C.) Lecture, four hours; laboratory, to be arranged. Prerequisites: course M209C, graduate standing, consent of instructor. Further consideration of methods and criteria for use of film as a medium for preservation and communication of human cultures. Production of films and videotapes on topics selected by students. (W, M265A; Sp, M265B)

**268. Seminar: Short Film.** Lecture, two hours; discussion, two hours. Prerequisites: graduate standing, consent of instructor. Study of problems presented by conceptualization of form and structure of the short film, with classical and student examples.

**270. Seminar: Film Criticism (6 units).** Discussion, three hours; film screenings, four to six hours. Prerequisites: graduate standing, consent of instructor. Study of key aesthetic questions of analysis and evaluation in relation to central works of motion picture criticism. May be repeated once for credit.

**271. Seminar: Television Criticism.** Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. Analysis of major forms of television production and criticism it has elicited. May be repeated once for credit.

**273. Seminar: Contemporary Film and Television Criticism (6 units).** Discussion, three hours; film and television screenings, four to six hours. Limited to film and television Ph.D. candidates. Study and practice of analytic and critical response, with emphasis on contemporary film and television.

**274. Seminar: Research Design.** Discussion, three hours. Prerequisite: second-year standing in film and television Ph.D. program. Examination of general principles that govern formulation of major research projects and preparation of a prospectus for Ph.D. dissertation.

**276. Seminar: Non-Western Films.** Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. Study of aesthetic and ideological impulses of selected films from Asia, Africa, and Latin America.

**277. Seminar: Narrative Studies.** Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. Study of writings on theory of narrative structure and their significance for analysis of film forms.

**289A-289B-289C. Current Business Practices in Film and Television.** Prerequisites: course 247, graduate standing, consent of instructor. Examination of current status of financing/production/distribution agreements, union agreements, music, copyright, etc., necessary to understand the film and television industry. May be taken in any sequence.

**291A-291B-291C. Role of Management in Entertainment Industry.** Prerequisites: course 247, graduate standing, consent of instructor. Study of artistic, social, and economic criteria for decision making in production and distribution of motion pictures and entertainment programs. May be taken in any sequence.

**292A-292B-292C. Network Television Management and Decision Making.** Lecture, two hours; discussion, two hours. Prerequisites: course 247, graduate standing, consent of instructor. Study of business structure and economic, social, and artistic criteria currently utilized by network television management. Only eight units may be taken for credit.

**293. Seminar: Film and Television Curatorship.** Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. Study and practice of issues in archival research and administration.

**298A-298B. Special Studies in Film and Television (2 to 4 units each).** Lecture/discussion. Prerequisites: graduate standing, consent of instructor. Seminar study of problems in film and television, organized on topic basis. May be repeated once for credit.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**400. Film Image Design Laboratory.** Lecture, two hours; laboratory, six hours. Prerequisite: consent of instructor. Limited to film and television graduate students. Conception and design of nonnarrative film imagery. One-minute experiments in the relation of meaning to technique, including manipulation of optics, photochemistry, elements of electronic processes, and display of time and motion. May be repeated once for credit.

**402A-402B. Advanced Fiction Workshops (8 units each).** Laboratory, 12 hours; fieldwork, to be arranged. Prerequisites: courses 405, 409, 410A-410B-410C, 433, consent of instructor. Limited to 10 film and television graduate students per section. Production of a 10-minute fictional film or video project. Students budget, preplan, and complete photography on location and/or in studio by end of first term. In second term students must complete postproduction of their projects.

**403A-403B-403C. Advanced Documentary Workshops (4 to 8 units each).** (Formerly numbered 403A-403B.) Lecture/discussion/laboratory, 16 to 24 hours; fieldwork, to be arranged. Prerequisites: courses 405, 409, 410A-410B-410C, 433, consent of instructor. Limited to film and television graduate students. Production of advanced individual documentary film or video projects. Students conceptualize, research, write, shoot (on location), and edit projects to completion. May be repeated once for credit.

**404A-404B. Advanced Abstract/Experimental Media Workshops (8 units each).** Lecture/discussion/laboratory, 12 hours; fieldwork, to be arranged. Prerequisites: courses 405, 409, 410A-410B-410C, 433, consent of instructor. Limited to 10 students per section. Production of a 20-minute abstract or experimental film, video, or multimedia project. Students plan, design, and shoot their projects in first term and work as crew for each other in rotating assignments. In second term students must complete postproduction of their projects.

**405. Television Production Workshop (8 units).** (Formerly numbered 401C.) Laboratory, eight hours; other, to be arranged. Prerequisite: consent of instructor. Limited to film and television graduate students. Not open to students with credit for former course 401C. Basics of television production and direction, focusing on studio multiple camera with minimal use of remote camera. Use of various formats of video production, including scripted and nonscripted projects, culminating in a narrative three-camera project.

**406. Experimental Video Workshop.** (Formerly numbered 401D.) Laboratory, six hours; other, to be arranged. Prerequisite: consent of instructor. Limited to film and television graduate students. Not open to students with credit for former course 401D. Introduction to independent and experimental video with examination of impact of new video technologies in television, covering concepts of video art, new television, digital video, high-definition TV, and film and tape postproduction.

**407. Video Documentary Workshop (8 units).** Laboratory, 12 hours. Prerequisite: consent of instructor. Limited to film and television graduate students. Exploration of documentary video, including screening a variety of international works and producing a short documentary project using single-camera field production techniques.

**408A-408B. Video Editing.** (Formerly numbered 483.) Discussion, four hours; laboratory, to be arranged. Prerequisite: consent of instructor. Limited to film and television graduate students. Individual instruction in electronic editing. **408A.** On-Line Editing; **408B.** Off-Line Editing.

**409. Directing the Actor for the Camera Workshop.** Workshop, six hours; laboratory, to be arranged; laboratory preparation, two to four hours. Prerequisite: consent of instructor. Limited to film and television M.F.A. production program graduate students. Team-taught with five weeks designed to give the director actor/camera techniques, and five weeks to offer basic strategies to elicit good performances from actors. Emphasis on problems faced when directing actors for film.

**410A-410B-410C. Film Production Workshops (8 units, 12 units, 8 units).** (Formerly numbered 401A-401D.) Lecture/discussion/laboratory, 24 hours; fieldwork, to be arranged. Prerequisites: courses 405, 409, consent of instructor. Limited to film and television graduate students. Production workshop spanning three terms, designed to give hands-on experience in all aspects of film production (the tools and a practicum of the medium) as each student writes/directs/edits a 10-minute film.

**417. Lighting for Film and Television (6 units).** (Formerly numbered 450B.) Lecture, three hours; discussion, one hour; laboratory, six hours. Prerequisite: consent of instructor. Limited to film and television graduate students. Lectures, supervised exercises on a stage or in an exterior, screenings of scenes, and discussions aimed at learning to master the lighting to create an appropriate mood or atmosphere of a premeditated scene recorded on a film or through an electronic system. May be repeated twice for credit.

**418. Cinematography and Directing (12 units).** (Formerly numbered 450C.) Lecture, six hours; discussion, two hours; laboratory, 16 hours. Prerequisites: course 417, consent of instructor. Limited to film and television graduate students. Not open to students with credit for former course 450C. Supervised filming of short dramatic projects on the sound stage and at exterior locations that explore the complexity of the process, emphasizing balance and collaboration essential to both directing and photography in its varied technical, production, and creative aspects.

**419. Advanced Cinematography.** (Formerly numbered 450A.) Lecture, two hours; discussion, one hour; laboratory, one hour. Prerequisites: courses 417, 418, consent of instructor. Limited to film and television graduate students. Not open to students with credit for former course 450A. Advanced study of principles of cinematography, with emphasis on exposure, lighting, and selection of film, camera, and lenses.

**423A. Direction of Actors for Film and Television.** (Formerly numbered 423.) Lecture, four hours; workshop. Prerequisites: first film project, consent of instructor. Limited to film and television graduate students. Required of all production majors shooting a fiction thesis. Exercises in analysis of script and character for purpose of directing actors in film and television productions. Emphasis on eliciting best possible performance from the actor. May be repeated twice for credit.

**423B. Advanced Direction of Actors for Film and Television.** Studio workshop, six hours. Prerequisites: course 423A, consent of instructor. Limited to film and television graduate students. Advanced study and practice of directing actors before a camera. Emphasis on developing techniques to immediately enhance communication between director and actor on the set in order to maintain continuity from shot to shot.

**431. Introduction to Film and Television Screenwriting.** Lecture, three hours. Prerequisite: consent of instructor. Limited to film and television graduate students. Introductory course in problems of film and television screenwriting.

**433. Writing the Short Screenplay.** Lecture, three hours. Prerequisite: consent of instructor. Limited to film and television graduate students. Conception, development, and writing of a 20-minute film or video script in either fiction, documentary, or experimental medium, to be produced in one of the advanced workshops.

**434. Advanced Screenwriting (8 units).** Discussion, three hours. Prerequisites: course 135, consent of instructor. Advanced problems in writing of original film and television screenplays. May be repeated twice for credit.

**435. Advanced Writing for Short Film and Television Screenplays.** Discussion, three hours. Prerequisites: courses 402A-402B or 403A-403B or 404A-404B, consent of instructor. Limited to film and television graduate students. Required of students planning fiction projects. Final screenwriting course in which students write their thesis project (no longer than 30 minutes in length).

**437. Nontheatrical Writing for Film and Television.** Discussion, three hours. Prerequisite: consent of instructor. Limited to film and television graduate students. Advanced problems in the field of documentary and special feature programs, with emphasis on research and preproduction. May be repeated for a maximum of 16 units.

**451. Advanced Design for Film and Television.** Laboratory, to be arranged. Prerequisite: consent of instructor. Limited to film and television graduate students. Advanced study and practice of techniques and methods of design for motion pictures. Art direction for advanced workshop productions. May be repeated for a maximum of 12 units.

**452A. Film and Television Sound Recording.** Lecture, three hours; laboratory, four hours. Prerequisite: consent of instructor. Limited to film and television graduate students. Principles and practices of film and television sound recording, including supervised exercises.

**452B. Music Recording Workshop.** Lecture, four hours; laboratory, eight hours. Prerequisite: consent of instructor. Supervised exercises in studio music recording techniques, with emphasis on special requirements for motion pictures and television.

**452C. Film and Television Sound Rerecording.** Lecture, three hours; laboratory, three hours. Prerequisite: consent of instructor. Limited to film and television graduate students. Recording of sprocketed media: basics of mixing 16mm and 35mm film soundtracks to single stripe or three stripe magnetic film. Overview of prepping tracks for final mix. Fundamentals of Automatic Dialogue Replacement and Foley. Rerecording and video/audio postproduction of unsprocketed media: emphasis on multitrack tape and nonlinear disk-based recording and editing systems. Includes all track building approaches, from production sound electronic editing, Automatic Dialogue Replacement, Foley, backgrounds, hard FX and MX through final mix. Techniques of combining sprocketed and unsprocketed media in postproduction.

**454A-454B. Advanced Film Editing.** Lecture, three hours; laboratory, to be arranged. Prerequisite: consent of instructor based on submission of a rough cut and/or copy of screenplay. Limited to film and television thesis and advanced project students in postproduction phase of thesis or advanced project. Organization and operation of postproduction process.

**459A-459B. Directing for Film and Television.** Lecture, three hours. Prerequisite: consent of instructor. Limited to film and television graduate students. Analysis and exploration, with specific scenes, of differences and many similarities in directorial approach to same literary material in theater, film, and television.

**464A-464B. Advanced Film Directing (8 units each).** Hours to be arranged. Prerequisite: consent of instructor. Limited to film and television graduate students. Special problems in direction of fictional and documentary films.

**466A-466B. Advanced Professional Video Workshops (8 units each).** Lecture, three hours; laboratory, to be arranged. Prerequisites: courses 405, 410A-410B-410C, 423A, consent of instructor. Limited to film and television graduate students. Hands-on problems in working with various interrelated disciplines in a professional production experience, including interaction with students of design and acting from Department of Theater.

**475. Film I (8 units).** Discussion, three hours; laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Study of basic techniques of film production, including preproduction planning and production of a group short film.

**476. Video I (8 units).** Discussion, three hours; laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Study of basic techniques of television and video production, including completion of one or more projects.

**478. Video II (8 units).** Discussion, three hours; laboratory, to be arranged. Prerequisites: courses 185, 405 or 476, graduate standing, consent of instructor. Group experience in video production with each member rotating on crew work in production of individual or collective projects.

**482A-482B. Advanced Animation Workshops (4 or 8 units each).** Lecture, three hours; laboratory, to be arranged. Prerequisites: courses 181A, 181B, 181C, consent of instructor. Organization and integration of various creative arts used in animation, resulting in production of a complete animated film. May be repeated for a maximum of 16 units.

**486. Directed Individual Study: Preparation to Advancement to Candidacy for M.F.A. in Production (2 to 4 units).** Preparation for thesis production, four to eight hours. Prerequisites: graduate standing in M.F.A. production program, consent of instructor. Specialized development and organization of proposed thesis project prior to advancement to candidacy. Should be taken term before student plans to advance to candidacy.

**487. Directed Individual Study: Postproduction Laboratory.** Laboratory, eight hours. Prerequisites: graduate standing in M.F.A. production program, consent of instructor. Completion of projects in final stages of postproduction. May not be repeated.

**489A. Computer Animation in Film and Video (4 to 8 units).** Lecture, three hours; laboratory, four to eight hours; other, to be arranged. Prerequisites: courses 181A, 181C, a completed animated film, consent of instructor. Instruction in and supervised production of computer animation. May be repeated for a maximum of 16 units.

**489B. Production in Computer Animation (4 or 8 units).** Lecture, three hours. Prerequisite: course 489A. Instruction in creation, preparation, and production of a complete and original computer animation film or tape. May be repeated for a maximum of 16 units.

**496. Practice of Teaching Film and Television (2 units.)** Discussion. Required once of all teaching assistants or associates in department. Orientation and preparation of graduate students who have responsibility to assist in teaching undergraduate courses in department; discussion of problems common to the teaching experience. May not be applied toward M.A., M.F.A., or Ph.D. May be repeated. S/U grading.

**498. Professional Internship in Film and Television (4, 8, or 12 units).** Full- or part-time at a studio or on a professional project. Prerequisites: graduate standing, advanced standing in M.F.A. program, consent of instructor. Internship at various film, television, or theater facilities accentuating creative contribution, organization, and work of professionals in their various specialties. Given only when projects can be scheduled.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596A. Directed Individual Studies: Research (2 to 12 units).** Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

**596B. Directed Individual Studies: Writing (2 to 12 units).** Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

**596C. Directed Individual Studies: Directing (2 to 12 units).** Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

**596D. Directed Individual Studies: Design (2 to 12 units).** Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

**596E. Directed Individual Studies: Acting (2 to 12 units).** Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

**596F. Directed Individual Studies: Production (2 to 12 units).** Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

**597. Preparation for Ph.D. Qualifying Examinations in Film and Television (2 to 12 units.)** Hours to be arranged. May be taken for a maximum of 12 units. S/U grading.

**598. M.A. Thesis in Film and Television (2 to 12 units).** Hours to be arranged. Prerequisite: advancement to M.A. candidacy. Research and writing for M.A. thesis. May be taken for a maximum of 12 units. S/U grading.

**599. Ph.D. Dissertation in Film and Television (2 to 8 units).** Hours to be arranged. Prerequisite: advancement to Ph.D. candidacy. Research and writing for Ph.D. dissertation. May be repeated for a maximum of 12 units. S/U grading.

## Related Courses in Other Departments

**Communication Studies 187.** Ethical and Policy Issues in Institutions of Mass Communication

**Design 165C.** Communication Design: Video Image

**English 118.** Film and Literature

**Italian 46.** Italian Cinema and Culture

121. Italian Cinema

## Theater

103 East Melnitz Building, (310) 825-5761

### Professors

Gilbert Cates, M.A., *Dean*  
Robert Israel, M.F.A., *Cochair*  
Carl R. Mueller, Ph.D.  
Mel Shapiro, M.F.A.  
William D. Ward, M.F.A.

### Professors Emeriti

Walden P. Boyle, Ph.D.  
John R. Cauble, M.A.  
Donald B. Crabs, M.A.  
Burdette Fitzgerald  
Henry Goodman, Ph.D.  
Michael Gordon, M.F.A.  
Robert H. Hethmon, Ph.D.  
John H. Jones, M.A.  
Joanne T. McMaster, M.F.A.  
George L. Schaefer, B.A.  
Norman F. Welsh, B.A.  
William T. Wheatley, Ph.D.

### Associate Professors

Alan M. Armstrong, M.F.A.  
Gary A. Gardner, Ph.D.  
Michael J. Hackett, Ph.D.  
Patricia M. Harter, Ph.D., *Vice Chair, Academic Programs*  
Michael S. McLain, Ph.D., *Associate Dean*  
Sylvia E. Moss, B.A.  
Thomas J. Orth, M.F.A.  
Beverly J. Robinson, Ph.D.  
Rich Rose, M.F.A., *Cochair*  
Carol J. Sorgenfrei, Ph.D.  
Margaret L. Wilbur, M.F.A.

### Assistant Professor

Edit Villarreal, M.F.A.

### Lecturers

John Brandt, A.A.  
Anthony Delongis, B.A.  
Ed DeShae  
Jacques Heim  
Gordon Hunt, B.A.  
Daniel A. Ionazzi, M.B.A.

### Visiting Professors

Debbie Allen  
Michael Bloom, Ph.D.  
David Craig  
Gordon Davidson, M.A.  
Neil Jampolis, B.F.A.  
Leon Katz, Ph.D.  
Dunya Ramicova, M.F.A.  
David Schweitzer, B.A.  
Peter Sellars, B.A.

### Visiting Associate Professors

Hanay Geiogamah, B.F.A.  
Salome Jens  
Jose Luis Valensuela

### Adjunct Assistant Professors

Jonathan Harris-Deans  
Oskar Eustis  
Ellen Geer  
Madeline Kozlowski, M.F.A.  
Anna Krajewska-Wieczorek, Ph.D.  
Roberta Levitow, B.A.  
Corey Beth Madden, B.A.  
Tim Miller  
Bill Reichblum, M.F.A.

## Scope and Objectives

UCLA's theater program offers comprehensive training for the profession, as well as serious study of theater's 2,000-year history and rich literature. Drawing on this vibrant heritage, the curriculum promotes an awareness of theater as a global phenomenon embodying the contributions of diverse cultures and explores theater as a forum for reflecting the human experience as revealed through the dynamics of theater production. With this in mind, students engage in the presentation of dramatic work in a community where creativity and critical thought combine in the exploration of the artistic and intellectual challenges inherent in the making of theater.

Manifesting talent and promise as well as representing a wide range of backgrounds and interests, prospective students are selected by the faculty through auditions and interviews in cities throughout the U.S.

At the undergraduate level, students receive education in acting, design, or the comprehensive study of theater, all within the rigorous liberal arts framework of the B.A. degree. At the graduate level, students in the M.F.A. program develop as artists and are given preprofessional training in the skills of theater, while Ph.D. students engage in critical investigations of the art form. In conjunction with their theater studies, students also have the opportunity to pursue elective courses in the area of film and television.

## Bachelor of Arts Degree

The Bachelor of Arts degree provides a liberal education and preprofessional training in a program that combines the study of the arts, humanities, and sciences with exploration of the principal areas of theater practice — performance, playwriting, directing, design, technical theater, and the history and criticism of theater and drama. The program is designed to ensure that students will graduate with a sound humanistic and experiential base for further pursuits in education and in life beyond the University.

The *comprehensive program* provides a liberal education by combining critical study of theater with experiential practice in one or more of its component parts. Students explore each of the principal areas of theater practice — acting, directing, design, playwriting, and production — to build a foundation for future creative work. Specialized and advanced training is available to prepare students for a variety of

careers, further training, or graduate study. At the upper division level, students choose from an array of advanced courses in playwriting, directing, and theater history and drama, leading to a culminating research or creative experience in the senior project.

The *acting program* includes specialized and advanced courses that prepare students for careers in performance. Lower division courses introduce improvisation, sense memory, actions, objectives, and character work. There is some performance in projects, but emphasis is on class and studio work. Upper division advanced courses explore verse, scene study, comedy, cabaret, and performance for film and video. Performance is accentuated in the senior year which culminates in a senior production project combining research of character and play with performance.

The *design and production program* introduces design principles and investigates the design of scenery, lighting, costumes, and sound for theater, film, and television in lower division courses. Three design concentrations are available at the upper division level — scenic and lighting design, scenic and costume design, and lighting and sound design. Students select from an array of design skills courses to develop proficiency in essential areas of rendering, drafting, painting, and technology. Courses in art, history, and philosophy build an understanding of the social history of visual ideas. A sequence of courses in each concentration examines design principles and practice specific to each field, leading to assignment as a member of a production design team and the preparation and realization of designs for a production. The senior project includes a design portfolio project which culminates in the preparation of complete designs and drawings for a production and the assembly of a design portfolio and résumé.

### Admission

All applicants must meet the admission standards of UCLA and the departmental screening process. Applications are accepted only in November for admission to the following Fall Quarter. There are no mid-year admissions. On receipt of your application the department notifies you of the screening process, which includes submission of a written personal essay, letters of recommendation, and an interview and/or audition. Information on the scheduling of the audition/interview is sent to each applicant with the departmental request for supplemental materials. Every applicant must complete the interview portion of the application process. The audition is optional for all students except those wishing to qualify for admission on the basis of their ability in performance. Applicants may submit materials for consideration in one or more of the following areas: acting, directing, design and technical theater, playwriting, and history and criticism.

Students admitted to the theater major for Fall Quarter 1993 and thereafter are expected to

fulfill the requirements listed below. Continuing students admitted prior to Fall Quarter 1993 should consult the 1992-93 *UCLA General Catalog*.

### Preparation for the Major

*Required:* Theater 11, 13, 14A-14B-14C, 15, 50. Students in the comprehensive and design programs must also take course 12; those in the acting program must also take 21A-21B.

### The Major

*Required:* A total of 58 upper division units, including Theater 101A-101B-101C and 150, and a specialization (42 units) from one of the following: (1) *acting program* — courses 115, 116A-116B-116C, 124A, 124B, 125A, 125B, 126A-126B-126C, 127A-127B-127C, 180; (2) *comprehensive program* — courses 106, 180, and 34 elective units; (3) *design and production program* — course 159, six units of design skills courses, and one of the following emphasis sequences: (a) 151A-151B, C151C, 152A-152B, C152C, (b) 151A-151B, C151C, 153A-153B, C153C, (c) 152A-152B, C152C, 154A-154B, C154C.

Through certain of these required courses, you are responsible for completing specific production assignments related to production activity of the theater curriculum.

## Graduate Study

The department offers three-year professional training programs leading to the Master of Fine Arts (M.F.A.) in Theater, with specializations in acting, directing, and design and production (scenic design, costume design, lighting design, sound design, or production management/technology). The producers program and playwriting are two-year specializations that also lead to the M.F.A. in Theater.

The department also offers the Doctor of Philosophy (Ph.D.) in Theater, with a history/criticism emphasis, and the Master of Arts (M.A.) degree which may be obtained only en route to the Ph.D.

### Admission

Students are admitted for Fall Quarter only. Admission is competitive, and only a limited number of students are accepted in each program. The department does not have an application in addition to the one used by UCLA Graduate Application Processing. No screening examination prior to admission is required; however, the screening process may involve letters of recommendation, an audition, portfolio review, or interview. For further information, contact the Student Services Office, School of Theater, Film, and Television, 103 East Melnitz Building, UCLA, Los Angeles, CA 90024-1622. Applicants are advised that all records submitted in support of an application, including creative work, are not returnable, and the department is not responsible for such material.

In addition to satisfying minimum University requirements for graduate admission, you must (1) have completed an undergraduate major in any area comparable to that offered at UCLA and (2) provide the department with at least three letters of reference and a statement of purpose.

Additional admission requirements are noted under each specific program.

## Master of Arts Degree

### Admission

*Note: Effective Fall Quarter 1993 the department has announced it will not accept applications to the M.A. program for Fall Quarter 1994. Interested students should contact the Student Services Office for further information.*

The M.A. degree is awarded only in conjunction with study in the Ph.D. degree program to students who have successfully completed one year of graduate work and all requirements for the M.A. degree, and who either do not wish to continue or are not passed by the Ph.D. committee to continue in the doctoral program. Requirements include the results of the Graduate Record Examination (GRE), a sample of scholarly or critical writing, a statement of purpose, and other information (résumé, portfolio, script, production book, interview, etc.) that may be required to establish the quality of your work in the program. Consult the Student Services Office, School of Theater, Film, and Television, 103 East Melnitz Building, UCLA, Los Angeles, CA 90024-1622, for further information.

### Major Fields

The program leads to a general graduate degree, though there are opportunities, through your electives and thesis or research paper topics, to stress a particular interest such as acting, design, directing, dramatic writing, and theater history and criticism.

### Foreign Language Requirement

The program does not require a foreign language, but you are urged to develop proficiency in either French, German, Spanish, or Italian.

### Course Requirements

You are required to complete a minimum of 10½ courses (42 units), five of which must be at the graduate level, in at least one year of intensive study, laboratory exercises, and research leading to the successful completion of either the thesis or comprehensive examination plan. You are required to take an active part in the production program of the department as partial fulfillment of the degree requirements.

The required courses are Theater 245B and C272 (a two-unit course to be taken three times). After consultation with your adviser, you select eight other courses, including one graduate course in theater history (205A, 205B, or 205C), one graduate course in the-

ater production theory (241, 290A, or 290B), and six other courses which emphasize production practice or historical study. Students accepted for joint M.A. and Ph.D. programs are required to take courses 205A-205B-205C.

Only eight units from the 596 series may be applied toward the total course requirement, and only four of these units may be applied toward the minimum graduate course requirement. No 598 courses may be applied toward the total course requirement.

### Thesis Plan

Before beginning work on the thesis, you must obtain approval of a subject dealing with the history, aesthetics, criticism, or techniques of the theater and a general plan of investigation from the Ph.D. critical studies committee. A thesis committee is formed when you are within one term of completing the coursework, at which time you are eligible to advance to candidacy. You must present the adviser and the committee with a prospectus of the thesis and a petition to advance to candidacy. Both are used as the basis for approval.

If your thesis fails to pass the committee, you may present a rewritten version for approval. The number of times a thesis may be presented depends on assessments made by the committee.

### Comprehensive Examination Plan

If you elect this plan, you must complete an examination consisting of a research paper which may be associated with four units of Theater 596A, a one-hour oral defense of the paper, and a two-part, six-hour written examination covering theater history and production practice. The examination normally occurs during your final term in residence, at which time you should have advanced to candidacy.

## Master of Fine Arts Degree

### Admission

Students are selected on the basis of ability to work on an advanced level and professional promise. At the time of application to the Graduate Division, you must indicate the M.F.A. degree objective and satisfy the specific admission requirements of one of the following areas of specialization within the M.F.A. program.

*Acting* — Submit a complete résumé and audition for the M.F.A. committee or its representative.

*Design and Production (scenic, costume, lighting, production management/technology, or sound)* — Submit a résumé and related coursework; provide evidence of ability appropriate to each emphasis as demonstrated by sketches, renderings, photographs, production books, plots, technical papers, reviews, or other appropriate exhibits. In addition to presentation of the portfolio, an interview may be required by the department.

*Directing* — Submit a résumé and evidence of production work, including prompt books, photographs, reviews, critical commentaries; provide an essay outlining a directorial approach to a selected play. An interview may be required by the department.

*Playwriting* — Submit a résumé and examples of creative writing which may include dramatic writing or narrative fiction such as full-length plays, one-act plays, and screenplays. At least one stage play must be included. An interview may be required by the department.

*Producers Program* — Submit a résumé, examples of related coursework, and a statement outlining your areas of specific interest and intent. An interview may be required by the department following initial application review by the faculty committee. *Note: Effective Fall Quarter 1993 the department has announced it will not accept applications to the M.F.A. producers program for Fall Quarter 1994. Interested students should contact the Student Services Office for further information.*

In addition, all applicants must submit three letters of recommendation. Graduate Record Examination (GRE) General Test scores are optional. Consult the Student Services Office, School of Theater, Film, and Television, 103 East Melnitz Building, UCLA, Los Angeles, CA 90024-1622, for further information.

### Major Fields or Subdisciplines

The areas of specialization for the M.F.A. program are as specified above.

### Foreign Language Requirement

There is no foreign language requirement for the M.F.A. degree.

### Course Requirements

In acting, a total of 23½ courses (94 units) is required; in directing, a total of 26½ courses (106 units); and in design and production (scenic design, lighting design, costume design, sound design, and production management/technology), a total of 24 courses (104 units). Only 12 units of course 596 may be applied toward the total course requirement. You must take 20½ graduate-level courses for the acting specialization and 23½ for the directing and design and production specializations.

Specific course requirements for each specialization are available in the Student Services Office.

*Fieldwork and Internships* — Students in several of the specializations may fulfill some course requirements in the field through internships with professional theaters and other organizations.

### Comprehensive Examination Plan

The comprehensive plan is satisfied by fulfilling a series of creative projects appropriate to your specialization. On completion of the final creative project or in the last term in residence,

whichever is last, you must file for advancement to candidacy. The committee then reviews and evaluates your record. Your participation in the final review is at the discretion of the committee.

## Ph.D. Degree

### Admission

*Note: Effective Fall Quarter 1993 the department has announced it will not accept applications to the Ph.D. program for Fall Quarter 1994. Interested students should contact the Student Services Office for further information.*

You must submit evidence of potential as a practicing scholar as indicated by (1) breadth and depth of advanced coursework in history, theory, and criticism, (2) imagination and quality of scholarly writing, and (3) academic achievements and potential as indicated by grade-point average, Graduate Record Examination (GRE) scores, awards, scholarships, fellowships, etc. Additionally, you should demonstrate awareness and experience in one of the major fields of the theater, such as directing, dramaturgy, or design.

Students may be admitted with an M.F.A., M.A., or B.A. degree. The dossier submitted for admission must contain a statement of purpose indicating areas of interest appropriate to the doctoral degree, as well as a thesis or other writing samples.

Further information is available from the Student Services Office, School of Theater, Film, and Television, 103 East Melnitz Building, UCLA, Los Angeles, CA 90024-1622.

### Major Fields or Subdisciplines

The Ph.D. student in theater is expected to be knowledgeable regarding theater history and theory, critical methods, theatrical production, and dramatic literature.

### Foreign Language Requirement

Mastery of one foreign language approved by the Ph.D. committee is required and must be demonstrated by one of the following methods: (1) passing the Graduate School Foreign Language Test (GSFLT) in French, Spanish, German, or Russian with a score of 500 or better, (2) completing a level five foreign language course or equivalent with a grade of C or better, or (3) passing a UCLA language examination given in any foreign language department. The foreign language requirement may be completed after admission to the Ph.D. program; however, you are encouraged to complete five quarters or three semesters of a foreign language appropriate to Ph.D. research objectives prior to admission. Language courses taken toward fulfillment of the language requirement cannot be applied toward the degree.

### Course Requirements

During the first six terms (two academic years), you must complete a minimum of 12 graduate courses (200 or 500 level) and two professional courses (Theater 495A and 495B). Courses 216A, 216B, 216C are required. The remaining nine courses are elective graduate courses, seminars, or tutorials. Of these electives, no more than four may be taken outside the department and no more than two may be tutorials. In addition, the distribution of electives must include at least one each in the areas of Western or non-Western theater study. These electives must augment the required courses so as to constitute a definable area of study associated with the dissertation topic. The dissertation is a historical, critical, analytical, or experimental study of a theater topic.

### Teaching Experience

Every student must complete Theater 495A and 495B.

### Qualifying Examinations

At the end of your second term in residence, you must take a preliminary oral examination administered by a representative committee of the faculty. The committee specifies the area of review, tests your background preparation and progress to date, and determines your general fitness to continue in the doctoral program.

After completion of all language and course requirements, approval of a dissertation prospectus, and appointment of a dissertation committee, you are required to pass a written qualifying examination administered during four successive days. Information regarding the examination is available from the Ph.D. committee. With approval of the department chair, you may be reexamined on any failed portions of the examination when it is next regularly scheduled, or within the year following the term in which it was first taken.

After you pass the written examination, a doctoral committee is formed to administer the University Oral Qualifying Examination. You are advanced to candidacy only on successful completion of this examination.

### Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

### Dissertation/Final Oral Examination

A dissertation demonstrating your ability to carry out independent and significant inquiry in a historical, theoretical, or critical field of theater is required. Final award of the Ph.D. depends on successful completion of the dissertation.

A final oral examination, held after completion of the dissertation, may be required at the option of the dissertation committee.

## Lower Division Courses

**11. Contemporary Theater Issues.** Lecture, three hours. Investigation of theater in contemporary American culture and society. Topics illustrated by faculty and guest speakers, visits to off-campus theaters, and reading from contemporary plays.

**12. Introduction to Performance.** Lecture, two hours; studio, four hours. Investigation of phenomenon of performance and role of the performer in the theatrical event, including interpretation of drama through performance. Examination of various forms of theatrical performance and styles of expression, and development of acting, voice, and movement skills.

**13. Play Reading and Analysis.** Lecture, three hours. Provides a base for subsequent study in theater. Development of techniques of play reading and habits of scholarship useful to further study in each of the theater's subdisciplines, including acting, directing, design, playwriting, and critical study.

**14A-14B-14C. Introduction to Design.** Lecture, three hours; studio, six hours. Exploration of visual interpretation of drama. Study of styles and techniques of design, collaborative role of the designer, principles of design for scenery, lighting, costumes, and sound. Both technical and aesthetic groundwork for further study.

**15. Introduction to Directing.** Lecture, two hours; studio, four hours. Prerequisite: course 11. Investigation of role of the director in theatrical production and theories of play direction, with emphasis on analysis and interpretation of dramatic work and its realization in production.

**20. Acting Fundamentals.** Lecture/laboratory. Required of theater majors. Introduction to interpretation of drama through art of the actor. Development of individual insights, skills, and disciplines in presentation of dramatic material to an audience.

**21A-21B. Introduction to Acting, Voice, and Movement (2 units each).** Studio, six hours. Study of beginning acting technique: improvisation, games, and sense memory with examination of action and objective exercises, outline of Stanislavsky system, and development of voice and movement skills.

**28A-28F. Acting, Voice, and Movement Workshops I (2 units each).** Studio, three to six hours. Prerequisite: consent of instructor. Study of beginning acting technique, scene study, and development of voice and movement skills. May be repeated for a maximum of 12 units.

**50. Theater Production and Performance (2 units).** Studio, six hours. Laboratory experience in various aspects of theater production, including performance in a project or production, stage management, or member of a crew. May be repeated for a maximum of eight units.

## Upper Division Courses

**101A-101B-101C. History of World Theater and Drama.** Lecture, three hours; discussion, one hour. Survey of history of influence of different cultures, traditions, and technologies on development of theater as a social institution. **101A.** Ritual and Religious Drama. Study of origins of theater and drama from oral tradition, myth, storytelling, Shamanism, collective ritual, Greek festival drama, and cloister drama of different cultures. **101B.** Rise of Secular Drama. Study of Renaissance secular theater and drama in Europe, Asia, Africa, and the New World. **101C.** Emergence of Realism and 20th-Century Responses. Study of realism and subsequent departures from realism in theater and drama.

**102A. Theater of Japan.** Lecture, three hours. Exploration of major theater traditions of Japan from emergence of earliest theatrical activity to the present, including investigation of Noh, Bunraku, and Kabuki performance traditions.

**102B. Theater of Southeast Asia.** Lecture, three hours. Examination of representative theatrical genre from various geographical areas in Southeast Asia to illustrate importance and contribution that theater plays in society.

**102C. Cross-Cultural Currents in Theater.** Lecture, three hours. Exploration of interculturalism in theater, with focus on 20th-century alternatives to naturalism. Analysis of historical materials and dramatic texts to investigate cultural, aesthetic, ethical, and social implications of borrowing from other cultures.

**102E. Theater of Non-European World.** Lecture, three hours; discussion, one hour. Survey of theater forms of non-European world in which primary attention is concentrated on examination and analysis of traditional dance-drama and puppet theaters of East Asia, Southeast Asia, South Asia, the Middle East, and Africa. Analogous forms from European theater included for comparative purposes.

**M103A. African American Theater History: Slavery to Mid-1800s.** (Formerly numbered 103A.) (Same as Afro-American Studies M103A.) Lecture, three hours. Prerequisite: upper division standing. Exploration of extant materials on history and literature of theater as developed and performed by African American artists in America from slavery to the mid-1800s. (F)

**M103B. African American Theater History: Minstrel Stage to Rise of the American Musical.** (Formerly numbered 103B.) (Same as Afro-American Studies M103B.) Lecture, three hours. Prerequisite: upper division standing. Exploration of extant materials on history and literature of theater as developed and performed by African American artists in America from the minstrel stage to the rise of the American musical. (W)

**M103C. Origins and Evolution of Chicano Theater.** (Same as Chicana and Chicano Studies M103C.) Lecture, three hours. Prerequisite: upper division standing. Exploration of development of Chicano theater from its beginning in legends and rituals of ancient Mexico to work of Luis Valdez (late 1960s).

**M103D. Contemporary Chicano Theater.** (Same as Chicana and Chicano Studies M103D.) Lecture, three hours. Prerequisite: upper division standing. Study of recent trends in Chicano theater as reflected in works of contemporary Chicano dramatists and theater artists.

**M103E. African American Theater History: The Depression to the Present.** (Formerly numbered 103E.) (Same as Afro-American Studies M103E.) Lecture, three hours. Prerequisite: upper division standing. Exploration of extant materials on history and literature of theater as developed and performed by African American artists in America from the Depression to the present. (Sp)

**103F. Native American Theater.** Prerequisite: consent of instructor. Study of American Indian theater as an evolving art form. (Sp)

**104A-104B-104C. History of American Theater.** (Formerly numbered 104D-104E-104F.) Lecture, three hours. Study of history of influence of different cultures, traditions, and technologies on development of theater as a social institution in America. **104A.** Revolutionary War to the Civil War; **104B.** Civil War to WWI; **104C.** WWI to the Present.

**105. Main Currents in Theater.** Lecture, three hours. Critical examination of leading theories of theater from 1887 to the present. Study and discussion of modern styles of production.

**106. History of American Theater and Drama.** Lecture, three hours. Survey of key works of American dramatic literature and landmarks of American theater history.

**107. Drama of Diversity.** Lecture, three hours. Investigation of diversity in American society as manifested in dramatic works and theatrical presentations.

**111A. Selected Topics on History of European Theater from Primitive Times to 1640.** (Formerly numbered 102A.) Lecture, three hours. Investigation in depth of a selected area of study in theater history from the Greeks to 1640. May be repeated twice for credit.

**111B. Selected Topics on History of European Theater from 1640 to 1900.** (Formerly numbered 102A.) Lecture, three hours. Investigation in depth of a selected area of study in theater history from the Renaissance through 1900. May be repeated twice for credit.

**111C. Selected Topics on History of European Theater from 1900 to the Present.** (Formerly numbered 102B.) Lecture, three hours. Investigation in depth of a selected area of study in theater history from the baroque to the present. May be repeated twice for credit.

**115. Acting, Voice, Movement I.** Studio, 12 hours. Prerequisites: courses 21A-21B. Further study of beginning acting technique and development of acting, voice, and movement skills culminating in a recital project.

**116A-116B-116C. Acting, Voice, Movement II (2 units each).** Studio, six hours. Prerequisites: courses 21A-21B. Development of acting skills through scene study, use of self, and personalization. Examination of characterization. Exercises and their application to contemporary American scenes. Development of speech, voice, and movement skills.

**118A. Creative Dramatics.** Lecture/laboratory. Studies of principles and procedures of improvisational approach to drama as done with children from nursery school to junior high.

**118B. Advanced Creative Dramatics (2 to 4 units).** Lecture, four hours; other, to be arranged. Prerequisite: consent of instructor. Practical application of creative drama process. Exploration of interrelationships of the arts to traditional disciplines of learning. May be repeated once for credit.

**119A. Theater for the Child Audience: Theory and Criticism.** Lecture/laboratory. Principles of production and performance for the child audience.

**119B. Theater for the Child Audience: Performance.** Lecture, two hours; laboratory, four hours. Prerequisites: audition and consent of instructor prior to first class meeting. Designed to provide opportunity for students to work together as an ensemble, creating through improvisation a theater presentation for a young audience. Emphasis on testing theoretical concepts through ensemble work, rehearsal, pretesting, and evaluation of an original production for possible presentation outside the classroom.

**121. Acting Workshop (2 units).** Laboratory, to be arranged. Prerequisites: course 20, consent of instructor. Courses 160, 163A, 163B, and 163C may be taken concurrently. Workshop which provides students with opportunity to rehearse, perform, and criticize scenes. May be repeated once for credit.

**122. Makeup for the Stage (2 units).** Prerequisite: consent of instructor. Art of makeup and its relation to the production as a whole. History, aesthetics, materials, and procedures of makeup.

**123. Intermediate Acting for the Stage.** Lecture/laboratory. Prerequisites: course 20, consent of instructor. Study and practice of art of acting through perfecting of techniques and application of those techniques to acting problems.

**124A. Advanced Voice (2 units).** Studio/laboratory, three to four hours. Prerequisites: courses 126A-126B-126C. Development of voice techniques for the stage, including work in relaxation, limbering, breathing, articulators, and resonators.

**124B. Advanced Speech (2 units).** Studio/laboratory, three to four hours. Prerequisite: course 124A. Designed to acquaint students with international phonetic alphabet and its uses and to exercise students' skills in pronunciation, enunciation, and development of diction versatility.

**125A. Advanced Movement (2 units).** Studio/laboratory, three hours. Physical awareness for the actor, concentrating on warming up the body, relaxation, control, stunts, and gymnastics.

**125B. Advanced Movement and Combat (2 units).** Studio/laboratory, three to four hours. Prerequisite: course 125A. Advanced and contemporary approach to classical and modern movement for the stage actor.

**126A-126B-126C. Acting, Voice, Movement III.** Studio, nine hours. Prerequisites: courses 21A-21B. Study of characterization, including introduction to Shakespeare. Approach to verse, scansion, use of emollients in classic texts. Personalization within heightened reality. Further work in voice, speech, and movement.

**127A-127B-127C. Advanced Acting (2 units each).** Studio, six hours. Prerequisites: courses 126A-126B-126C. Comedy workshop, stand-up comedy, performance art pieces. Audition and cold reading workshop. Solving individual acting projects.

**128A-128F. Acting, Voice, and Movement Workshops II (2 units each).** Studio, four to six hours. Prerequisite: consent of instructor. Study of advanced acting technique, scene study, and development of voice and movement skills. May be repeated for a maximum of 12 units.

**CM129. Contemporary Topics in Theater, Film, and Television (2 units).** (Same as Film and Television CM129.) Lecture, two hours; screenings, two hours. Prerequisite: upper division or graduate standing in theater/film and television. Examination of creative process in theater, film, and television, with consideration of writing, direction, production, and performance. Overview of individual contributions in the collaborative effort; examination of distinctiveness and interrelations among these arts. Individual units include participation of leading members of theater, film, and television professions. May be repeated for a maximum of six units. Concurrently scheduled with course CM229.

**130A. Beginning Playwriting.** Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Required of theater majors. Designed to stimulate students' creative faculties through preparation and completion of a one-act play. Students' critical faculties stimulated by play analysis and scene exercises in discussion section.

**130B. Fundamentals of Playwriting II.** Lecture, three hours plus conference. Prerequisites: course 130A, consent of instructor. Study in original material for the theater, its preparation and development. Designed to give further insight into critical and creating aspects of short and full-length plays and guidance in completion of one-act and full-length plays. May be repeated twice for credit.

**130C. Writing for American Musical Theater.** Lecture/laboratory, three hours. Prerequisite: consent of instructor. Study of practice and techniques used in writing a libretto for musical theater: opening numbers, romance, subplots, and comedy. May be repeated once for credit.

**132. Manuscript Evaluation for Theater.** Lecture, three hours. Prerequisites: course 130A, consent of instructor. Principles and practices in evaluation of manuscripts for theater. May be repeated once for credit.

**C133A-C133B-C133C. Script Development Workshops.** Laboratory, three hours. Prerequisite for playwrights and directors: consent of instructor. Guided preparation of a script for production, focusing on collaborative process between playwright and director, scene work, staged readings, casting, rehearsal, and production. Emphasis on communication, artistic growth, and professional process. Course C133A may be repeated once for credit. Concurrently scheduled with courses C433A-C433B-C433C.

**136. Advanced Acting for the Stage.** Lecture/laboratory. Prerequisites: course 123, consent of instructor. Study and practice of art of acting through a progression to more advanced acting problems. May be repeated twice for credit. Consecutive enrollment with same instructor not permitted. Total units for courses 136, 137A, 137B, and 137C may not exceed 12 units.

**137A-137B-137C. Continuum Study in Acting for the Stage.** Studio, six hours. Prerequisite: course 123. Technique of characterization and performance in advanced and complex acting styles. May be repeated once for credit.



**138. Special Problems in Performance Techniques.** Lecture/laboratory. Prerequisite: consent of instructor. Study of complex problems in voice, movement, and acting. May be repeated twice for credit.

**140A. Scenic Techniques for the Stage.** Lecture, three hours; laboratory, six hours. Prerequisites: course 10, consent of instructor. Intensive study of stage scenery techniques; tools, hardware, and materials; and their relationship to the art of the theatrical scenic design through analysis of scenic design history, overall production concepts, and design styles.

**141A. Lighting Techniques for the Stage.** Lecture, three hours; laboratory, six hours. Prerequisites: course 10, consent of instructor. Required of theater majors. Intensive study of theater lighting, with emphasis on relationship of lighting instruments and control equipment to lighting design. Courses 141A, 140A, and 142A may be taken in any sequence, but not concurrently.

**142B. Advanced Costuming for the Stage.** Lecture, three hours; laboratory, four hours. Prerequisites: course 142A, consent of instructor. Special problems in procuring, designing, construction, and management of costumes used in theatrical productions.

**144. Theater Sound Techniques (2 units).** (Formerly numbered 144A.) Lecture, two hours; laboratory, two hours. Prerequisites: courses 14A-14B-14C or consent of instructor. Study of equipment and techniques utilized in recording and reproduction of sound for the theater.

**145. Costume Design for the Theater.** Lecture/laboratory. Prerequisite: consent of instructor. Design of costumes for theatrical presentations. Study of use of silhouette, fabrics, color, and decoration as related to theatrical characterizations. May be repeated once for credit.

**147A. Drafting (2 units).** (Formerly numbered 149A.) Studio, four hours. Development of visual communication skills through drafting. Exploration of drafting for scenic and lighting designs. May be repeated once for credit.

**147B. Rendering (2 units).** Studio, four hours. Introductory course in basic skills necessary for drawing and rendering for scenic, costume, and lighting design for theater, film, and television. May be repeated once for credit.

**148. Special Courses in Design and Technical Theater.** Lecture, three hours. Prerequisite: consent of instructor. Group study of selected subjects in design and technical theater. May be repeated twice for credit.

**150. Theater Production and Performance (2 units).** Studio, six hours. Prerequisite: course 50. Laboratory experience in various aspects of theater production, including performance in a project or production, stage management, member of a crew, or assignment as a designer or assistant on a production. May be repeated for a maximum of eight units.

**151A-151B. Scenic Design.** Lecture/studio. Prerequisites: courses 14A-14B-14C. Introduction to principles of study and practice of the design of scenery for theater, film, and television. Imagination as impetus for design, text analysis, metaphor, and conceptualization. Investigation of design research process, composition, and style leading to visual presentation of the design.

**C151C. Production Design for Film and Television.** Lecture/studio. Prerequisite: consent of instructor. Study of role of art director. Production design for single- and multiple-camera production and set decoration. Concurrently scheduled with course C451C.

**152A-152B. Lighting Design.** Lecture/studio. Prerequisites: courses 14A-14B-14C. Investigation of principles and techniques of lighting design for theater and television. Study of lighting, with emphasis on imagination, text analysis, metaphor, and conceptualization. Investigation of composition and control of light and color in relation to the actor.

**C152C. Lighting Design for Television.** Lecture/studio. Prerequisite: consent of instructor. Study of current professional lighting design practices in television for single- and multiple-camera production. Concurrently scheduled with course C452C.

**153A-153B. Costume Design.** Lecture/studio. Prerequisites: courses 14A-14B-14C. **153A.** (Formerly numbered 142A.) Imagination as impetus for design, text analysis, metaphor, and conceptualization. Investigation of design research process and character analysis leading to visual presentation of the design.

**153B.** Study of costume design for period productions, development of conceptual designs, and costume design for music theater.

**C153C. Costume Design for Film and Television.** Lecture/studio. Prerequisites: courses 14A-14B-14C. Study of current professional costume design and wardrobe practices in film and television, including effect of differing media on design choices. Concurrently scheduled with course C453C.

**154A-154B. Sound Design.** Lecture/studio. Prerequisites: courses 14A-14B-14C. **154A.** Study of recording, mixing, editing, and playback of sound effects, voice, and music in the theater. **154B.** Introduction to use of delay, equalization, and microphone placement for theater sound reinforcement. Study of creation of sound effects, control of MIDI data, and design techniques for musical theater.

**C154C. Sound for Film and Television.** Lecture/studio. Prerequisite: consent of instructor. Study of current professional sound recording, rerecording, mixing, and synchronization practices for film and television. Concurrently scheduled with course C454C.

**C155A-C155G. Graphic Representation of Design (2 units each).** Studio, four hours. Prerequisite: course 147A or 147B. Concurrently scheduled with courses C455A-C455G:

**C155A.** Perspective Drawing. Introduction to use of pencil and pen to communicate scenic designs, including one- and two-point perspective, form light, shade, and textures.

**C155B.** Watercolor Rendering. Study of watercolor techniques as they relate to interpretation of scenic designs, including painting of brick, wood, stone, fabrics, and other surfaces.

**C155C.** Marker Rendering. Study and practice of marker rendering techniques as a means of communication for scenic and costume designers.

**C155D.** Model Making. Study of the model for representation of scenic designs from initial working prototypes to finished color models. Use of wide variety of materials and techniques for execution of the model.

**C155E.** Life Drawing. Study and practice in drawing of human form.

**C155F.** Costume Rendering. Study of techniques for rendering theatrical costumes, with emphasis on figure, clothing, and fabrics.

**C155G.** Scene Painting Techniques. (Formerly numbered C146.) Study of scenic painting techniques and materials and their realization of color design and elevations. May be repeated once for credit.

**C156A. Introduction to Computer-Assisted Drafting (2 units).** Studio, four hours. Prerequisite: course 147A or 147B. Study of computer-assisted design for theater, film, and television. Introduction to computer drafting, drawing and editing techniques, drawing floor plans, and elevation drawings. Concurrently scheduled with course C456A.

**C156B. Introduction to Computer-Assisted Design (2 units).** Studio, four hours. Prerequisite: course 147A or 147B. Study of computer-assisted design for theater, film, and television. Investigation of computer-assisted design techniques, including lighting designs, use of symbol libraries, and pictorial. Introduction to computer-assisted drafting. Concurrently scheduled with course C456B.

**C156C. Introduction to Computer-Assisted Rendering (2 units).** Studio, four hours. Prerequisite: course 147A or 147B. Study of computer design for theater, film, and television. Investigation of three-dimensional computer drawing: wire-frame perspective drawing and photo-realistic computer rendering techniques. Concurrently scheduled with course C456C.

**C157A-C157B-C157C. Costume Construction Techniques (2 units each).** Studio, four hours. Study of theory and application of drafting, pattern making, fitting, and construction techniques for period costumes and undergarments to achieve an authentic-looking costume using contemporary methods. Concurrently scheduled with courses C457A-C457B-C457C. **C157A.** Prerequisites: courses 14A-14B-14C, consent of instructor. Introduction to draping, pattern grading fitting, and slash and spread adaptation. **C157B.** Prerequisite: course C157A. Introduction to costume drafting, construction of period undergarments. **C157C.** Prerequisites: courses C157A-C157B. Draping, patterning, and fitting techniques for period garments.

**C158A. Scenic Design Technology.** (Formerly numbered 140B.) Lecture/studio. Prerequisites: courses 14A-14B-14C. Investigation of materials, systems, and techniques for realization of scenic designs for theater, film, and television. Study of advanced techniques and materials for construction, finishing, and rigging of scenery and properties. Concurrently scheduled with course C458A.

**C158B. Lighting Design Technology.** Lecture/studio. Prerequisites: courses 14A-14B-14C. Investigation of materials, systems, and techniques for realization of lighting designs for theater, film, and television. Study of design, operation, and performance of lighting instruments, dimming equipment, and control systems, including automated fixtures, projection equipment, and computer systems for lighting. Concurrently scheduled with course C458B.

**C158C. Sound Design Technology.** Lecture/studio. Prerequisites: courses 14A-14B-14C. Investigation of materials, systems, and techniques for realization of sound designs for theater, film, and television. Study of operation and performance of equipment for recording, mixing, and reproduction of theater sound. Concurrently scheduled with course C458C.

**159. Design Portfolio Project.** Lecture/studio. Prerequisites: courses 14A-14B-14C. Preparation of complete designs and drawings for a production and assembly of a design portfolio and résumé. Projects prepared under guidance of a faculty adviser.

**160. Fundamentals of Play Direction (5 units).** Lecture, two hours; laboratory, four hours. Prerequisite: consent of instructor. Required of theater majors. Course 121 may be taken concurrently. Basic theories of play direction and their application through preparation of scenes under rehearsal conditions.

**163A-163B-163C. Directing for the Stage.** (Formerly numbered 161A, 161B, 161C.) Lecture/studio. Prerequisites: course 15, consent of instructor.

**163A.** Intensive development of primary directing skills and process, including text analysis and exploration of craft fundamentals as a basis for director/actor communication and effective staging. Students direct scenes from plays under laboratory conditions.

**163B.** Further development of craft elements of directorial method, with additional emphasis on psychological aspects of director/actor communication. Students direct scenes under laboratory conditions in alternative stage configurations.

**163C.** Culminating development of directorial methods, with particular emphasis on challenges of style in text and production. Students direct scenes under laboratory conditions in alternative stage configurations.

**C163D. Directing Project for the Stage.** (Formerly numbered C162B.) Lecture, four hours; studio, six hours. Prerequisites: courses 163A-163B-163C, consent of instructor. Completion of course C163D satisfies course 180 requirement. Application of stage directing techniques in production of a short play. Students direct a one-act play. May be repeated once for credit. Concurrently scheduled with course C263D.

**170. Theater Laboratory.** Lecture, four hours; laboratory, eight hours. Prerequisites: courses 140A, 141A, 142A, consent of instructor. Required of theater majors. Laboratory in theater production under supervision. Translation of ideas and concepts into the dramatic form.

**171A. Advanced Theater Laboratory (1 to 4 units).** Hours to be arranged. Prerequisite: consent of instructor. Creative participation as actor or stage manager in public presentation of departmental productions. May be taken for a maximum of four units.

**171B. Advanced Theater Laboratory (1 to 4 units).** Hours to be arranged. Prerequisite: consent of instructor. Creative participation in realization of production elements related to public presentation of departmental productions. May be taken for a maximum of four units.

**C172. Technical Theater Laboratory (2 units).** Hours to be arranged. Prerequisite: consent of instructor. Required of theater majors. Laboratory in various aspects of theater production. Must be repeated for a maximum of eight units, but no assignment may be repeated more than once. Concurrently scheduled with courses C272 and C472.

**173A. Design Assignment: Assistant Designer (2 units).** Studio, six hours. Prerequisites: courses 14A-14B-14C. Laboratory experience as an assistant designer, including participation in preparation and realization of scenic, lighting, costume, or sound designs. May be repeated twice.

**173B. Production Design Assignment: Designer (2 units).** Studio, six hours. Prerequisites: courses 14A-14B-14C. Laboratory experience as a designer, including preparation and realization of scenic, lighting, costume, or sound designs. May be repeated twice.

**174A. Stage Managing Techniques (2 units).** Studio, six hours. Prerequisites: courses 14A-14B-14C. Professional duties of stage manager. Problems of unions, professional auditions, organization, scheduling, out-of-town openings, Broadway openings, and responsibilities of a lengthy run.

**174B. Project in Stage Management (3 units).** Studio, nine hours. Prerequisite: course 174A. Laboratory experience in the professional duties of assistant stage manager, including participation as an assistant stage manager in preproduction, rehearsal, and performance phases of a production. May be repeated once for credit.

**174C. Project in Stage Management.** Studio, 12 hours. Prerequisite: course 174A. Laboratory experience in the professional duties of stage manager, including participation as a stage manager in preproduction, rehearsal, and performance phases of a production. Problems of unions, auditions, organization, scheduling, and responsibilities of a lengthy run. May be repeated once for credit.

**180. Senior Project.** Lecture/studio, three hours. Prerequisites: courses 101A-101B-101C. Preparation of a conceptual or creative project to provide a culminating experience in the production of a creative or research work.

**C190A. Role of Producer in Professional Theater (2 units).** Study of structure governing economic and artistic decision-making processes in professional theater of America. Concurrently scheduled with course C294A.

**C190B. Role of Management in Educational and Community Theater (2 units).** Study of artistic, social, and economic criteria in administration of educational and community theater. Concurrently scheduled with course C294B.

**191. The Touring Company (2 to 12 units).** Lecture, 20 hours; laboratory, 22 hours. Prerequisite: consent of instructor. Rehearsal and technical preparation of a theatrical work for touring and performance of that work on tour.

**192. Motion Picture, Television, and Theater Internship (2, 4, or 8 units).** Field experience, eight, 16, or 24 hours; individual conferences, to be arranged. Prerequisite: consent of instructor. Limited to senior Department of Theater majors. Internship at various studios or theaters accentuating creative contribution, organization, and work of professionals in their various specialties. May be taken for a maximum of eight units.

**199. Special Studies in Theater Arts (2 to 8 units).** Hours to be arranged. Prerequisite: senior standing, 3.0 GPA in major, consent of instructor. May be taken for a maximum of eight units.

## Graduate Courses

Certain graduate courses concerned with individual student projects may be repeated for credit on recommendation of the departmental graduate adviser. Graduate courses are not open to undergraduate students.

**202A. Seminar: Western Classical Theater.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Examination of theatrical production and dramatic form in the Greek and Roman periods. May be repeated twice for credit.

**202B. Seminar: Medieval Theater.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected studies of theatrical production and dramatic form in the Middle Ages. May be repeated twice for credit.

**202C. Seminar: Renaissance and Baroque Theater.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected studies in theater architecture, theatrical production, and dramatic form in English and Continental theater from 1485 to the early 18th century. May be repeated twice for credit.

**202D. Seminar: Bourgeois and Romantic Theater.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected studies in theater architecture, theatrical production, and dramatic form in English and Continental theater from 1700 to 1870. May be repeated twice for credit.

**202E. Seminar: Modern Consciousness in Theater.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Study of prototypes of modern experience as encountered in work of Ibsen and Strindberg. May be repeated twice for credit.

**202F. Seminar: Modern Realism.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected studies of theater's response to science and technology, politics, and revolution. May be repeated twice for credit.

**202G. Seminar: Modern Theatricalism.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected studies in symbolism and avant-garde theater. Exploration of dream experience and private psyche, religious experience, and revitalization of myth and ritual. May be repeated twice for credit.

**202M. Seminar: American Theater.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected studies in development of theatrical production and dramatic writing in American theater. May be repeated twice for credit.

**202P. Seminar: Traditions of African Theater.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected studies of traditional theater forms such as those indigenous to Ghana, Nigeria, and other African nations and their diaspora (Haiti, Jamaica, and other areas of the Caribbean) through examination of character, structure, performance modes, and archetypes. May be repeated twice for credit.

**202R. Seminar: East Asian Theater.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected topics in theater forms of East Asia, including dramatic literature, costume, theater spaces, and critical writings. May be repeated twice for credit.

**202S. Seminar: South Asian Theater.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected topics in theater forms of South Asia, including dramatic literature, costume, theater spaces, and critical writings. May be repeated twice for credit.

**202T. Seminar: Southeast Asian Theater.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected topics in theater forms of Southeast Asia, including dramatic literature, costume, theater spaces, and critical writings. May be repeated twice for credit.

**203. Theater Ethics and Issues (5 units).** Seminar, four hours. Prerequisites: graduate standing, consent of instructor. Investigation of a selected area of theater and drama study that explores significant issues and ethical considerations of the modern world. May be repeated four times for credit.

**204. Theater Genres (5 units).** Seminar, four hours. Prerequisites: graduate standing, consent of instructor. Investigation of history and literature of the theater as manifested in one or more of its major forms or genres. May be repeated four times for credit.

**205A-205B-205C. Background of Theatrical Art.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Analysis of major plays, commentaries, and historical materials. **205A.** Classical and Medieval Periods; **205B.** Renaissance, Baroque, and Rococo Periods; **205C.** Romantic, Naturalistic, and Symbolist Periods.

**206. Themes in World Theater and Drama (5 units).** Seminar, four hours. Prerequisites: graduate standing, consent of instructor. Selected topics in world theater history, drama, production, and/or architecture organized on a thematic basis. May be repeated four times for credit.

**207A-207B. Theater Aesthetics.** Prerequisites: graduate standing, consent of instructor. Discussion of essential issues in aesthetics of theater and drama based on philosophy of art and theories of the theater. **207A.** Classical and Medieval Theories of Art and Theater; **207B.** Renaissance Theories of Art and Theater to the Present.

**208. Dramaturgy.** Discussion/laboratory, three hours. Prerequisites: graduate standing, consent of instructor. Theoretical and practical aspects of the dramaturge's work in contemporary theater.

**209. Theater Authors (5 units).** Prerequisites: graduate standing, consent of instructor. Investigation of work of a theater artist from history of world theater, with special emphasis on relationship to time in which the work was generated. May be repeated four times for credit.

**210. Topics in World Theater and Drama (5 units).** Prerequisites: graduate standing, consent of instructor. Investigation of selected topics in world theater, drama, production, and architecture. May be repeated four times for credit.

**216A. Critical and Historical Methods.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Studies in theater historiography and sociological criticism.

**216B. Critical Methods.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Studies in critical theories of theatrical form and structure.

**216C. Critical Methods.** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Studies in contemporary modes of psychoanalytic and archetypal criticism for theater.

**220. Graduate Forum (1 unit).** (Formerly numbered 220F-220W-220S.) Seminar, two hours bimonthly or five times per term. Prerequisite: graduate standing in theater. Presentation and discussion of issues informing and affecting contemporary theater. May be repeated four times for credit. S/U grading.

**CM229. Contemporary Topics in Theater, Film, and Television (2 units).** (Same as Film and Television CM229.) Lecture, two hours; screenings, two hours. Prerequisite: upper division or graduate standing in theater/film and television. Examination of creative process in theater, film, and television, with consideration of writing, direction, production, and performance. Overview of individual contributions in the collaborative effort; examination of distinctiveness and interrelations among these arts. Individual units include participation of leading members of theater, film, and television professions. May be repeated for a maximum of six units. Concurrently scheduled with course CM129.

**230A-230B-230C. Writing for the Contemporary Theater (4 to 8 units each).** Lecture, three hours; studio, two hours. Prerequisites: graduate standing, consent of instructor. **230A.** One-Act Play. Analysis of strategy and dramatic structure of selected contemporary short plays leading to the guided completion and critique of student-written one-act plays. **230B.** Full-Length Play. Analysis of strategy and dramatic structure of selected contemporary full-length plays leading to the guided completion and critique of a student-written full-length play. **230C.** Performance and Text. Exploration of structural strategies, political implications, and technical demands of selected contemporary American plays leading to the guided completion and critique of student work.

**232. Manuscript Analysis.** Lecture, three hours. Prerequisites: graduate standing, consent of instructor. Critical and constructive study of dramatic techniques as employed by playwrights and screenwriters in selected examples of contemporary work. May be repeated once for credit.

**241. Research in Technical Theater.** Prerequisites: graduate standing, consent of instructor. Research in technical processes and equipment in theater.

**242A-242B-242C. History of Style and Ornamentation.** Prerequisites: graduate standing, consent of instructor. In-depth study of history of costume, architecture, interiors, furnishings, and their interrelationships from early Western culture through the late Gothic period. Emphasis on those periods most prolific in dramatic literature and on resources and research techniques for visual artists.

**243A-243B-243C. Scenic Design.** Prerequisite: consent of instructor. Advanced study and practice in scenic design for theater. Imagination as impetus for design, text analysis, metaphor, and conceptualization. Investigation of design research process, composition, and style leading to visual presentation of the design. May be repeated once for credit.

**244A. Advanced Theater Laboratory (2 or 4 units).** Laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Creative participation as assistant director, stage manager, or performer in public presentation of departmental productions. May be taken for a maximum of four units.

**244B. Advanced Theater Laboratory (2 or 4 units).** Laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Creative participation in realization of production elements related to public presentation of departmental productions. May be taken for a maximum of four units.

**245A. Production Management.** Lecture, three hours. Prerequisite: consent of instructor. Study in production management for the theater. Examination of professional duties of production manager, including preproduction, rehearsal, and performance phases of a production. Problems of resource management, unions, organization, scheduling, and budgeting while maintaining a creative and collaborative environment.

**245B. Production Management.** (Formerly numbered 245.) Lecture, three hours. Prerequisite: course 245A. Advanced study in production management for the theater, with focus on planning process of professional production manager in a seasonal and repertory environment. Problems of resource allocation, unions, organizational structure, scheduling, and budgeting to establish a creative and collaborative environment.

**245C. Projects in Production Management.** Studio/laboratory. Prerequisite: course 245B. Laboratory experience in professional duties of production manager, including participation as a production manager in preproduction, rehearsal, and performance phases of a production. Problems of resource management, unions, organization, scheduling, and budgeting.

**246A-246B-246C. History of Costume.** Lecture/studio. Prerequisite: graduate standing. Study of history of costume as a manifestation of cultural, social, economic, and political influences to provide a historical framework for design of costumes for theater, film, and television. Historic survey and in-depth exploration of a selected period, with study of influences of diverse cultures.

**247. Collaborative Project in Design and Production (3 to 4 units).** Studio, four hours. Prerequisites: graduate standing, consent of instructor. Collaborative project in design, including analysis, conceptual development, and preparation of scenic, lighting, costume, or sound designs. May be repeated once for credit.

**260. Directing I.** Lecture, four hours; studio, 24 hours. Prerequisites: graduate standing, consent of instructor. Development of directorial skills of analysis, planning, staging, and criticism through medium of written preparations and directing of scenes.

**261. Directing II.** Lecture, four hours; studio, 30 hours. Prerequisites: graduate standing, consent of instructor. Problems in direction of post-realist plays through medium of interpretation and laboratory scene work.

**263. Production Project in Direction for the Stage (2 to 6 units).** Discussion, one hour; studio, 12 to 24 hours. Prerequisites: graduate standing, consent of instructor. Direction of a dramatic work for public performance. Discussion and critique of work in progress. May be repeated for a total of no more than 12 units.

**C263D. Directing Project for the Stage.** (Formerly numbered C262.) Lecture, four hours; studio, six hours. Prerequisites: courses 163A-163B-163C, consent of instructor. Application of stage directing techniques in production of short play. Students direct a one-act play. May be repeated once for credit. Concurrently scheduled with course C163D.

**264. Directing Classical and Historical Drama.** Lecture, four hours; studio, 30 hours. Prerequisites: graduate standing, consent of instructor. Problems in interpretation and direction of historical or classical drama through medium of laboratory scene work.

**265. Modern Theories of Production.** Examination of modern theories of production from emergence of the director in the 19th century to the present. Investigation of different responses to problems of creating a vital theater event in context of ongoing evolution of theater as an art form. Examination of contribution of significant directors and movements; relation between theater and other forms of representation.

**266. Theatrical Conceptualization.** Examination of process of conceptualization in dramatic production; centrality of theateric conceptualization in interpretation of dramatic text; exploration of range of possibilities inherent in different theatrical spaces and options in design components. Consideration of visual arts and music as sources of stimulus for theatrical conceptualization, with focus on collaborative aspect of theatrical production.

**C272. Production and Performance Laboratory (2 units).** Lecture, three hours; laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Credit for creative production assignments required of all M.A. students during first three terms in residence. May be repeated twice for credit. Concurrently scheduled with courses C172 and C472.

**290A. Role of Management in Artistic Decision Making in the Theater.** Prerequisite: consent of instructor. Descriptive study of criteria for decision making in artistic institutions, including role of the institution in society, economic environment of the arts, and artistic value systems of arts organizations.

**290B. Programming and Planning Policies in the Theater.** Prerequisite: consent of instructor. Analysis of social, artistic, and economic roles of the arts as reflected in programming policy. Examination of social goals pursued in establishing relationships between the arts and their environment.

**C294A. Artistic Control of Theatrical Production by Professional Producer (2 units).** Prerequisites: graduate standing, consent of instructor. Study of structure governing economic and artistic decision-making processes in professional theater of America and historical development of involvement of producer in artistic process. Concurrently scheduled with course C190A. Additional research and writing required of graduate students.

**C294B. Organization and Operation of Community Theater (2 units).** Prerequisites: graduate standing, consent of instructor. Study of artistic, social, and economic criteria in administration of educational and community theater, with research in history of current practices in operations, administration, and organization. Concurrently scheduled with course C190B.

**298A-298B. Special Studies in Theater Arts (2 to 4 units each).** Lecture/discussion. Prerequisites: graduate standing, consent of instructor. Seminar study of problems in theater arts, organized on topic basis. May be repeated once for credit.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**420A-420B-420C. Advanced Acting I (4 to 8 units, 4 units, 4 units).** Studio, six to 18 hours:

**420A.** Development of an internal technique, beginning with an autodrama which is a dramatization of one's personal history. Scene work follows, with emphasis on off-stage preparations, improvisations capturing the circumstances, life of the character, and intentions of the scene.

**420B.** Scene work, usually from 20 to 30 minutes in length. Continuation of work on off-stage preparation, with further development of how the actor goes about doing research and fieldwork on the character being played.

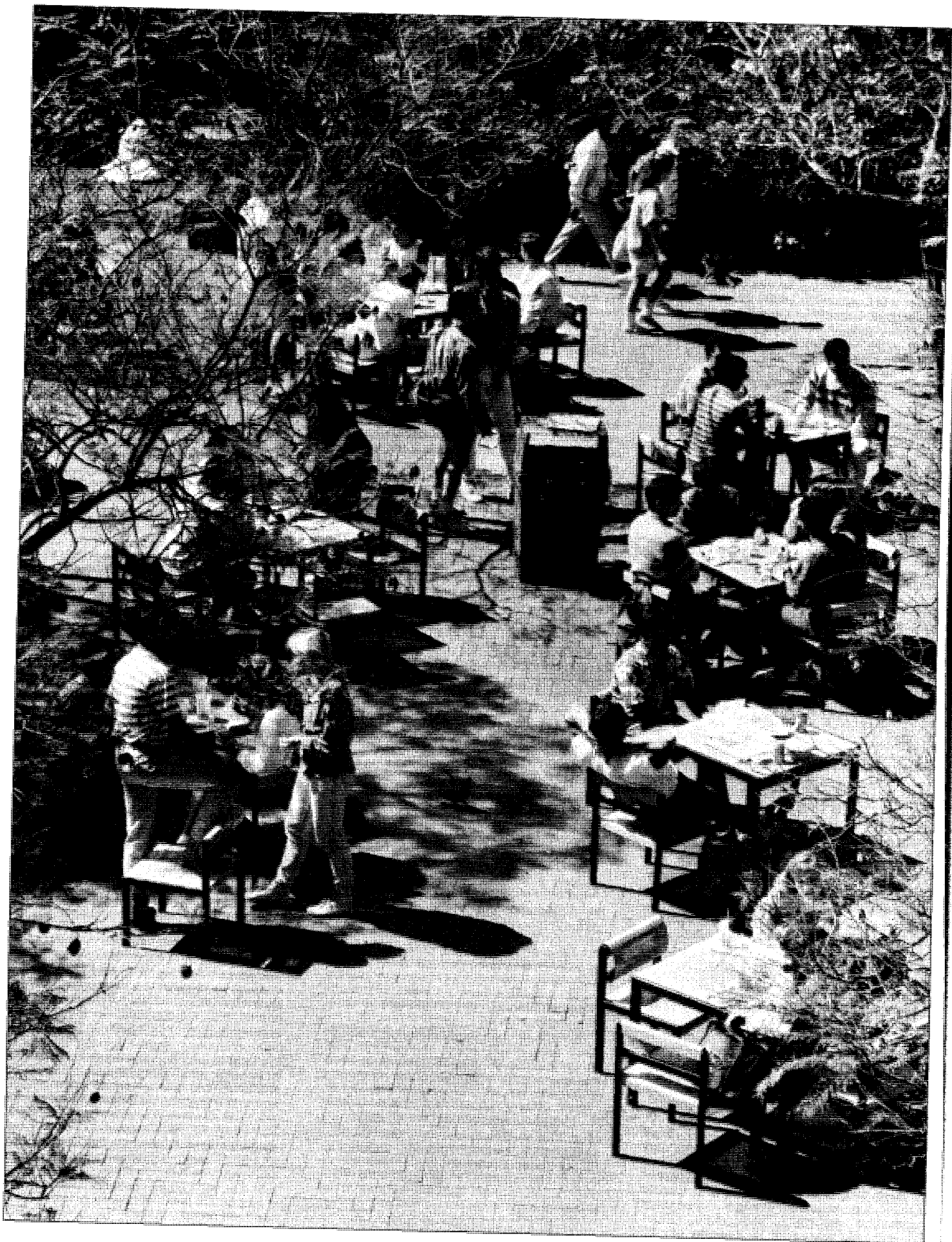
**420C.** Development of an external technique through comedy and of skits, improvisation, physical humor, delivery of a line, rhythm, timing, and public cabaret. Fusion of the internal; use of action and objective with the external.

**421A-421B-421C. Advanced Acting II (4 or 8 units each).** Studio/laboratory, six to 18 hours. **421A.** Extending the idea of autobiography and using it as art. The actor as performance artist. Playing characters quite removed from oneself. Using language. Using Shakespeare and oneself to play him. **421B.** Continued character behavior study through language and movement. Further work on actions, objectives, and researching the role. **421C.** Comedy workshop. Exploration of craft of comedy and development of cabaret pieces.

**422. Advanced Acting for Theater, Film, and Television (8 to 12 units).** Studio/laboratory. Intensive performance experience. May be repeated for a maximum of 24 units. S/U grading.

**424A-424B-424C. Advanced Voice and Speech I (2 or 4 units each).** Studio/laboratory, three to six hours. Development of voice and speech techniques for the stage, including those of relaxation, breathing, resonance, and development of speaking voice. Speech training uses International Phonetic Alphabet to train students in standard American speech. Text work in poetry and prose.

**424D-424E-424F. Advanced Voice and Speech II (2 or 4 units each).** Studio/laboratory, three to six hours. Advanced voice problems. Extension of first-year work, with increased demands on voice. Range, resonance, and breathing capacity extension. Articulation and phonetic alphabet. Text work in classical verse.



**425A-425B-425C. Advanced Movement I (2 or 4 units each).** Studio/laboratory, three to six hours. Discovery of body's unique language through exercises designed to explore and free the total instrument. Development of a flexible actor with range, expression, and confidence physically. Awakening of the imagination while exploring the worlds of ritual, animal, conceptual, and modern dance movements.

**425D-425E-425F. Advanced Movement II (2 or 4 units each).** Studio/laboratory, three to six hours. Presentation of a more complete picture of stage movement and its relationship to theater, music, and dance. Advancement of physical training of individual actors to their maximum potential. Experience in techniques and discovery of origins of a variety of acrobatic and dance disciplines, including ballet, ballroom, period dance, and circus techniques.

**429. Performance Workshop (2 units).** Studio, four hours. Prerequisites: graduate standing, consent of instructor. Limited to graduate students not enrolled in M.F.A. acting program. Exercises in performance techniques, including autodrama and scene study. Development of performance skills through scene study, use of self, and personalization. Examination of characterization exercises and their application to scenes.

**430A-430B-430C. Advanced Studies in Playwriting (4 to 8 units each).** Lecture, three hours. Prerequisite: graduate standing in M.F.A. playwriting program. Guided completion of full-length scripts for the stage.

**431. Special Topics in Playwriting.** Discussion, three hours. Prerequisites: graduate standing in M.F.A. playwriting program and/or consent of instructor. Analysis and practice of varied aspects of playwright's art. Variable content selected from topics such as comedy writing, docudrama, writing for alternative audiences, adaptation from stage to screen, children's theater, or improvisational techniques. May be repeated twice for credit.

**432. Manuscript Evaluation.** Lecture, four hours; laboratory, to be arranged. Prerequisites: course 132 and consent of instructor, or candidate in M.F.A. writing program and consent of instructor. Evaluation of manuscripts of beginning writers, including but not limited to those produced in Film and Television 130B. May be taken twice for credit (once each year of M.F.A. residence).

**C433A-C433B-C433C. Script Development Workshops.** Laboratory, three hours. Prerequisites for playwrights and directors: graduate standing, consent of instructor. Guided preparation of a script for production, focusing on collaborative process between playwright and director, scene work, staged readings, casting, rehearsal, and production. Emphasis on communication, artistic growth, and professional process. Course C433A may be repeated once for credit. Concurrently scheduled with courses C133A-C133B-C133C.

**435AF-435AW-435AS. Problems in Advanced Writing for the Stage (0 units, 0 units, 2 units).** Prerequisite: consent of instructor. Limited to M.F.A. candidates. Review discussion and critique of playwriting projects. May be repeated for a maximum of six units. In Progress and S/U grading.

**441A-441B-441C. Lighting Design.** Lecture/studio. Prerequisite: consent of instructor.

**441A.** Study and practice in lighting the actor, emphasizing textual and character analysis from lighting designer's perspective, conceptual development with the director, effect of light on dynamics of staging, use of color in light, and relationship of lighting designer to the actor. May be repeated once for credit.

**441B.** Study of use of light and color to define space, effect of light on scenery and costumes, lighting for arena/thrust theaters, multisensory productions, lighting patterns, and moving scenery. May be repeated once for credit.

**441C.** Investigation of lighting design in production, musical theater, opera, touring, and repertory situations. Study of analysis of script and score for lighting designer. May be repeated once for credit.

**441D. Scenic Projection and Media Techniques.** Lecture/laboratory. Prerequisites: graduate standing, consent of instructor. Advanced study and practice in scenic projection and media techniques, with emphasis on analysis, design, and execution of theatrical projection and photographic technique for the stage.

**442A-442B-442C. Costume Design.** Lecture/studio. Prerequisite: consent of instructor. Advanced study and practice in costume design for theater. Imagination as impetus for design, text analysis, metaphor, and conceptualization. Investigation of design research process, period style, and character analysis leading to visual presentation of the design. Study of costume design for theatrical productions, ballet, opera, and musical theater. May be repeated once for credit.

**442D-442E-442F. Advanced Problems in Costume Design.** Prerequisites: graduate standing, consent of instructor. **442D.** Costume design and methodology for the large-scale production. Special problems and techniques unique to opera, ballet, and musical comedy costume design. **442E.** Intensive study of professional design practice in film and television. **442F.** Practical analysis of textile usage, history, and fabric modification for theatrical costume design.

**443. Problems in Design (2 or 4 units).** Lecture/laboratory, four hours (additional hours as required). Prerequisite: consent of instructor. Study and practice in design techniques for theater. May be repeated for a maximum of 12 units.

**444A-444B-444C. Sound Design.** Lecture/studio. Prerequisite: consent of instructor.

**444A.** Study of sound and acoustics as they relate to performance environments, techniques associated with recording, mixing, processing, automation, and reproduction of dialogue, effects, and music tracks for theater sound design. May be repeated once for credit.

**444B.** Advanced study and practice in preparation and recording of theater sound designs, with emphasis on analysis of script and score, conceptual development of the design, and multitrack recording techniques to realize the design. May be repeated once for credit.

**444C.** Study and practice in processing and mixing of live and recorded sound; mix-down of multitrack recordings; preparation of sound tracks and sound reinforcement in the theater. Study of creation of sound effects, control of MIDI data, and design techniques for music theater. May be repeated once for credit.

**C451C. Production Design for Film and Television.** Lecture/studio. Prerequisite: consent of instructor. Study of role of art director. Production design for single- and multiple-camera production and set decoration. Concurrently scheduled with course C151C.

**C452C. Lighting Design for Television.** Lecture/studio. Prerequisite: consent of instructor. Study of current professional lighting design practices in television for single- and multiple-camera production. Concurrently scheduled with course C152C.

**C453C. Costume Design for Film and Television.** Lecture/studio. Prerequisites: courses 14A-14B-14C. Study of current professional costume design and wardrobe practices in film and television, including effect of differing media on design choices. Concurrently scheduled with course C153C.

**C454C. Sound for Film and Television.** Lecture/studio. Prerequisite: consent of instructor. Study of current professional sound recording, rerecording, mixing, and synchronization practices for film and television. Concurrently scheduled with course C154C. Graduate students expected to produce designs demonstrating a higher level of proficiency and skill.

**C455A-C455G. Graphic Representation of Design (2 units each).** Studio, four hours. Prerequisite: course 147A or 147B. Concurrently scheduled with courses C155A-C155G:

**C455A.** Perspective Drawing. Introduction to use of pencil and pen to communicate scenic designs, including one- and two-point perspective, form light, shade, and textures. Graduate students expected to produce drawings demonstrating a higher level of proficiency and skill.

**C455B.** Watercolor Rendering. Study of watercolor techniques as they relate to interpretation of scenic designs, including painting of brick, wood, stone, fabrics, and other surfaces. Graduate students expected to produce drawings demonstrating a higher level of proficiency and skill.

**C455C.** Marker Rendering. Study and practice of marker rendering techniques as a means of communication for scenic and costume designers.

**C455D.** Model Making. Study of the model for representation of scenic designs from initial working prototypes to finished color models. Use of wide variety of materials and techniques for execution of the model. Graduate students expected to produce models demonstrating a higher level of proficiency and skill.

**C455E.** Life Drawing. Study and practice in drawing of human form.

**C455F.** Costume Rendering. Study of techniques for rendering theatrical costumes, with emphasis on figure, clothing, and fabrics.

**C455G.** Scene Painting Techniques. (Formerly numbered C446.) Study of scenic painting techniques and materials and their realization of color design and elevations. May be repeated once for credit.

**C456A. Introduction to Computer-Assisted Drafting (2 units).** Studio, four hours. Prerequisite: course 147A or 147B. Study of computer-assisted design for theater, film, and television. Introduction to computer drafting, drawing and editing techniques, drawing floor plans, and elevation drawings. Concurrently scheduled with course C156A.

**C456B. Introduction to Computer-Assisted Design (2 units).** Studio, four hours. Prerequisite: course 147A or 147B. Study of computer-assisted design for theater, film, and television. Investigation of computer-assisted design techniques, including lighting designs, use of symbol libraries, and pictorial. Introduction to computer-assisted drafting. Concurrently scheduled with course C156B.

**C456C. Introduction to Computer-Assisted Rendering (2 units).** Studio, four hours. Prerequisite: course 147A or 147B. Study of computer design for theater, film, and television. Investigation of three-dimensional computer drawing: wire-frame perspective drawing and photo-realistic computer rendering techniques. Concurrently scheduled with course C156C.

**C457A-C457B-C457C. Costume Construction Techniques (2 units each).** Studio, four hours. Study of theory and application of drafting, pattern making, fitting, and construction techniques for period costumes and undergarments to achieve an authentic-appearing costume using contemporary methods. Concurrently scheduled with courses C157A-C157B-C157C. **C457A.** Prerequisites: courses 14A-14B-14C, consent of instructor. Introduction to draping, pattern grading fitting, and slash and spread adaptation. **C457B.** Prerequisite: course C457A. Introduction to costume drafting, construction of period undergarments. **C457C.** Prerequisites: courses C457A-C457B. Draping, patterning, and fitting techniques for period garments.

**C458A. Scenic Design Technology.** Lecture/studio. Prerequisites: courses 14A-14B-14C. Investigation of materials, systems, and techniques for realization of scenic designs for theater, film, and television. Study of advanced techniques and materials for construction, finishing, and rigging of scenery and properties. Concurrently scheduled with course C158A.

**C458B. Lighting Design Technology.** Lecture/studio. Prerequisites: courses 14A-14B-14C. Investigation of materials, systems, and techniques for realization of lighting designs for theater, film, and television. Study of design, operation, and performance of lighting instruments, dimming equipment, and control systems, including automated fixtures, projection equipment, and computer systems for lighting. Concurrently scheduled with course C158B.

**C458C. Sound Design Technology.** Lecture/studio. Prerequisites: courses 14A-14B-14C. Investigation of materials, systems, and techniques for realization of sound designs for theater, film, and television. Study of operation and performance of equipment for recording, mixing, and reproduction of theater sound. Concurrently scheduled with course C158C.

**459A-459B. Directing for Theater, Film, and Television.** Lecture, three hours. Prerequisite: consent of instructor. Limited to graduate students in Department of Theater. Analysis and exploration, with specific scenes, of differences and many similarities in directorial approach to same literary material in three media.

**460AF-460AW-460AS. Contemporary Issues in Direction (1 unit each).** Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Discussion of role of director in contemporary professional practice. Review discussion and critique of directing projects. May be repeated for a maximum of four units.

**460B-460C. Problems in Advanced Direction for the Stage.** Lecture, to be arranged. Prerequisite: consent of instructor. Limited to M.F.A. candidates. Discussion and critique of work in progress. **460B.** Preparation and presentation of a published play under rehearsal conditions. **460C.** Preparation and presentation of a full-length original play under rehearsal conditions.

**462. Production Project in Direction for the Stage (4 or 8 units).** Lecture, to be arranged. Prerequisite: consent of instructor. Limited to M.F.A. candidates. Preparation and presentation of an original play under minimal production conditions. Discussion and critique of work in progress.

**463. Production Project in Direction for the Stage (8 or 12 units).** Lecture, to be arranged. Prerequisite: consent of instructor. Limited to M.F.A. candidates. Preparation and presentation of a play under fully produced theater conditions.

**C472. Production and Performance Laboratory (2 to 8 units).** Laboratory, to be arranged. Prerequisites: M.F.A. candidate, consent of instructor. Credit for creative production projects required of all M.F.A. students. May be repeated three times for a maximum of 16 units. Concurrently scheduled with courses C172 and C272.

**474. Projects in Theater Design (2 or 4 units).** Discussion, three hours; laboratory, 12 hours to be arranged. Prerequisites: graduate standing, consent of instructor. Study and practice in preparation and performance of dramatic works for public performances as a contributing artistic member of a departmental production. Creative responsibilities include designer, technical supervisor, production manager, choreographer, or dramaturge. May be repeated for a maximum of 16 units.

**495A. Practicum in Teaching Theater.** Lecture/laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Study of and practice in teaching theater at college and university level.

**495B. Practicum in Theater Production (2 or 4 units).** Laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Demonstration of competence in theater production through successful completion of a major teaching production assignment. May be repeated for a maximum of 12 units.

**496. Practice of Teaching Theater (2 units).** Discussion. Required once of all teaching assistants or associates in department. Orientation and preparation of graduate students who have responsibility to assist in teaching undergraduate courses in department; discussion of problems common to the teaching experience. May not be applied toward M.A., M.F.A., or Ph.D. May be repeated. S/U grading.

**498. Professional Internship in Theater, Film, and Television (4, 8, or 12 units).** Full- or part-time at a studio or on a professional project. Prerequisites: graduate standing, advanced standing in M.F.A. program, consent of instructor. Internship at various film, television, or theater facilities accentuating creative contribution, organization, and work of professionals in their various specialties. Given only when projects can be scheduled.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596A. Directed Individual Studies: Research (2 to 12 units).** Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

**596B. Directed Individual Studies: Writing (2 to 12 units).** Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

**596C. Directed Individual Studies: Directing (2 to 12 units).** Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

**596D. Directed Individual Studies: Design (2 to 12 units).** Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

**596E. Directed Individual Studies: Acting (2 to 12 units).** Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

**596F. Directed Individual Studies: Production (2 to 12 units).** Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

**597. Preparation for Ph.D. Qualifying Examinations in Theater Arts (2 to 8 units).** May be repeated for a maximum of 12 units.

**598. M.A. Thesis in Theater Arts (2 to 8 units).** Prerequisite: advancement to M.A. candidacy. Research and writing for M.A. thesis. May be repeated for a maximum of 12 units.

**599. Ph.D. Dissertation in Theater Arts (2 to 8 units).** Prerequisite: advancement to Ph.D. candidacy. Research and writing for Ph.D. dissertation. May be repeated for a maximum of 12 units.

## Related Courses in Other Departments

**Classics** 143. Ancient Drama

**Dance** 141. Lighting Design for Dance Theater

144. Costume and Scenic Design Concepts for Dance Theater

**English** 10A, 10B, 10C. English Literature  
90. Shakespeare

112. Children's Literature

135A-135B-135C. Creative Writing: Drama

167. Drama, 1842-1945

**Film and Television** 126. Acting for Film and Television

177. Film and Television Acting Workshop

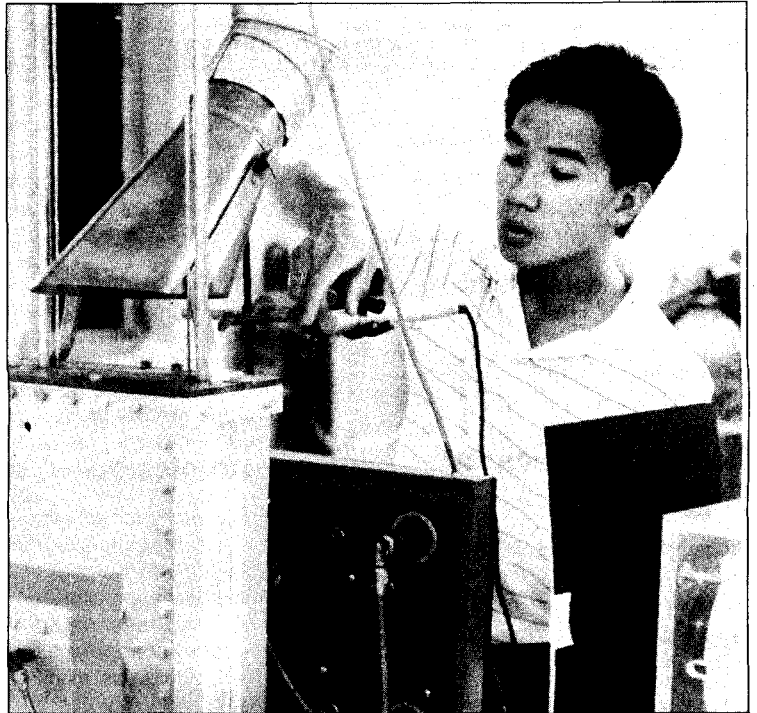
**Humanities** 1A, 1B, 1C. World Literature

**Italian** 122. Italian Theater

**Musicology** 135A-135B-135C. History of Opera

# School of Engineering and Applied Science

A.R. Frank Wazzan, Dean



# 8

For nearly 50 years, the UCLA School of Engineering and Applied Science has enjoyed a top reputation in technological innovation and pursuit of fundamental scientific knowledge. Now, as the pace of technological development quickens, we need to adapt even faster to meet society's needs and maintain U.S. leadership in the marketplace. Engineers must greatly expand their knowledge in their own disciplines and must be able to work as team members across disciplines to solve increasingly complex problems.

We have top faculty, celebrated for distinguished teaching and research, to train and mentor our students. We are particularly strong in computer science and aerospace, electrical, fusion, manufacturing, and mechanical engineering, as well in evolving fields such as optoelectronics, micro machines, industrial ecology, environmental cleanup/waste management, water resources/reclamation, and exotic materials engineering.

UCLA meets the needs of the marketplace by seeing that laboratory breakthroughs translate into products and technologies. We engage in mutually beneficial collaborations — from applied research to shorten development cycles to research on quality/cost control. We nurture innovation and provide a balanced approach to teaching and research as both independent intellectual endeavors and support for business and industry.

Students receive their professional education through classroom investigation and real-world applications. The curriculum includes exposure to the humanities, social sciences, and fine arts and addresses the need to educate men and women about their responsibility to create and manage technology with regard for ethics and human values. The challenges and rewards of a career in engineering have never been greater. If you can commit to a high standard of achievement, we invite you to become a part of the great success story of UCLA.

# School of Engineering and Applied Science

Office of Student Affairs:  
6426 Boelter Hall

Graduate: (310) 825-1704  
Undergraduate: (310) 825-2826

## Bachelor of Science Degrees

Students in the School of Engineering and Applied Science (SEAS) may elect one of the nine four-year curricula listed below.

- (1) Bachelor of Science in Aerospace Engineering
- (2) Bachelor of Science in Chemical Engineering
- (3) Bachelor of Science in Civil Engineering
- (4) Bachelor of Science in Computer Science
- (5) Bachelor of Science in Computer Science and Engineering
- (6) Bachelor of Science in Electrical Engineering
- (7) Bachelor of Science in Engineering with a specialization in bioengineering\*
- (8) Bachelor of Science in Materials Engineering
- (9) Bachelor of Science in Mechanical Engineering

\*Bioengineering is an interdepartmental program listed under Schoolwide Fields, Programs, Courses, and Faculty at the end of the departmental listings.

For the departmental areas of instruction, consult the listings of the individual departments on the following pages or refer to the *Announcement of the UCLA School of Engineering and Applied Science*, available from the Office of Student Affairs, 6426 Boelter Hall.

## Admission

Applicants for admission to the school must satisfy the general admission requirements of the University as outlined in the section entitled "Undergraduate Admission" in Chapter 2. You must select a specific major within the school when applying for admission. In the selection process many elements are considered, including grades, test scores, and academic preparation.

Freshman applicants are strongly advised to take the tests required by the University for admission on or before December 2. Reports of test scores are needed to give full consideration to admission requests; ask the testing agencies to send your results directly to the UCLA Undergraduate Admissions Office.

Applicants are encouraged to apply either at the freshman or junior level. Students who begin their college work at a California community college are expected to remain at the community college to complete the lower division requirements in chemistry, mathematics, physics, and the recommended engineering courses before transferring to the University. Experience indicates that transfer students who have completed the recommended lower division program in engineering at California community colleges are

able to complete the remaining requirements for one of the B.S. degrees in six terms (two academic years) of normal full-time study. Some students who select certain majors, such as computer science and engineering or chemical engineering, may be required to complete additional lower division courses as prerequisites for the major sequence.

## Admission as a Freshman

While many students take their first two years in engineering at a community college, an applicant may qualify for admission to the school in freshman standing. It is anticipated that admission will require that the following subjects be taken when satisfying the University admission requirements:

Algebra .....	2 years
Plane geometry .....	1 year
Trigonometry .....	½ year
Chemistry and physics with laboratory .....	2 years

Freshman applicants whose entire secondary schooling was outside the U.S. must pass, with satisfactory scores, the College Board Scholastic Aptitude Test (verbal and mathematics sections) and Achievement Examinations in English composition, physics, and mathematics before a letter of admission to engineering can be issued. Arrangements to take the tests in another country should be made directly with the Educational Testing Service, 1947 Center Street, Berkeley, CA 94704. Test scores should be forwarded to UCLA.

## Credit for Advanced Placement Tests

You may fulfill part of the school requirements with credit allowed at the time of admission for College Entrance Examination Board (CEEB) Advanced Placement Tests with scores of 5, 4, or 3. Students with Advanced Placement Test credit may exceed the 213-unit maximum by the amount of this credit. Advanced Placement Test credit for freshmen entering in Fall Quarter 1993 fulfills requirements in the School of Engineering and Applied Science as follows:

TEST	CREDIT ALLOWED ON SCHOOL REQUIREMENTS
Art History	8 lower division units toward humanities
Biology	Biology 2 (4 units) plus 4 lower division units free electives
Chemistry	8 lower division units toward general chemistry

## Degrees Offered

Aerospace Engineering .....	B.S., M.S., Ph.D.
Chemical Engineering .....	B.S., M.S., Ph.D.
Civil Engineering .....	B.S., M.S., Ph.D.
Computer Science .....	B.S., M.S., Ph.D.
Computer Science and Engineering .....	B.S.
Electrical Engineering .....	B.S., M.S., Ph.D.
Engineering .....	B.S., M.S., M.Engr., Engr., Ph.D.
Engineering and Applied Science .....	Graduate Certificate of Specialization
Manufacturing Engineering .....	M.S.
Materials Engineering .....	B.S.
Materials Science and Engineering .....	M.S., Ph.D.
Mechanical Engineering .....	B.S., M.S., Ph.D.
Nuclear Engineering .....	M.S., Ph.D.



Computer Science (A Test)†	2 unassigned lower division computer science units
Computer Science (AB Test)†	Computer Science 10C or 11 (4 units)
Economics, Macroeconomics	Score 3 — 4 lower division units free electives Score 4 or 5 — Economics 2 (4 units)
Economics, Microeconomics	Score 3 — 4 lower division units free electives Score 4 or 5 — Economics 1 (4 units)
English, Composition and Literature*	Score 3 — 8 lower division units (4 units humanities, 4 units free electives), Subject A Score 4 — English 3 (4 units), 4 units humanities, Subject A Score 5 — English 3 (4 units), English 4 (4 units), Subject A
English, Language and Composition*	Score 3 — 8 lower division units free electives, Subject A Score 4 — English 3 (4 units), 4 lower division units free electives, Subject A Score 5 — English 3 (4 units), English 4 (4 units), Subject A
Government and Politics, U.S.	Political Science 1 (4 units)
Government and Politics, Comparative	Political Science 50 (4 units toward social sciences)
History, U.S.	Score 3 — 8 lower division units toward social sciences Score 4 or 5 — History 7A-7B (8 lower division units toward social sciences)
History, European	History 1C (4 units) plus European history (4 lower division units toward social sciences)
Language, French	Score 3 — French 4 (8 units free electives) Score 4 — French 5 (8 units free electives) Score 5 — French 6 (8 units free electives)
Language, German	Score 3 — German 3 (8 units free electives) Score 4 — German 4 (8 units free electives) Score 5 — German 5 (8 units free electives)
Language, Latin (Vergil or Catullus/Horace)	4 units toward humanities
Mathematics (AB Test)**	Score 3, 4, or 5 — Mathematics 31A (4 units)
Mathematics (BC Test)**	Score 3, 4, or 5 — Mathematics 31A, 31B (8 units)
Music Literature	8 units toward fine arts
Music Theory***	8 lower division units free electives

### Lower Division Preparation for the Majors

#### Mathematics

Analytic geometry and calculus, 8 units; calculus of several variables, 8 units; matrices and differential equations, 4 units; infinite series, 4 units (total of 24 quarter units minimum)

#### UCLA Equivalent Courses

Mathematics 31A, 31B  
Mathematics 32A, 32B  
Mathematics 33A, 33B

#### Physics

Calculus-based courses in mechanics of solids, vibration, wave motion, sound, fluids, heat, kinetic theory, electricity, magnetism, electromagnetic waves, light and relativity, with laboratory (total of 16 quarter units minimum)

Physics 8A/8AL\*, 8B/8BL\*, 8C/8CL\*, 8D/8DL\*

#### Chemistry\*\*

Two quarters or two semesters of general chemistry with laboratory (total of 10 quarter units minimum)

Chemistry and Biochemistry 11A, 11B/11BL†

#### Engineering

Digital computer programming, using a higher-level language such as FORTRAN, PASCAL, or C (4 units); other courses: statics, dynamics, graphics and descriptive geometry, surveying, circuit analysis, properties of materials, strength of materials, additional chemistry, additional computer science (total of 24 quarter units minimum)

Computer Science 11; Civil Engineering 15A and 15B; Electrical Engineering 5C; Mechanical, Aerospace, and Nuclear Engineering 20; engineering core†† courses; free electives††

#### Additional Courses

Life sciences (4 units), English composition (4 units), humanities/social sciences (total of 16 quarter units minimum)

SEAS general education (GE) courses

\*Depending on curriculum selected; Physics 8D/8DL are not required for the civil engineering, computer science, or computer science and engineering degree.  
\*\*Only Chemistry and Biochemistry 11A is required for the computer science and engineering degree; chemistry is not required for the computer science degree.  
†Chemical engineering curriculum also requires Chemistry and Biochemistry 11C/11CL, 132A, 132B/132BL.  
††See specific undergraduate curricula for core courses, SEAS general education (GE) courses, and free electives, depending on curriculum followed.

Physics (B Test)††	Physics General B — 8 lower division units toward physical sciences (free elective units only)
Physics (C — Mechanics)††	Physics General C — 4 lower division units (credit determined on an individual basis)
Physics (C — Electricity and Magnetism)††	Physics General C — 4 lower division units (credit determined on an individual basis)
Spanish, Language or Literature	Score 3 — Spanish 4 (8 units free electives) Score 4 or 5 — Spanish 5 (8 units free electives)

Some portions of Advanced Placement Test credit are evaluated by corresponding UCLA course number. If you take the equivalent UCLA course, a deduction of UCLA unit credit is made prior to graduation.

If you have completed 36 quarter units at the time of the examination, you will receive no Advanced Placement Test credit.

#### Admission as a Junior

Applicants for admission to the school in junior standing should have completed 21 to 23 courses (84 to 92 quarter units) in good standing, including the following minimum subject requirements:

- (1) Two and one-half courses in chemistry, equivalent to UCLA's Chemistry and Biochemistry 11A, 11B/11BL (only Chemistry and Biochemistry 11A is required for the computer science and engineering degree; the computer science degree does not require chemistry; the chemical engineering curriculum also requires Chemistry and Biochemistry 11C/11CL, 132A, 132B/132BL, which do not need to be taken prior to admission to UCLA);
- (2) six courses in mathematics, equivalent to UCLA's Mathematics 31A, 31B, 32A, 32B, 33A, 33B;
- (3) four courses

† Four units maximum for both tests.  
\* Eight units maximum for Composition and Literature and for Language and Composition.  
\*\* Students who take both examinations receive a maximum of eight units credit. Students who pass the Mathematics AB examination with a score of 3 may still take Mathematics 31A for credit. Students who pass the Mathematics BC examination with a score of 3 may still take Mathematics 31A, 31B for credit.  
\*\*\* If students have credit for both Music Theory and Music Literature, maximum credit is four lower division units for Music Theory and four lower division units for Survey of Music.

†† If students have credit for Physics B and C — Mechanics or Physics B and C — Electricity and Magnetism or Physics B, C — Mechanics, and C — Electricity and Magnetism, maximum credit is four lower division units for Physics B and four lower division units for Physics C. If students have credit for Physics C — Mechanics and C — Electricity and Magnetism, maximum credit is eight lower division units for Physics C.

in physics, equivalent to UCLA's Physics 8A, 8B, 8C, 8D (Physics 8D/8DL are not required for the civil engineering, computer science, or computer science and engineering degree), and physics laboratory courses (8AL, 8BL, 8CL, 8DL), depending on curriculum selected.

It is strongly recommended that transfer students complete a course equivalent to UCLA's English 3 in addition to the minimum admissions requirements.

Students transferring to the school from institutions which offer instruction in engineering subjects in the first two years, particularly California community colleges, are given credit for certain engineering core requirements.

Students who have been admitted to senior standing in the school on the basis of credit from another institution, from UCLA Extension, or from another college or school of the University must complete, after admission, eight upper division courses which satisfy part of their approved major field sequence.

## Degree Requirements

The requirements for the Bachelor of Science degrees in Aerospace Engineering, Chemical Engineering, Civil Engineering, Computer Science, Computer Science and Engineering, Electrical Engineering, Engineering, Materials Engineering, and Mechanical Engineering consist of completing the minimum number of required units (from 180 to 200 units, depending on the curriculum selected), the general University requirements, and the school requirements for scholarship and senior residence. You must also satisfy the curricular requirements for the curriculum you choose to follow.

## University Requirements

University requirements in scholarship, Subject A or English as a Second Language (ESL), and American History and Institutions are discussed in detail in the "Undergraduate Degree Requirements" section in Chapter 2.

## Scholarship and Minimum Progress Requirements

At least a 2.0 grade-point average must be achieved in all upper division University courses offered in satisfaction of the subject and elective requirements of the curriculum. In addition, a 2.0 minimum grade-point average in upper division mathematics, upper division core courses, and the major field is required for graduation.

Full-time undergraduate students in the School of Engineering and Applied Science must complete a minimum of 36 units in three consecutive terms in which they are registered.

## Senior Residence Requirement

Of the last 48 units completed for the bachelor's degree, 36 must be earned in residence in the School of Engineering and Applied Science on this campus. No more than 16 of the 36 units may be completed in Summer Sessions at UCLA.

## Study Lists and Credit Limitations

Study Lists require approval of the dean of the school or a designated representative. It is your responsibility to present Study Lists which reflect satisfactory progress toward the Bachelor of Science degree, according to standards set by the faculty; academic counselors in the Office of Student Affairs are available to help you. Study Lists or programs of study which do not comply with these standards may result in enforced withdrawal from the University or other academic action. You are expected to enroll in at least 12 units each term. If you enroll in less than 12 units, you must obtain approval by petition to the dean prior to enrollment in courses. The normal program is 16 units per term. You may not enroll in more than 18 units per term unless an Excess Unit Petition is approved in advance by the dean.

You must attain a minimum grade of C to satisfy the English 3 requirement, which must be met before you have completed 90 quarter units (a grade of C- does not satisfy this requirement).

After 213 quarter units, enrollment may not normally be continued in the school. You may petition the dean for special permission to continue work required to complete the degree. This regulation does not apply to Departmental Scholars.

After you have completed 105 quarter units (regardless of where these units have been completed), you will not receive unit credit or subject credit for courses completed at a community college.

Credit earned through the College Level Examination Program (CLEP) may not be applied toward the bachelor's degree.

No credit is granted toward the bachelor's degree for college foreign language courses equivalent to quarter levels one and two if the equivalent of level two of the same language was completed with satisfactory grades in high school.

## Credit for Transfer Students

A course in digital computer programming, using a higher-level language such as FORTRAN, PASCAL, or C, satisfies the computer programming requirement. Many sophomore courses in circuit analysis, strength of materials, and properties of materials may satisfy Electrical Engineering 100, Civil Engineering 108, and Materials Science and Engineering 14 requirements respectively. Check with the Office of Student Affairs.

## Curricular Requirements

The curricula for the bachelor's degrees include the following categories, depending on curriculum selected:

(1) Twelve to 16 engineering major field courses (48 to 64 units), depending on curriculum followed.

(2) Four to nine engineering core courses (16 to 36 units), depending on curriculum selected.

(3) Mathematics courses, ranging from four to 12 upper division units; see curricula in individual departments.

(4) SEAS general education (GE) course requirements: (a) English 3, which must be completed with a minimum grade of C within your first 90 units; (b) six courses from the humanities and social sciences, with at least two courses from each category; (c) one life sciences course (this requirement is automatically satisfied for chemical engineering majors).

All lower division courses taken to satisfy items b and c must be selected from the College of Letters and Science GE requirements list (see Chapter 5). Students interested in taking a foreign language to satisfy this requirement must first consult with an academic counselor in the Office of Student Affairs.

For item b, at least three courses must be in the same academic department or must otherwise reflect coherence in subject matter. Of the three, at least two must be upper division courses selected from an approved list available in the Office of Student Affairs.

(5) Free elective courses (four to eight units) may be selected in some programs (see curriculum requirements in individual departments). The free electives may be selected from any courses yielding credit acceptable to the University of California except CLEP and certain remedial courses. However, in programs which include free elective units, it is strongly recommended that you select additional technical courses for some of these units.

(6) The engineering design content of your program must total at least one half-year of design experience.

(7) The engineering science content of your program must include a minimum of one year of engineering science units.

Lists of courses approved to satisfy specific curricular requirements, as well as specifying design and engineering science credit in engineering courses, are available in the Office of Student Affairs.

The aerospace engineering, chemical engineering, civil engineering, computer science and engineering, electrical engineering, materials engineering, and mechanical engineering curricula are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET), the nationally recognized accrediting body for engineering programs.

## Advising and Program Planning

As a new undergraduate, you must have your course of study approved by an academic counselor. After the first term, curricular and career advising is accomplished on a formal basis. You are assigned a faculty adviser in

your particular specialization in your sophomore year or earlier.

In addition you are assigned, by major, to an academic counselor in the Office of Student Affairs who provides you with advice regarding general requirements for the degrees and University and school regulations and procedures. It is your responsibility to periodically meet with your academic counselor in the Office of Student Affairs, as well as with your faculty adviser, to discuss curriculum requirements, programs of study, and any other academic matters of concern.

You may use the curriculum in effect when you begin full-time continuous study in engineering at UCLA, or you may select the curriculum in the *UCLA General Catalog* in effect at graduation. California community college transfers may also select the curriculum in the catalog in effect at the time they began their community college work in an engineering program, providing attendance has been continuous since that time.

Attend the Conference on Planning Electives conducted by the School of Engineering and Applied Science to help you plan your curriculum. The conference is held during the third week of each term. For time and place, consult the Office of Student Affairs.

The Program Proposal form must be submitted for approval by the associate dean, Student Affairs, Office of Student Affairs, during the third term of the sophomore year. The deadline is announced each term in the school's *Undergraduate Enrollment Instructions* brochure.

Academic counselors in the Office of Student Affairs are available to assist you with University procedures and to answer any questions you may have in regard to general requirements. Pay them a visit.

### Passed/Not Passed Grading

You may take one course per term on a Passed/Not Passed basis if you are in good academic standing and are enrolled in at least three and one-half courses (14 units) for the term. Only SEAS general education courses (with the exception of English 3) and free electives may be taken on a Passed/Not Passed basis. For more details on P/NP grading, see "Units and Grading Policy" in Chapter 4 or consult the Office of Student Affairs.

## Honors

### Departmental Scholars

If you are an exceptionally promising junior or senior, you may be nominated as a Departmental Scholar to pursue bachelor's and master's degree programs simultaneously. See "Academic Excellence" in Chapter 2 and the *Announcement of the UCLA School of Engineering and Applied Science* for details.

### Dean's Honors List

Students following the engineering curricula are eligible to be named to the Dean's Honors List each term. Minimum requirements are a course load of 16 units (12 units of letter grade) with a grade-point average equal to or greater than 3.7.

### Honors at Graduation

Students who have achieved scholastic distinction may be awarded the bachelor's degree with honors. Students eligible for University honors at graduation must have completed 90 or more units (for a letter grade) at the University of California and must have attained a grade-point average which places them in the top five percent of the school (GPA of 3.774 or better) for *summa cum laude*, the next five percent (GPA of 3.638 or better) for *magna cum laude*, and the next 10 percent (GPA of 3.455 or better) for *cum laude*.

Based on grades achieved in upper division courses, engineering students must have a 3.774 grade-point average for *summa cum laude*, a 3.638 for *magna cum laude*, and a 3.455 for *cum laude*. For all designations of honors, you must have a minimum 3.25 grade-point average in your major field courses. To be eligible for an award, you should have completed at least 80 upper division units at the University of California.

### Tau Beta Pi

The UCLA chapter of *Tau Beta Pi*, the national engineering honor society, encourages high scholarship, provides volunteer tutors, and offers many services and programs "to foster a spirit of liberal culture in engineering colleges."

## Special Programs and Activities

### Extracurricular Activities

The faculty strongly encourages students to participate in the many extracurricular activities available on campus, especially those of most relevance to engineering. Among these are the student engineering society (the Engineering Society, University of California), student publications, and programs of the many technical and professional engineering societies in the Los Angeles area.

The student body takes an active part in shaping policies of the school through elected student representatives on the school's Executive Committee.

### Women in Engineering

Women make up approximately 20 percent of the undergraduate and 12 percent of the graduate enrollment in the School of Engineering and Applied Science. Today's opportunities for women in engineering are excellent, as both employers and educators try to change the image of engineering as a "males only" field. Women en-

gineers are in great demand in all fields of engineering.

The Society of Women Engineers (SWE), recognizing that women in engineering are still a minority, has established a UCLA student chapter which sponsors field trips and engineering-related speakers (often professional women) to introduce the various options available to women engineers. The UCLA chapter of SWE, in conjunction with other Los Angeles schools, also publishes an annual résumé book to aid women students in finding jobs and presents a career day for women high school students.

### Continuing Education

Continuing education in engineering is developed and administered by the UCLA Extension (UNEX) Department of Engineering, Information Systems, and Technical Management in close cooperation with the School of Engineering and Applied Science. The department offers evening classes, short courses, certificate programs, special events, and on-site education and training. The office (515 UNEX, 10995 Le Conte Avenue) is open Monday through Friday. Call (310) 825-4100 for engineering and information systems class programs, (310) 825-3344 for short course programs, (310) 825-0328 for environmental sciences, and (310) 825-3858 for technical management programs. The fax number is (310) 206-2815.

## Graduate Study

### Admission

In addition to meeting the requirements of the Graduate Division, applicants to the graduate engineering programs are required to take the General Test of the Graduate Record Examination (GRE). In some cases applicants are also required to take the GRE Subject Test in Engineering, Mathematics, or a related area. Applicants for the graduate computer science programs are required to take the GRE General Test and Subject Test in Mathematics or Computer Science. Specific information about the GRE may be obtained from the department of interest.

Students entering the Engineer/Ph.D. program normally are expected to have completed the requirements for the master's degree with at least a 3.25 grade-point average and to have demonstrated creative ability. Normally the M.S. degree is required for admission to the Ph.D. program. Exceptional students, however, can be admitted to the Ph.D. program without having an M.S. degree.

Graduate students without adequate preparation may be admitted provisionally and may be required to take additional coursework which may not be applied toward the degree. After you arrive at UCLA, the adviser will help you plan a program which will remedy any such deficiencies.

For information on the proficiency in English requirements for international graduate students, refer to "Graduate Admission" in Chapter 3.

Admission forms, including a departmental supplement to the application, may be obtained by writing to the department in which you are interested, School of Engineering and Applied Science, UCLA, Los Angeles, CA 90024.

### Undergraduate Courses

No lower division courses may be applied toward graduate degrees. In addition, the following upper division courses are not applicable toward graduate degrees: Chemical Engineering M105A, 199, Civil Engineering 106A, 108, M115, 199, Computer Science 152A, 152B, 168L, 171L, 199, Electrical Engineering 100, 101, 102, 103, 110L, 199, Materials Science and Engineering 199, Mechanical, Aerospace, and Nuclear Engineering 102, 103, M105A, 105D, M109A, 199.

Individual departments within the school may impose certain restrictions on the applicability of other undergraduate courses toward graduate degrees. Consult with your graduate adviser on departmental requirements and restrictions.

## Master of Science Degrees

### Major Fields or Subdisciplines

The M.S. program is centered around one major field. The major fields and subdisciplines offered at the M.S. level in most cases parallel those listed below for the Ph.D. program. There are some differences (e.g., manufacturing engineering in the Department of Mechanical, Aerospace, and Nuclear Engineering is offered only at the M.S. level). Contact the department concerned regarding possible differences between the M.S. and Ph.D. fields and subdisciplines. You are free to propose to the school any other field of study, with the support of your adviser.

### Course Requirements

A total of nine courses is required for the M.S. degrees, including a minimum of five graduate courses. (Some fields require more than five; obtain specific information from your department of interest.) A majority of the total formal course requirement and of the graduate course requirement must consist of courses in the School of Engineering and Applied Science. In the thesis plan, seven of the nine courses must be formal courses, including at least four from the 200 series. The remaining two courses may be 598 courses involving work on the thesis. In the comprehensive examination plan, at least five of the nine courses must be in the 200 series; the remaining four courses may be either 200-series graduate or upper division undergraduate courses. No 500-series courses may be applied toward the comprehensive examination plan requirements.

### Thesis Plan

The thesis must either describe some original piece of research that you have done, usually but not necessarily under the supervision of the thesis committee, or else provide a critical exposition of some topic in your major field of study. You would normally start to plan the thesis at least one year before the award of the M.S. degree is expected. There is no examination under the thesis plan.

### Comprehensive Examination Plan

The comprehensive examination, which is offered every term, is required in written form only. Your comprehensive examining committee may conduct an oral query after review of the written examination. In case of failure, you may be reexamined once with the consent of your departmental graduate adviser.

### Cooperative Degree Programs

The School of Engineering and Applied Science has established two joint degree programs with other schools and departments on campus which allow you to earn two master's degrees simultaneously: the M.B.A./M.S.-Computer Science and the M.A.-Latin American Studies/M.S.-Engineering. Contact the Office of Student Affairs for details.

## Master of Engineering Degree

The Master of Engineering (M.Engr.) degree is granted to graduates of the Engineering Executive Program, a two-year work-study program consisting of graduate-level professional courses in the management of technological enterprises. For full details, write to the Office of Student Affairs, School of Engineering and Applied Science, 6426 Boelter Hall, UCLA, Los Angeles, CA 90024-1601, (310) 825-1704.

## Engineer Degree

The School of Engineering and Applied Science offers an Engineer (Engr.) degree at a level equivalent to completion of preliminaries in the Ph.D. program. The Engineer degree represents considerable advanced training and competence in the engineering field but does not require the research effort involved in a Ph.D. dissertation.

Requirements for the Engineer degree are identical to those of the Ph.D. degree up to and including the oral preliminary examination, except that the Engineer degree is based on coursework. The minimum requirement is 15 (at least nine graduate) courses beyond the bachelor's degree, with at least six courses in the major field (minimum of four graduate courses) and at least three in each minor field (minimum of two graduate courses in each).

The Ph.D. and Engineer degree programs are administered interchangeably in the sense that a student in the Ph.D. program may exit with an Engineer degree or even pick up the Engineer degree enroute to the Ph.D. degree; similarly, a student in the Engineer degree program may continue for the Ph.D. after receiving the Engineer degree. The time spent in either of the two programs may also be applied toward the minimum residence requirement and time limitation for the other program.

## Ph.D. Degrees

### Major Fields or Subdisciplines\*

**Chemical Engineering Department** — Chemical engineering.

**Civil Engineering Department** — Geotechnical engineering, structures (structural mechanics and earthquake engineering), water resources and environmental engineering.

**Computer Science Department** — Artificial intelligence, computer network modeling and analysis, computer science theory, computer system architecture, programming languages and systems (software systems), scientific computing (biomedical systems, physical systems).

**Electrical Engineering Department** — Applied mathematics (established minor field only), applied plasma physics and fusion engineering, communications and telecommunications engineering, control systems, electromagnetics, integrated circuits and systems, operations research, quantum electronics, signal processing, solid-state electronics.

**Materials Science and Engineering Department** — Ceramics and ceramics processing, materials science, mechanical metallurgy, metallurgy and metals processing.

**Mechanical, Aerospace, and Nuclear Engineering Department** — Applied dynamic systems control, applied mathematics (established minor field only), applied plasma physics and fusion engineering, dynamics, fluid mechanics, heat and mass transfer, nuclear science and engineering, structural and solid mechanics.

**Schoolwide Fields and Programs** — For information regarding biocybernetics and man/machine/environment systems, contact the Office of Student Affairs, School of Engineering and Applied Science, 6426 Boelter Hall, UCLA, Los Angeles, CA 90024-1601, (310) 825-1704.

### Requirements

All candidates must fulfill the minimum requirements of the Graduate Division (see "Requirements for Graduate Degrees" in Chapter

\*You may propose to the school any other field of study with the support of your adviser. Instructions on the definition of acceptable ad hoc fields and procedures for their approval are available in each department office.

3). Major and minor fields may have additional course and examination requirements. For further information, contact the individual departments.

## Graduate Certificate of Specialization

A certificate of specialization is available in all areas, except computer science, offered by the School of Engineering and Applied Science. Requirements for admission are the same as for the M.S. degree.

Each graduate certificate program consists of five 100- or 200-series courses, at least two of which must be at the graduate level. No work completed for any previously awarded degree or credential may be applied toward the certificate. Successful completion of a certificate program requires an overall minimum B average in all courses applicable to the certificate. In addition, graduate certificate candidates are required to maintain a minimum B average in 200-series courses used in the certificate program. A minimum of three terms of academic residence is required. The time limitation for completing the requirements of a certificate program is two calendar years. Details regarding the certificate programs may be obtained from each department office.

Courses completed for a Certificate of Specialization in the School of Engineering and Applied Science may subsequently be applied toward master's and/or doctoral degrees.

## Chemical Engineering

5531 Boelter Hall, (310) 825-2046,  
825-2491

### Professors

Yoram Cohen, Ph.D.  
Traugott H.K. Frederking, Ph.D.  
Sheldon K. Friedlander, Ph.D. (*Ralph M. Parsons Professor of Chemical Engineering*)  
Ken Nobe, Ph.D. (*Distinguished Teaching Award*)  
Selim M. Senkan, Ph.D.  
Owen I. Smith, Ph.D.  
Vincent L. Vilker, Ph.D.  
A.R. Frank Wazzan, Ph.D., *Dean*  
Eldon L. Knuth, Ph.D., *Emeritus*  
Lawrence B. Robinson, Ph.D., *Emeritus*  
William D. Van Vorst, Ph.D., *Emeritus*

### Associate Professors

David T. Allen, Ph.D., *Chair*  
Robert F. Hicks, Ph.D.  
Vasilios Manousiouthakis, Ph.D.

### Assistant Professor

Harold G. Monbouquette, Ph.D.

### Lecturer

Dwight A. Landis, M.S.

## Scope and Objectives

The Department of Chemical Engineering conducts active undergraduate and graduate programs of teaching and research in the areas of thermodynamics, mass transfer, catalysis, semiconductor materials processing, electrochemistry and corrosion, high-temperature chemical kinetics and reaction engineering, combustion science, environmental reaction engineering, cryogenics and low-temperature processes, biochemical and biomedical engineering, computer-aided process design and control, particle technology, pollution control, and polymer engineering. Students are trained in the fundamental principles of these fields while learning a sensitivity to society's needs — a crucial combination in addressing the question of how industry can grow and innovate in an era of economic, environmental, and energy constraints.

The undergraduate curriculum leads to a B.S. in Chemical Engineering, is accredited by ABET and AIChE, and includes bioengineering and environmental options. The department also offers graduate courses and research leading to M.S. and Ph.D. degrees. Both graduate and undergraduate programs closely relate teaching and research to important industrial problems.

## Bachelor of Science in Chemical Engineering

The goal of the ABET-accredited chemical engineering curriculum is to provide a high quality, professionally oriented education in modern chemical engineering. The bioengineering and environmental options exist as subsets of courses within the accredited curriculum. Balance is sought between science and engineering practice.

### The Major

Course requirements are as follows (193 minimum units required):

- (1) Three general engineering courses: Chemical Engineering M105A, Civil Engineering 108, Electrical Engineering 100.
- (2) Chemical Engineering 100, 101A, 101B, 101C, 102, 103, 104A, 104B, 106, 107, 108A, 108B, 109; Chemistry and Biochemistry 113A, 132A, 132B/132BL.
- (3) Two elective courses from Chemical Engineering 110, C111, 112, 113, C115, C116, C118, 119, C125, C140 and three upper division chemistry elective courses (except Chemistry and Biochemistry 110A). An upper division life or physical sciences course may be substituted for one chemistry elective with the approval of your faculty adviser.
- (4) Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL; Civil Engineering 15A and 15B or Mechanical, Aerospace, and Nuclear

Engineering 20; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A, 8B/8BL, 8C/8CL, 8D/8DL.

(5) SEAS general education (GE) course requirements — see "Curricular Requirements" (item 4) earlier in this chapter for details.

### Bioengineering Option

Course requirements are as follows (200 minimum units required):

- (1) Three general engineering courses: Chemical Engineering M105A, Civil Engineering 108, Electrical Engineering 100.
- (2) Chemical Engineering 100, 101A, 101B, 101C, 102, 103, 104A, 104B, 106, 107, 108A, 108B, 109; Biology 100A or 108 or Microbiology and Molecular Genetics 101; Chemistry and Biochemistry 132A, 132B/132BL, 153A, 153L, 156.
- (3) Two chemical engineering elective courses (C115 and C125 are recommended; other chemical engineering electives may be selected in consultation with your adviser); one upper division biology elective selected from Biology C141, C149, 157, C174A through C174F (any two), M185A or one upper division microbiology elective selected from Microbiology and Molecular Genetics 102, C104A/C104B, C111, C112, C119, 154.
- (4) Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL; Biology 5, 9; Civil Engineering 15A and 15B or Mechanical, Aerospace, and Nuclear Engineering 20; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A, 8B, 8C, 8D.
- (5) SEAS general education (GE) course requirements — see "Curricular Requirements" (item 4) earlier in this chapter for details.

### Environmental Option

Course requirements are as follows (198 minimum units required):

- (1) Three general engineering courses: Chemical Engineering M105A, Civil Engineering 108, Electrical Engineering 100.
- (2) Chemical Engineering 100, 101A, 101B, 101C, 102, 103, 104A, 104B, 106, 107, 108A, 108B, 109; Chemistry and Biochemistry 113A, 132A, 132B/132BL.
- (3) Two elective courses from Chemical Engineering 113, C118, 119, C140 (another chemical engineering elective may be substituted with approval of your faculty adviser) and three advanced chemistry electives in the environmental field from Atmospheric Sciences M203A, Biology M127, Chemistry and Biochemistry 103, Environmental Health Sciences 240, 241, 261 (other advanced chemistry courses may be selected in consultation with your faculty adviser).
- (4) Atmospheric Sciences 2A; Chemistry and Biochemistry 11A, 11B/11BL, 11C/11CL; Civil Engineering 15A and 15B or Mechanical, Aero-

space, and Nuclear Engineering 20; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A, 8B/8BL, 8C/8CL, 8D/8DL.

(5) SEAS general education (GE) course requirements — see "Curricular Requirements" (item 4) earlier in this chapter for details.

## Graduate Study

For information on graduate admission to the chemical engineering program and requirements for the M.S. and Ph.D. degrees, see "Graduate Study" at the beginning of this chapter.

## Lower Division Course

**2. Technology and the Environment.** Lecture, four hours; outside study, eight hours. Natural and anthropogenic flows of materials at global and regional scales. Case studies of natural cycles include global warming (CO<sub>2</sub> cycles), stratospheric ozone depletion (chlorine and ozone cycles), and global nitrogen cycles. Flow of materials in industrial economics compared and contrasted with natural flows; presentation of life-cycle methods for evaluating environmental impact of processes and products. Mr. Allen (Sp)

## Upper Division Courses

**100. Introduction to Chemical Engineering.** Prerequisites: Mathematics 32B (may be taken concurrently), Chemistry 11C/11CL, Physics 8B. Introduction to analysis and design of industrial chemical processes. Material and energy balances. Mr. Monbouquette (F)

**101A. Momentum Transfer.** Prerequisites: course M105A, Mathematics 33A, 33B. Introduction to analysis of fluid flow in systems of interest to chemical engineering practice. Fundamentals of momentum transport, Newton law of viscosity, Navier/Stokes equations, interphase momentum transport and friction factors, flows in conduits and around submerged objects. Mr. Cohen (F)

**101B. Heat Transfer.** Lecture, four hours; discussion, one hour. Prerequisite: course 101A. Introduction to analysis of heat transfer in systems of interest to chemical engineering practice. Fundamentals of thermal energy transport, Fourier law of heat conduction, forced and free convection, radiation, interphase heat transfer, heat exchanger analysis. Mr. Smith (W)

**101C. Mass Transfer.** Lecture, four hours; discussion, one hour. Prerequisites: courses 100, 101B, 102. Introduction to analysis of mass transfer in systems of interest to chemical engineering practice. Fundamentals of mass species transport, Fick law of diffusion, diffusion in chemically reacting flows, interphase mass transfer, multicomponent systems. Mr. Hicks (Sp)

**102. Chemical Engineering Thermodynamics.** Prerequisites: courses 100, M105A. Thermodynamic properties of pure substances and solutions. Phase equilibrium. Chemical reaction equilibrium. Mr. Cohen (W)

**103. Separation Processes.** Prerequisites: courses 100, 101B, 102. Application of principles of heat, mass, and momentum transport to design and operation of separation processes such as distillation, gas absorption, filtration, and reverse osmosis. Mr. Vicker (Sp)

**104A. Chemical Engineering Laboratory I (6 units).** Lecture, two hours; laboratory, eight hours; outside study, four hours; other, four hours. Prerequisites: courses 100, 101B, 102. Measurements of temperature, pressure, flow rate, viscosity, and fluid composition in chemical processes. Methods of data acquisition, equipment selection and fabrication, and laboratory safety. Development of written and oral communication skills. Mr. Hicks (F,Sp)

**104B. Chemical Engineering Laboratory II (6 units).** Lecture, two hours; laboratory, eight hours; outside study, four hours; other, four hours. Prerequisites: courses 101C, 103, 104A. Course consists of four experiments in chemical engineering unit operations, each of two weeks duration. Students present their results both written and orally. Written report includes sections on theory, experimental procedures, scaleup and process design, and error analysis. Mr. Senkan (F,W)

**M105A. Introduction to Engineering Thermodynamics.** (Same as Mechanical, Aerospace, and Nuclear Engineering M105A.) Lecture, four hours; recitation, one hour. Prerequisites: Physics 8B, Mathematics 32B. Phenomenological thermodynamics. Concepts of equilibrium, temperature, and reversibility. First law and concept of energy; second law and concept of entropy. Equations of state and thermodynamic properties. Engineering applications of these principles in analysis and design of closed and open systems. Mr. Nobe (F,W,Sp)

**106. Chemical Reaction Engineering.** Prerequisites: courses 100, 101C, 102. Fundamentals of chemical kinetics and catalysis. Introduction to analysis and design of homogeneous and heterogeneous chemical reactors. Mr. Allen (F)

**107. Process Dynamics and Control.** Prerequisites: courses 101C, 103, 106. Principles of dynamics modeling and start-up behavior of chemical engineering processes. Chemical process control elements. Design and applications of chemical process computer control. Mr. Manousiouthakis (W)

**108A. Process Economics and Analysis.** Prerequisites: courses 103, 104B, 106. Integration of chemical engineering fundamentals such as transport phenomena, thermodynamics, separation operations, and reaction engineering and simple economic principles for purpose of designing chemical processes and evaluating alternatives. Mr. Manousiouthakis (W)

**108B. Chemical Process Computer-Aided Design and Analysis.** Prerequisites: courses 103, 106, 108A, Computer Science 10F. Introduction to application of some mathematical and computing methods to chemical engineering design problems; use of simulation programs as an automated method of performing steady state material and energy balance calculations. Mr. Allen (Sp)

**109. Mathematical Methods in Chemical Engineering.** Lecture, four hours; recitation, two hours; outside study, six hours. Prerequisite: working knowledge of FORTRAN programming. Discussion of theory and applications of mathematics to chemical engineering problems, with focus on numerical and analytical techniques encompassing linear and nonlinear algebraic equations, finite difference methods, and ordinary and partial differential equations. Mr. Smith (F)

**110. Intermediate Engineering Thermodynamics.** Lecture, four hours; outside study, eight hours. Prerequisite: course 102. Principles and engineering applications of statistical and phenomenological thermodynamics. Determination of partition function in terms of simple molecular models and spectroscopic data; nonideal gases; phase transitions and adsorption; nonequilibrium thermodynamics and coupled transport processes. Mr. Nobe (Sp)

**C111. Cryogenics and Low-Temperature Processes.** (Formerly numbered 111.) Lecture, four hours; outside study, eight hours. Prerequisites: courses 102 (or Materials Science and Engineering 130), M105A. Fundamentals of cryogenics and cryoengineering science pertaining to industrial low-temperature processes. Basic approaches to analysis of cryofluids and envelopes needed for operation of cryogenic systems; low-temperature behavior of matter, optimization of cryosystems and other special conditions. Concurrently scheduled with course C211. Mr. Frederking (W)

**112. Polymer Processes.** Prerequisites: course 101A, Chemistry 132A. Formation of polymers, criteria for selecting a reaction scheme, polymerization techniques. Polymer characterization. Mechanical properties. Rheology of macromolecules, modeling and experimental methods to characterize non-Newtonian fluids. Polymer process engineering. Mr. Cohen, Mr. Monbouquette (Sp)

**113. Air Pollution Engineering.** Lecture, four hours; preparation, two hours; outside study, six hours. Prerequisites: courses 101C and 102, or consent of instructor. Integrated approach to air pollution, including concentrations of atmospheric pollutants, air pollution standards, air pollution sources and control technology, and relationship of air quality to emission sources. Links air pollution to multimedia environmental assessment. Mr. Friedlander (F)

**C114. Electrochemical Processes and Corrosion.** (Formerly numbered 114.) Lecture, four hours; other, eight hours. Prerequisites: courses M105A, and 102 or Materials Science and Engineering 130. Fundamentals of electrochemistry and engineering applications to industrial electrochemical processes and metallic corrosion. Primary emphasis on fundamental approach to analysis of electrochemical and corrosion processes. Specific topics include corrosion of metals and semiconductors, electrochemical metal and semiconductor surface finishing, passivity, electrodeposition, electroless deposition, batteries and fuel cells, electrosynthesis and bioelectrochemical processes. May be concurrently scheduled with course C214. Mr. Nobe (F)

**C115. Biochemical Reaction Engineering.** Lecture, four hours; outside study, eight hours. Prerequisites: courses 101C and 106, or Chemistry 156, or consent of instructor. Use of previously learned concepts of biophysical chemistry, thermodynamics, transport phenomena, and reaction kinetics to develop tools needed for technical design and economic analysis of biological reactors. May be concurrently scheduled with course C215. Mr. Monbouquette, Mr. Vilker (W)

**C116. Surface and Interface Engineering.** Prerequisites: courses 101C, 102, 106. Description of thermodynamics and kinetics of surface phenomena: nucleation, growth, and coalescence of films; adsorption, desorption, diffusion, and reaction of gases on surfaces. Application of these concepts to electronic materials processing and catalyst design. May be concurrently scheduled with course C216. Mr. Hicks (F)

**C118. Multimedia Environmental Assessment.** Lecture, four hours; preparation, two hours; outside study, six hours. Prerequisites: courses 101C and 102, or consent of instructor. Pollutant sources, estimation of source releases, waste minimization, transport and fate of chemical pollutants in environment, intermedia transfers to pollutants, multimedia modeling of chemical partitioning in environment, exposure assessment and fundamentals of risk assessment, risk reduction strategies. Concurrently scheduled with course C218. Mr. Cohen (W)

**119. Pollution Prevention for Chemical Processes.** Lecture, four hours; recitation, one hour; preparation/outside study, seven hours. Prerequisite: course 108A or consent of instructor. Waste audits and emission inventories, process design and process flowsheeting for waste minimization, economic analysis of environmental projects, life-cycle analyses. Mr. Allen (Sp)

**C125. Bioprocesses and Bioprocess Engineering.** Lecture, four hours; outside study, eight hours. Prerequisites: courses 101C and 103, or Chemistry 156, or consent of instructor. Separation strategies, unit operations, and economic factors used to design processes for isolating and purifying materials like whole cells, enzymes, food additives, or pharmaceuticals that are products in biological reactors. Concurrently scheduled with course C225. Mr. Monbouquette, Mr. Vilker (Sp)

**C140. Fundamentals of Aerosol Technology.** Lecture, four hours; outside study, eight hours. Prerequisite: course 101C. Technology of particle/gas systems with applications to gas cleaning, commercial production of fine particles, and catalysis. Particle transport and deposition, optical properties, experimental methods, dynamics and control of particle formation processes. Concurrently scheduled with course C240. Mr. Friedlander (F, alternate years)

**199. Special Studies (2 to 8 units).** Prerequisites: senior standing, consent of instructor. Individual investigation of selected topic to be arranged with a faculty member. Enrollment request forms available in department office. Occasional field trips may be arranged. May be repeated for credit. (F,W,Sp)

## Graduate Courses

**200. Advanced Engineering Thermodynamics.** Prerequisite: course 102 or equivalent. Phenomenological and statistical thermodynamics of chemical and physical systems with engineering applications. Presentation of role of atomic and molecular spectra and intermolecular forces in interpretation of thermodynamic properties of gases, liquids, solids, and plasmas. Mr. Nobe (F)

**210. Advanced Chemical Reaction Engineering.** Prerequisites: courses 101C, 106, or equivalent. Principles of chemical reactor analysis and design. Particular emphasis on simultaneous effects of chemical reaction and mass transfer on noncatalytic and catalytic reactions in fixed and fluidized beds. Mr. Senkan (W)

**C211. Cryogenics and Low-Temperature Processes.** (Formerly numbered 211.) Lecture, four hours; outside study, eight hours. Prerequisites: courses 102 (or Materials Science and Engineering 130), M105A. Fundamentals of cryogenics and cryo-engineering science pertaining to industrial low-temperature processes. Basic approaches to analysis of cryofluids and envelopes needed for operation of cryogenic systems; low-temperature behavior of matter, optimization of cryosystems and other special conditions. Concurrently scheduled with course C111. Mr. Frederking (W)

**C214. Electrochemical Processes and Corrosion.** Lecture, four hours; other, eight hours. Prerequisites: courses M105A, and 102 or Materials Science and Engineering 130. Fundamentals of electrochemistry and engineering applications to industrial electrochemical processes and metallic corrosion. Primary emphasis on fundamental approach to analysis of electrochemical and corrosion processes. Specific topics include corrosion of metals and semiconductors, electrochemical metal and semiconductor surface finishing, passivity, electrodeposition, electroless deposition, batteries and fuel cells, electrosynthesis and bioelectrochemical processes. May be concurrently scheduled with course C114. Mr. Nobe (F)

**C215. Biochemical Reaction Engineering.** Lecture, four hours; outside study, eight hours. Prerequisites: courses 101C and 106, or Chemistry 156, or consent of instructor. Use of previously learned concepts of biophysical chemistry, thermodynamics, transport phenomena, and reaction kinetics to develop tools needed for technical design and economic analysis of biological reactors. May be concurrently scheduled with course C115. Mr. Monbouquette, Mr. Vilker (W)

**C216. Surface and Interface Engineering.** Prerequisites: courses 101C, 102, 106. Description of thermodynamics and kinetics of surface phenomena: nucleation, growth, and coalescence of films; adsorption, desorption, diffusion, and reaction of gases on surfaces. Application of these concepts to electronic materials processing and catalyst design. May be concurrently scheduled with course C116. Mr. Hicks (F)

**217. Electrochemical Engineering.** Prerequisite: course C114. Transport phenomena in electrochemical systems; relationships between molecular transport, convection, and electrode kinetics, along with applications to industrial electrochemistry, fuel cell design, and modern battery technology. Mr. Nobe (F)

**C218. Multimedia Environmental Assessment.** Lecture, four hours; preparation, two hours; outside study, six hours. Prerequisites: courses 101C and 102, or consent of instructor. Pollutant sources, estimation of source releases, waste minimization, transport and fate of chemical pollutants in environment, intermedia transfers to pollutants, multimedia modeling of chemical partitioning in environment, exposure assessment and fundamentals of risk assessment, risk reduction strategies. Concurrently scheduled with course C118. Mr. Cohen (W)

**220. Advanced Mass Transfer.** Prerequisite: course 101C or equivalent. Advanced treatment of mass transfer, with applications to industrial separation processes, gas cleaning, pulmonary bioengineering, controlled release systems, and reactor design; molecular and constitutive theories of diffusion, interfacial transport, membrane transport, convective mass transfer, concentration boundary layers, turbulent transport. Mr. Friedlander (F)

**C225. Bioprocesses and Bioprocess Engineering.** Lecture, four hours; outside study, eight hours. Prerequisites: courses 101C and 103, or Chemistry 156, or consent of instructor. Separation strategies, unit operations, and economic factors used to design processes for isolating and purifying materials like whole cells, enzymes, food additives, or pharmaceuticals that are products in biological reactors. Concurrently scheduled with course C125. Mr. Monbouquette, Mr. Vilker (Sp)

**230. Reaction Kinetics.** Prerequisites: courses 106, 200, or equivalent. Macroscopic descriptions: reaction rates, relaxation times, thermodynamic correlations of reaction rate constants. Molecular descriptions: kinetic theory of gases, models of elementary processes. Applications: absorption and dispersion measurements, unimolecular reactions, photochemical reactions, hydrocarbon pyrolysis and oxidation, explosions, polymerization. Mr. Senkan, Mr. Smith (Sp)

**231. Molecular Dynamics.** Prerequisite: course 106 or 110. Analysis and design of molecular-beam systems. Molecular-beam sampling of reactive mixtures in combustion chambers or gas jets. Molecular-beam studies of gas-surface interactions, including energy accommodations and heterogeneous reactions. Applications to air pollution control and to catalysis. Mr. Allen (W)

**232. Combustion Processes.** Prerequisite: course 106, 200, or Mechanical, Aerospace, and Nuclear Engineering 132A. Fundamentals: change equations for multicomponent reactive mixtures, rate laws. Applications: combustion, including burning of (1) premixed gases or (2) condensed fuels. Detonation. Sound absorption and dispersion. Mr. Senkan, Mr. Smith (Sp)

**M233. Principles, Practices, and Policies in Biotechnology (2 units).** (Same as Biological Chemistry M233, Biology M233, Chemistry M233, Microbiology M233, Microbiology and Immunology M233, and Radiological Sciences M233.) Prerequisite: graduate standing or consent of instructor. Presentation of technologies, regulatory practices, and policies required for product development and review of current opportunities for new technology development. Topics include fermentation processes, pilot and large-scale bioprocess technologies, scaleup strategies, industrial recombinant DNA processes, hybridomas, protein engineering, peptide mimetics and rational drug design, medical and microscopic imaging, and intellectual property issues. S/U or letter grading. Mr. Fox, Ms. Morrison

**C240. Fundamentals of Aerosol Technology.** (Formerly numbered 240.) Lecture, four hours; outside study, eight hours. Prerequisite: course 101C. Technology of particle/gas systems with applications to gas cleaning, commercial production of fine particles, and catalysis. Particle transport and deposition, optical properties, experimental methods, dynamics and control of particle formation processes. Concurrently scheduled with course C140. Mr. Friedlander (F, alternate years)

**250. Computer-Aided Chemical Process Design.** Prerequisite: course 108B. Application of optimization methods in chemical process design; computer aids in process engineering; process modeling; systematic flowsheet invention; process synthesis; optimal design and operation of large-scale chemical processing systems. Mr. Manousiouthakis (F)

**260. Non-Newtonian Fluid Mechanics.** Prerequisite: course M105A. Principles of non-Newtonian fluid mechanics. Stress constitutive equations. Rheology of polymeric liquids and dispersed systems. Applications in viscometry, polymer processing, biorheology, oil recovery, and drag reduction. Mr. Cohen (Sp)

**290A-290Z. Special Topics (2 to 4 units each).** Prerequisites: consent of instructor, additional prerequisites for each offering as announced in advance by department. Advanced and current study of one or more aspects of chemical engineering, such as chemical process dynamics and control, fuel cells and batteries, membrane transport, advanced chemical engineering analysis, polymers, optimization in chemical process design. May be repeated for credit with topic change. S/U or letter grading:

**M290U. Toxics Reduction: Science, Engineering, and Policy Issues.** (Same as Architecture and Urban Planning M262A and Environmental Health Sciences M249.) Lecture, three hours. Prerequisites: Architecture and Urban Planning 260A and 260B, or consent of instructor. Public health experts, industrial engineers, and planners are being asked to assess risks biologically active chemicals present and to take such risks into account in planning process. Examination of potential for toxics reduction and current state of government and industry activities in this area.

**298A-298Z. Research Seminars (2 to 4 units each).** Prerequisites: consent of instructor, additional prerequisites for each offering as announced in advance by department. Lectures, discussions, student presentations, and projects in areas of current interest. May be repeated for credit. S/U grading. (F,W,Sp)

**299. Departmental Seminar (2 units).** Prerequisite: graduate standing in chemical engineering. Seminars by leading academic and industrial chemical engineers on development or application of recent technological advances in the discipline. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading. Mr. Friedlander (F,W,Sp)

**596. Directed Individual or Tutorial Studies (2 to 8 units).** Prerequisites: graduate standing in chemical engineering, consent of instructor. Petition forms to request enrollment may be obtained from assistant dean, Graduate Studies. Supervised investigation of advanced technical problems. S/U grading.

**597B. Preparation for Ph.D. Preliminary Examinations (2 to 16 units).** Prerequisites: graduate standing in chemical engineering, consent of instructor. S/U grading.

**597C. Preparation for Ph.D. Oral Qualifying Examination (2 to 16 units).** Prerequisites: graduate standing in chemical engineering, consent of instructor. Preparation for oral qualifying examination, including preliminary research on dissertation. S/U grading.

**598. Research for and Preparation of M.S. Thesis (2 to 12 units).** Prerequisites: graduate standing in chemical engineering, consent of instructor. Supervised independent research for M.S. candidates, including thesis prospectus. S/U grading.

**599. Research for and Preparation of Ph.D. Dissertation (2 to 16 units).** Prerequisites: graduate standing in chemical engineering, consent of instructor. Usually taken after student has been advanced to candidacy. S/U grading.

## Chemistry/Materials Science (Interdepartmental)

For details on this undergraduate program, see Chapter 5 on the College of Letters and Science.

## Civil Engineering

3173 Engineering I, (310) 825-6153

### Professors

Stanley B. Dong, Ph.D.  
John A. Dracup, Ph.D.  
Michael E. Fournay, Ph.D.  
Gary C. Hart, Ph.D.  
Poul V. Lade, Ph.D.  
Richard B. Nelson, Sc.D.  
Moshe F. Rubinstein, Ph.D. (*Distinguished Teaching Award*)  
Lawrence G. Selna, Ph.D.  
Michael K. Stenstrom, Ph.D., *Chair*  
William W-G. Yeh, Ph.D.  
Tung Hua Lin, D.Sc., *Emeritus*  
Chung Yen Liu, Ph.D., *Emeritus*  
Rokuro Muki, Ph.D., *Emeritus*  
Richard L. Perrine, Ph.D., *Emeritus*  
Lucien A. Schmit, Jr., M.S., *Emeritus*

### Associate Professors

Lewis P. Felton, Ph.D., *Vice Chair*  
Sanford B. Roberts, Ph.D., *Emeritus*

### Assistant Professors

Menachem Elimelech, Ph.D.  
Thomas C. Harmon, Ph.D.  
Janet G. Hering, Ph.D.  
Mladen Vucetic, Ph.D.

### Senior Lecturer

George J. Tauxe, M.S., *Emeritus*

### Adjunct Professors

Robert E. Englekirk, Ph.D.  
Y. Marvin Ito, Ph.D.  
Keith D. Stolzenbach, Ph.D.

## Scope and Objectives

The civil engineering programs at UCLA include structural engineering, structural mechanics, geotechnical engineering, earthquake engineering, water resource systems engineering, environmental engineering, and decision making and engineering management.

The ABET-accredited civil engineering curriculum leads to a B.S. in Civil Engineering, a broad-based education in structural engineering, geotechnical engineering, and water resource systems. This program is an excellent foundation for entry into professional practice in civil engineering or for more advanced study.

At the graduate level, M.S. and Ph.D. degree programs are offered in the areas of structures (including structural/earthquake engineering and structural mechanics), geotechnical engineering, and water resources and environmental engineering. In these areas, research is being done on a variety of problems ranging from basic physics and mechanics problems to critical problems in earthquake engineering and in the development of new technologies for water treatment and pollution control.

## Bachelor of Science in Civil Engineering

The objective of the civil engineering curriculum is to give graduating seniors an academically sound and practical background in civil engineering. A balanced program, including engineering science, design, and laboratory courses in civil engineering, is stressed. The ongoing goal of the program is to produce well-qualified graduates for the engineering profession or for graduate civil engineering schools in the U.S.

### The Major

Course requirements are as follows (180 minimum units required):

(1) Eight core courses: Chemical Engineering M105A or Mechanical, Aerospace, and Nuclear Engineering M105A, Civil Engineering 11, 108, Electrical Engineering 100, 103, Materials Science and Engineering 14, Mechanical, Aerospace, and Nuclear Engineering 102, 103.

(2) Civil Engineering 120, 121, 130, 135A, 151, 153; one mathematics course from Mechanical, Aerospace, and Nuclear Engineering 174, 191A, 192A, 192B, 192C, 192D.

(3) Thirty-two elective units, to be selected from the courses listed below, which must include eight units of laboratory:

*Engineering Mechanics* — Civil Engineering 130F, 130L, Mechanical, Aerospace, and Nuclear Engineering 166C, 168.

*Geotechnical Engineering* — Civil Engineering 128L, Earth and Space Sciences 100, 139.

*Structures* — Civil Engineering 135B, 135C, 135L, 137, 137L, 141, 142, 142L, 142X (two units), 143, 144, 147.

*Systems Analysis* — Civil Engineering 106A, M140, 175.

*Water Resources and Environmental Engineering* — Civil Engineering 150, 155, 156A, 156B, 157A, 157B, 163, 164.

(4) Chemistry and Biochemistry 11A, 11B/11BL; Civil Engineering 15A, 15B; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A/8AL, 8B/8BL, 8C.

(5) SEAS general education (GE) course requirements — see "Curricular Requirements" (item 4) earlier in this chapter for details.

(6) One free elective course.

## Graduate Study

For information on graduate admission to the civil engineering program and requirements for the M.S. and Ph.D. degrees, see "Graduate Study" at the beginning of this chapter.

## Lower Division Courses

**3. Fundamentals of Environmental Engineering Science.** Lecture, four hours; outside study, eight hours. Prerequisite: Chemistry 11B or Mathematics 3B or consent of instructor. Quantitative analysis of sources, transformations, and effects of pollutants in water, air, and soil. Topics include drinking water, wastewater, hazardous wastes, radioactive wastes, and atmospheric emissions.

Ms. Hering, Mr. Stolzenbach (Sp)

**11. Patterns of Problem Solving.** (Formerly numbered Engineering 11.) Introduction to creative patterns of problem solving and decision making. Discussion of attitudes and techniques productive in problem solving. Heuristic guides for knowledge acquisition, problem representation, and problem solution. Tools and concepts for decision making that include technology and human values.

Mr. Rubinstein (F)

**12. Applied Patterns of Problem Solving.** (Formerly numbered Engineering 12.) Prerequisite: course 11. Application of tools and methods discussed in course 11 to a major problem of a social and technical nature. Experience in team problem solving and decision making.

Mr. Rubinstein (Sp)

**15A. Introduction to Computing in Civil Engineering (2 units).** Lecture, two hours; laboratory, two hours. Overview of operating systems for microcomputers, file editors, spreadsheets, data base programs. SEASnet facilities. Introduction to programming. Civil engineering applications.

Mr. Dong (F,W)

**15B. Introduction to FORTRAN Programming (2 units).** Lecture, two hours; laboratory, two hours. Prerequisite: course 15A. Introduction to programming using structured FORTRAN. Selected topics in programming, with emphasis on numerical techniques as applied to engineering problems.

Mr. Dong (W,Sp)

## Upper Division Courses

**106A. Problem Solving in Engineering Economy.** Lecture, four hours; outside study, eight hours. Prerequisite: upper division standing. Problem-solving and decision-making framework for economic analysis of engineering projects. Foundation for understanding corporate financial practices and accounting. Decisions on capital investments and choice of alternatives for engineering applications in all fields. Introduction to use of engineering economics in analysis of inflation and public investments.

Mr. Dracup (W,Sp)

**108. Introduction to Mechanics of Deformable Solids.** Lecture, three hours; recitation, two hours; outside study, seven hours. Prerequisite: Mathematics 33A. Review of equilibrium principles; forces and moments transmitted by slender members. Concepts of stress and strain. Material constitution (stress-strain relations). Yield criteria. Structural applications to trusses, beams, shafts, columns, and pressure vessels.

Mr. Felton (F,W,Sp)

**120. Principles of Soil Mechanics.** Lecture, four hours; outside study, eight hours. Prerequisite: course 108. Soil as a foundation for structures and as a material of construction. Soil formation, classification, physical and mechanical properties, compaction, bearing capacity, earth pressures, consolidation, and shear strength.

Mr. Lade (F)

**121. Design of Foundations and Earth Structures.** Prerequisite: course 120. Design methods for foundations and earth structures. Site investigation, including determination of soil properties for design. Design of footings and piles, including stability and settlement calculations. Design of slopes and earth retaining structures.

Mr. Lade (W)



**128L. Soil Mechanics Laboratory.** Lecture, one hour; laboratory, eight hours. Prerequisite: course 120 or consent of instructor. Laboratory experiments to be performed by students to obtain soil parameters required for assigned design problems. Soil classification, grain size distribution, Atterberg limits, specific gravity, compaction, expansion index, consolidation, shear strength determination. Design problems, report writing.

Mr. Vucetic (Sp)

**130. Elementary Structural Mechanics.** Lecture, four hours; outside study, eight hours. Prerequisite: course 108. Analysis of stress, strain; phenomenological material behavior, fatigue, cumulative damage; bending, extension of beams, unsymmetrical sections, stiffened shell structures; torsion of beams, stress function, warping, thin-walled cross-sections; shear stresses; plate analysis; instability, failure of columns, plates, approximate methods, empirical formulas.

Mr. Nelson (W)

**130F. Experimental Fracture Mechanics.** Lecture, two hours; laboratory, six hours; outside study, four hours. Prerequisite: course 108 or equivalent. Elementary introduction to fracture mechanics and experimental techniques used in fracture, crack tip stress fields, strain energy release rate, fracture characterization, compliance calibration, surface flaws, fatigue crack growth and fatigue life of structural components, mixed mode fracture, and individual projects.

Mr. Fournay (W)

**130L. Experimental Structural Mechanics.** Lecture, two hours; laboratory, six hours; outside study, four hours. Prerequisite or corequisite: course 130 or equivalent. Lecture and experiments in limit analysis of various aspects of structures. Elastic and plastic analysis of structural elements in multiaxial stress states. Buckling of columns, plates, and shells. Effects of actual boundary conditions on structural performance. Evaluation of structural fasteners.

Mr. Fournay (Sp)

**135A. Elementary Structural Analysis.** Lecture, four hours; outside study, eight hours. Prerequisite: course 108 or consent of instructor. Introduction to structural analysis, classification of structural elements; analysis of statically determinate trusses, cables, beams, and frames; deflections in elementary structures; introduction to virtual work; analysis of indeterminate structures; introduction to force method of analysis.

Mr. Felton (F)

**135B. Intermediate Structural Analysis.** Lecture, four hours; outside study, eight hours. Prerequisite: course 135A or consent of instructor. Analysis of truss and frame structures using matrix methods; matrix force methods; matrix displacement method; analysis concepts based on theorem of virtual work; moment distribution.

Mr. Nelson (W)

**135C. Computer Analysis of Structures.** Lecture, four hours; outside study, eight hours. Prerequisite: course 135A. Recommended: course 135B. Matrix displacement and force methods of structural analysis, with emphasis on their application in computer analysis. Development of approximate analysis techniques for estimation/verification of computer results. Discussion of structural principles, including symmetry/antisymmetry, superposition, and Mueller/Breslau principle for influence lines.

Mr. Dong (Sp)

**135L. Structural Design and Testing Laboratory.** Lecture, two hours; laboratory, eight hours. Prerequisites: courses 15A, 15B, 135A, or equivalent, senior standing, consent of instructor. Limited enrollment. Computer-aided optimum design, construction, instrumentation, and test of a small-scale model structure. Use of computer-based data acquisition and interpretation systems for comparison of experimental and theoretically predicted behavior.

Mr. Felton (Sp)

**137. Elementary Structural Dynamics.** (Formerly numbered M137.) Lecture, four hours; outside study, eight hours. Prerequisite: course 135B or consent of instructor. Basic structural dynamics course for civil engineering students. Elastic free, forced vibration, and earthquake response spectra analysis for single and multidegree of freedom systems. Axial, bending, and torsional vibration of beams.

Mr. Fournay (F)

**137L. Mechanical Vibrations Laboratory.** Lecture, two hours; laboratory, six hours; outside study, four hours. Prerequisite or corequisite: course 137 or Mechanical, Aerospace, and Nuclear Engineering 169A. Calibration of instrumentation for dynamic measurements. Determination of natural frequencies and damping factors from free vibrations. Determination of natural frequencies, mode shapes, and damping factors from forced vibrations. Dynamic similitude.

Mr. Fournay (F)

**M140. Numerical Optimization Methods for Engineering Design.** (Same as Mechanical, Aerospace, and Nuclear Engineering M192F.) Prerequisites: Computer Science 10F, Mathematics 32A, 33A. Recommended: Mathematics 115A. Systematic presentation of numerical optimization methods for engineering design; one-dimensional minimization, unconstrained minimization, linearly constrained minimization, general nonlinear problems, approximation concepts, duality. Optimization problem statements. Advantages and limitations of numerical optimization. Applications to general design in mechanical, aerospace, and manufacturing engineering.

Mr. Felton (F)

**141. Steel Structures.** Lecture, four hours; outside study, eight hours. Prerequisites: courses 135A, 135B. Introduction to building codes. Fundamentals of modeling of steel frame components and systems. Load resistance factor design of tension members and compression members.

Mr. Hart (F)

**142. Design of Reinforced Concrete Structures.** Lecture, three hours; recitation, three hours; outside study, six hours. Prerequisite: course 135A. Beams, columns, and slabs in reinforced concrete structures. Properties of reinforced concrete materials. Design of beams and slabs for flexure, shear, anchorage of reinforcement, and deflection. Design of columns for axial force, bending, and shear. Ultimate strength design methods.

Mr. Selna (W)

**142L. Reinforced Concrete Structural Laboratory.** Lecture, two hours; laboratory, six hours; outside study, four hours. Prerequisite: course 142 or consent of instructor. Limited enrollment. Design considerations used for reinforced concrete beams, columns, slabs, and joints evaluated using analysis and experiments. Links between technical theory, building codes, and experimental results.

Mr. Selna (Sp)

**142X. Reinforced Concrete Construction Laboratory (2 units).** Laboratory, four hours; outside study, two hours. Prerequisite: junior standing. Design and fabrication methods used for reinforced concrete structures. Preparation of engineering drawings. Fabrication of near full-scale reinforced concrete elements in the laboratory.

Mr. Selna (F)

**143. Design of Prestressed Concrete Structures.** Prerequisite: course 135A. Prestressing and post-tensioning techniques. Properties of concrete and prestressing steels. Loss of prestress. Analysis of sections for flexural stresses and ultimate strength. Design of beams by allowable stress and strength methods. Load balancing design of continuous beams and slabs.

Mr. Selna (Sp)

**144. Structural Systems Design.** Lecture, four hours; outside study, eight hours. Prerequisites: courses 137, 141, 142, consent of instructor. Limited enrollment. Design course for civil engineering students, with focus on aspects of complete structural systems. Introduction to construction concepts. Design of concrete, steel, and masonry gravity and lateral load systems. System selection using realistic criteria. Project involving design of a building.

Mr. Hart (Sp)

**147. Design and Construction of Tall Buildings.** Lecture, four hours; outside study, eight hours. Prerequisites: course 141, consent of instructor. Limited enrollment. Introduction to total design process and professional participants. Systematic presentation of advantages and limitations of different structural forms and systems. Identification of critical design factors influenced by tallness. Foundation systems. Construction site visits, costing, and scheduling.

Mr. Hart (W)

**150. Engineering Hydrology.** Lecture, four hours; outside study, eight hours. Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 103 or consent of instructor. Recommended: elementary probability. Precipitation, climatology, stream flow analysis, flood frequency analysis, groundwater, snow hydrology, hydrologic simulation. Possible field trips.

Mr. Dracup (F)

**151. Introduction to Water Resources Engineering.** Lecture, four hours; outside study, eight hours. Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 103 or consent of instructor. Principles of hydraulics, flow of water in open channels and pressure conduits, reservoirs and dams, hydraulic machinery, hydroelectric power. Introduction to system analysis and design applied to water resources engineering.

Mr. Dracup (W)

**153. Introduction to Environmental Engineering Science.** Lecture, four hours; outside study, eight hours. Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 103. Water, air, and soil pollution: sources, transformations, effects, and processes for removal of contaminants. Water quality, water and wastewater treatment, waste disposal, air pollution, global environmental problems. Field trip.

Ms. Hering (F)

**155. Unit Operations and Processes for Water and Wastewater Treatment.** Lecture, four hours; outside study, eight hours. Prerequisite: course 153 or consent of instructor. Biological, chemical, and physical methods used to modify water quality. Fundamentals of phenomena governing design of engineered systems for water and wastewater treatment systems. Field trip.

Mr. Harmon (F)

**156A. Environmental Chemistry Laboratory.** (Formerly numbered 156.) Lecture, four hours; laboratory, four hours; outside study, four hours. Prerequisites: course 153 (may be taken concurrently), Chemistry 11A, 11B, or equivalent. Basic laboratory techniques in analytical chemistry related to water and wastewater analysis. Selected experiments include gravimetric analysis, titrimetry spectrophotometry, redox systems, pH and electrical conductivity. Concepts to be applied to analysis of "real" water samples in course 156B.

Ms. Hering (F,Sp)

**156B. Water Quality Control Laboratory.** Lecture, four hours; laboratory, four hours; outside study, four hours. Prerequisites: Chemistry 11A, 11B, or equivalent. Characterization and analysis of typical natural waters and wastewaters for inorganic and organic constituents. Selected experiments include solids, nitrogen species, oxygen demand, chlorine, alkalinity, hardness, and trace analysis. Discussion of relevance of these measurements to water resource engineering.

Mr. Stenstrom (W)

**157A. Design of Water Resource Structures.** Lecture, four hours; outside study, eight hours. Prerequisites: course 151, Mechanical, Aerospace, and Nuclear Engineering 103. Review design of hydraulic structures, pertinent fluid mechanics, and hydraulic theory and applications. Examples of failures and successes of hydraulic structures. Class project and field trip required.

Mr. Dracup (Sp)

**157B. Design of Water Treatment Plants.** (Formerly numbered 157.) Lecture, two hours; discussion, two hours; laboratory, four hours; other, four hours. Prerequisite: course 155. Water quality standards and regulations, overview of water treatment plants, design of unit operations, predesign of water treatment plants, hydraulics of plants, process control, and cost estimation.

Mr. Elimelech (Sp)

**157C. Design of Wastewater Treatment Plants.** Lecture, four hours; outside study, eight hours. Prerequisite: course 155. Process design of wastewater treatment plants, including primary and secondary treatment, detailed design review of existing plants, process control, and economics.

Mr. Stenstrom (W)

**163. Air Pollution Control.** Lecture, four hours; outside study, eight hours. Prerequisite: senior standing or consent of instructor. Sources of air pollutants, their atmospheric transport, dispersion, and photochemical reaction. Design and operational basis for stationary and mobile source control systems. Overview of current regulatory trends. Mr. Stenstrom (Sp)

**164. Waste and Hazardous Waste Management.** Lecture, four hours; outside study, eight hours. Prerequisites: course 153 and Mechanical, Aerospace, and Nuclear Engineering 103, or consent of instructor. Waste sources and handling. Resource recovery processes and system design. Site selection, design and operation for landfill disposal. Leachate transport, monitoring, and design for groundwater protection. Mr. Harmon (W)

**175. Introduction to Elements of Decision Making.** Lecture, four hours; outside study, eight hours. Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 192D or equivalent mathematics course. Elements of decision making and decision process. Decision and utility theory. Formulation of utility functions and objective functions. Subjective probabilities. Bayesian approach to value of information. Risk sharing and group decisions. Methods of eliciting judgments; bias and scoring rules. Individual and team decision making. Mr. Rubinstein (F)

**199. Special Studies (2 to 8 units).** Prerequisites: senior standing, consent of instructor. Individual investigation of selected topic to be arranged with a faculty member. Enrollment request forms available in department office. Occasional field trips may be arranged. May be repeated for credit. (F,W,Sp)

## Graduate Courses

**220. Shear Strength of Soil and Stability of Slopes.** Prerequisite: course 120. Detailed study of fundamental concepts of shear strength of soils, strength determining factors, methods of strength measurement. Slope stability and stability analysis techniques using circular and noncircular failure surfaces, effect of side forces, total and effective stress analyses. Mr. Lade (F)

**221. Foundation Engineering.** Prerequisites: courses 120, 220. Principles of foundation design, including theory of consolidation, impeded drainage, stress distribution, settlement analysis, allowable bearing capacity for shallow foundations, piles, and piers; laterally loaded piles. Mr. Lade (W)

**222. Soil Dynamics.** Lecture, four hours; outside study, eight hours. Prerequisite: course 120. Stress-strain behavior of soils under cyclic loads. Behavior of soil deposits and earth structures during earthquakes. Liquefaction of saturated cohesionless deposits. Fundamentals of vibrations of machine foundations. Mr. Vucetic (W)

**223. Earth Pressures and Earth Retaining Structures.** Lecture, four hours; outside study, eight hours. Prerequisite: course 120. Basic concepts of theory of earth pressures behind retaining structures, with special application to design of retaining walls, bulkheads, and excavation bracing; effects of flexibility of bulkheads, creep in soils, and construction techniques. Mr. Vucetic (F)

**228L. Advanced Soil Mechanics Laboratory.** Prerequisites: courses 120, 121, 220, 221. Lectures and laboratory studies of advanced aspects of soil properties and their application to design. Permeability, consolidation, strength testing, pore water pressure measurements, advanced instrumentation and measurement techniques. Preparation of engineering reports. Mr. Lade (Sp)

**229. Seminar: Advanced Topics in Soil Mechanics.** Lecture, four hours; outside study, eight hours. Prerequisite: consent of instructor. Topics may vary each term to cover subjects such as earth dam design, seepage through soils, consolidation, constitutive laws, finite difference and finite element methods with special application in soil mechanics, theories of elasticity and plasticity, and case histories. Mr. Lade (W)

**M230. Elasticity.** (Same as Mechanical, Aerospace, and Nuclear Engineering M256B.) Lecture, four hours; outside study, eight hours. Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 256A or consent of instructor. Equations of linear elasticity; uniqueness of solution; Betti/Rayleigh reciprocity; Saint-Venant principle; simple problems involving spheres and cylinders; special techniques for plane problems. Airy stress function, complex variable method, transform method; three-dimensional problems, torsion, entire space and half-space problems; boundary integral equations. Mr. Dong, Mr. Mal (W)

**231. Inelastic Effects in Structures and Materials.** Prerequisite: course 130 or equivalent or consent of instructor. Analogy between inelastic strain and applied force in stress analysis. Mathematical and physical theories of plasticity and creep and their basic assumptions. Static and dynamic analysis of inelastic beams, columns, frames, and plates. Localized plastic deformation in materials. Mr. Lin (W, even years)

**232. Theory of Plates and Shells.** Prerequisite: course 130 or Mechanical, Aerospace, and Nuclear Engineering 156B. Small and large deformation theories of thin plates; energy methods; free vibrations; membrane theory of shells; axisymmetric deformations of cylindrical and spherical shells, including bending. Mr. Nelson (W)

**233. Mechanics of Composite Material Structures.** Lecture, four hours; outside study, eight hours. Prerequisites: courses M230 and 232, or consent of instructor. Elastic, anisotropic stress-strain-temperature relations. Analysis of prismatic beams by three-dimensional elasticity. Analysis of laminated anisotropic plates and shells based on classical and first-order shear deformation theories. Elastodynamic behavior of laminated plates and cylinders. Mr. Dong (Sp)

**234. Advanced Topics in Structural Mechanics.** Prerequisites: graduate standing in engineering, consent of instructor. Current topics in composite materials, computational methods, finite element analysis, structural synthesis, nonlinear mechanics, and structural mechanics in general. Topics may vary from term to term. Mr. Muki (Sp)

**235A. Advanced Structural Analysis.** Lecture, four hours; outside study, eight hours. Prerequisite: course 135A. Recommended: course 135B. Review of matrix force and displacement methods of structural analysis; virtual work theorem, virtual forces, and displacements; theorems on stationary value of total and complementary potential energy, minimum total potential energy, Maxwell/Betti theorems, effects of approximations, introduction to finite element analysis. Mr. Felton, Mr. Nelson (F)

**235B. Finite Element Analysis of Structures.** Prerequisites: courses 130 and 235A, or consent of instructor. Direct energy formulations for deformable systems; solution methods for linear equations; analysis of structural systems with one-dimensional elements; introduction to variational calculus; discrete element displacement, force, and mixed methods for membrane, plate, shell structures; instability effects. Mr. Nelson (W)

**235C. Nonlinear Structural Analysis.** Prerequisite: course 235B or consent of instructor. Classification of nonlinear effects; material nonlinearities; conservative, nonconservative material behavior; geometric nonlinearities, Lagrangian, Eulerian description of motion; finite element methods in geometrically nonlinear problems; postbuckling behavior of structures; solution of nonlinear equations; incremental, iterative, programming methods. Mr. Nelson (Sp)

**236. Stability of Structures I.** Prerequisite: course 130 or 135B or equivalent. Elastic buckling of bars. Different approaches to stability problems. Inelastic buckling of columns and beam columns. Columns and beam columns with linear, nonlinear creep. Combined torsional and flexural buckling of columns. Buckling of plates. Mr. Dong (Sp)

**M237A. Dynamics of Structures.** (Same as Mechanical, Aerospace, and Nuclear Engineering M269A.) Prerequisite: course 137. Principles of dynamics. Determination of normal modes and frequencies by differential and integral equation solutions. Transient and steady state response. Emphasis on derivation and solution of governing equations using matrix formulation. Mr. Bendiksen, Mr. Dong, Mr. Friedmann (W)

**M237C. Introduction to Probabilistic Dynamics.** (Same as Mechanical, Aerospace, and Nuclear Engineering M269C.) Prerequisite: course 137. Response of structural and mechanical systems to random vibrations. Stationary and nonstationary excitations. Response of systems with random parameters. Discrete and continuous linear systems. Applications to earthquakes, wind sway of buildings, gust response, vibrations due to gearing inaccuracies, train vibrations. Mr. Hart (Sp, even years)

**M240. Optimum Structural Design.** (Same as Mechanical, Aerospace, and Nuclear Engineering M267A.) Prerequisite: course 235A or Mechanical, Aerospace, and Nuclear Engineering 261A or consent of instructor. Synthesis of structural systems; analysis and design as optimization problems; techniques for synthesis and optimization; application to aerospace and civil structures. Mr. Felton (W)

**241. Advanced Steel Structures.** Lecture, four hours; outside study, eight hours. Prerequisites: courses 137, 141, 235A. Performance characterization of steel structures for static and dynamic loads. Analysis and load resistance factor design of beams, columns, and plates for biaxial loads. Composite steel-concrete members. Mr. Hart (W)

**242. Advanced Reinforced Concrete Design.** Lecture, four hours; outside study, eight hours. Prerequisite: course 142. Design of building and other structural systems for vertical and lateral loads. Earthquake forces. Ductility in elements and systems. Columns: secondary effects and biaxial bending. Slabs: code and analysis methods. Footings, shear walls, diaphragms, chords, and collectors. Detailing for ductile behavior. Retrofitting. Mr. Selna (Sp)

**244. Structural Loads and Safety for Civil Structures.** Prerequisite: course 141 or 142 or 143 or 144. Modeling of uncertainties in structural loads and structural mechanics; structural safety analysis; and calculation of capacity reduction factors. Mr. Hart (F)

**245. Earthquake Ground Motion.** Lecture, four hours; outside study, eight hours. Prerequisite: course 137. Methods for determination of site ground motion. Seismology and seismicity. Plate tectonics. Source, path, and site effects, waveforms associated with earthquakes. Use of Fourier and response spectra. Attenuation methods for prediction of site response. Typical strong ground motion records. Mr. Selna (W)

**246. Structural Response to Ground Motions.** Prerequisite: course 137. Spectral analysis of ground motions: response, time, and Fourier spectra. Response of structures to ground motions due to earthquakes and nuclear explosions. Computational methods to evaluate structural response. Response analysis, including evaluation of contemporary design standards. Limitations due to idealizations. Mr. Hart, Mr. Selna (Sp)

**250A. Surface Water Hydrology.** Lecture, four hours; outside study, eight hours. Prerequisite: course 150 or consent of instructor. In-depth study of surface water components of hydrologic cycle. Hydrologic mass balance analysis, hydrologic error analysis using systems investigation and physical hydrology. Stochastic hydrology: time-series analysis, Markovian streamflow generating models, and generation of multivariate synthetic streamflows. Applications. Mr. Dracup (W)

**250B. Groundwater Hydrology.** Lecture, four hours; outside study, eight hours. Prerequisite: course 150 or consent of instructor. Theory of movement and occurrence of water in subterranean aquifers. Steady flow in confined and unconfined aquifers. Mechanics of wells; steady and unsteady radial flows in confined and unconfined aquifers. Theory of leaky aquifers. Parameter estimation. Seawater intrusion. Numerical methods. Applications. Mr. Hart (W)

**250C. Mathematical Modeling of Contaminant Transport in Groundwater.** Lecture, four hours; laboratory, eight hours. Prerequisites: courses 250B and 253, or consent of instructor. Phenomena and mechanisms of hydrodynamic dispersion, governing equations of mass transport in porous media, various analytical and numerical solutions, determination of dispersion parameters by laboratory and field experiments, coupled and multiphase pollution problems, computer programs and applications.

Mr. Yeh (Sp)

**251. Water Resources Systems Engineering.** Lecture, four hours; outside study, eight hours. Prerequisite: course 151. Application of mathematical programming techniques to water resources systems. Topics include reservoir management and operation; optimal timing, sequencing and sizing of water resources projects; and multiobjective planning and conjunctive use of surface water and groundwater. Emphasis on management of water quantity.

Mr. Yeh (Sp)

**252. Engineering Economic Analysis of Water and Environmental Planning.** Lecture, four hours; outside study, eight hours. Prerequisites: course 106A, one or more courses from Economics 1, 2, 11, 100, and 101, or consent of instructor. Economic theory and applications in analysis and management of water and environmental problems; application of price theory to water resource management and renewable resources; benefit-cost analysis with applications to water resources and environmental planning.

Mr. Dracup (Sp)

**253. Mathematical Models for Water Quality Management.** Lecture, four hours; outside study, eight hours. Prerequisite: course 153. Development of mathematical models for simulating environmental engineering problems. Emphasis on numerical techniques to solve nonlinear partial differential equations and their application to environmental engineering problems.

Mr. Stenstrom (F)

**254A. Aquatic Chemistry.** (Formerly numbered 254.) Lecture, four hours; outside study, eight hours. Prerequisites: course 155 or consent of instructor, Chemistry 11B, Mathematics 33B. Chemistry of natural waters and wastewaters, including acid/base, complexation, precipitation/dissolution, oxidation/reduction, and adsorption reactions. Emphasis on prediction of equilibrium concentrations of dissolved constituents of natural waters. Introduction to kinetics of chemical reactions in aqueous solutions.

Ms. Hering (F)

**254B. Chemical Kinetics and Process Dynamics in Aquatic Systems.** Lecture, four hours; outside study, eight hours. Prerequisite: course 254A. Principles of chemical kinetics with specific applications to air/water/soil environments. Topics include fundamentals, data analysis, reaction mechanisms, transport considerations, estimation of reaction rates under environmental conditions, current research on chemical kinetics in natural and engineered systems.

Ms. Hering (W)

**254C. Aquatic Surface Chemistry.** Lecture, four hours; outside study, eight hours. Prerequisite: course 254A. Principles of surface chemistry as applied to geochemistry of natural waters, soils, and sediments and to water and wastewater technology; adsorption and desorption; precipitation and dissolution; surface catalysis.

Ms. Hering (W)

**255A. Physical and Chemical Processes for Water and Wastewater Treatment.** Lecture, four hours; outside study, eight hours. Prerequisites: courses 155 and 254A, or consent of instructor. Review of momentum and mass transfer, chemical reaction engineering, coagulation and flocculation, granular filtrations, sedimentation, carbon adsorption, gas transfer, disinfection, oxidation, and membrane processes.

Mr. Elimelech (W)

**255B. Biological Processes for Water and Wastewater Treatment.** Lecture, four hours; outside study, eight hours. Prerequisites: courses 254A and 255A, or consent of instructor. Fundamentals of environmental engineering microbiology; kinetics of microbial growth and biological oxidation; applications for activated sludge, gas transfer, fixed-film processes, aerobic and anaerobic digestion, sludge disposal, and biological nutrient removal.

Mr. Stenstrom (Sp)

**258A. Membrane Separations in Aquatic Systems.** Prerequisite: course 254A. Applications of membrane separations to desalination, water reclamation, brine disposal, and ultrapure water systems. Discussion of reverse osmosis, ultrafiltration, electrodialysis, and ion exchange technologies from both practical and theoretical standpoints.

Mr. Stenstrom (Sp)

**259A. Selected Topics in Environmental Engineering (2 to 4 units).** (Formerly numbered 259.) Lecture, four hours; outside study, eight hours. Prerequisite: consent of instructor. Review of recent research and developments in environmental engineering. Water and wastewater treatment systems, non-point pollution, multimedia impacts. May be taken for a maximum of four units. S/U or letter grading.

Mr. Stenstrom (F)

**259B. Selected Topics in Water Resources (2 to 4 units).** Lecture, four hours; outside study, eight hours. Prerequisite: consent of instructor. Review of recent research and developments in water resources. Water supply and hydrology, global climate change, economic planning, optimization of water resources development. May be taken for a maximum of four units. S/U or letter grading.

Mr. Stenstrom (F,W,Sp)

**260. Advanced Topics in Hydrology and Water Resources.** Lecture, four hours; other, eight hours. Prerequisites: courses 250A, 250B, and 251, or consent of instructor. Current research topics in inverse problem of parameter estimation, experimental design, conjunctive use of surface and groundwater, multiobjective water resources planning, and optimization of water resource systems. Topic may vary from term to term.

Mr. Yeh (F)

**261. Colloidal Phenomena in Aquatic Systems.** (Formerly numbered 255C.) Lecture, four hours; outside study, eight hours. Prerequisites: courses 254A and 255A, or consent of instructor. Colloidal interactions, colloidal stability, colloidal hydrodynamics, surface chemistry, adsorption of pollutants on colloidal surfaces, transport of colloids in porous media, coagulation, and particle deposition. Consideration of applications to colloidal processes in aquatic environments.

Mr. Elimelech (Sp)

**M262A. Introduction to Atmospheric Chemistry.** (Same as Atmospheric Sciences M203A.) Lecture, three hours. Prerequisite for undergraduates: Chemistry 11C. Principles of chemical kinetics, thermochemistry, spectroscopy, and photochemistry; chemical composition and history of Earth's atmosphere; biogeochemical cycles of key atmospheric constituents; basic photochemistry of troposphere and stratosphere, upper atmosphere chemical processes; air pollution; chemistry and climate.

(F)

**M262B. Atmospheric Diffusion and Air Pollution.** (Same as Atmospheric Sciences M224B.) Lecture, three hours. Nature and sources of atmospheric pollution; diffusion from point, line, and area sources; pollution dispersion in urban complexes; meteorological factors and air pollution potential; meteorological aspects of air pollution. S/U grading for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department.

**265. Geohydrochemical Engineering.** Prerequisites: course 250B, graduate standing. Science and engineering underlying movement and fate of chemicals within geospheres of the environment. Models for transport to, within, and from groundwater and their application.

Mr. Stenstrom (Sp)

**275. Multiattribute Decision Making with Conflicting Objectives.** Lecture, four hours; outside study, eight hours. Prerequisite: course 175. Structuring of models for multiattribute decision problems. Theory of quantifying preferences over multiple objectives. Multiattribute utility theory. Analytic hierarchy process. Structuring of models for conditional strategies under conflict situations. Theory of metagames and metarationality.

Mr. Rubinstein (W)

**276. Perspectives of Systems Representation.** Prerequisite: course 275 or consent of instructor. Mathematical and conceptual models used in analysis and synthesis of engineering. Sociotechnical systems. Mathematical representations of interpretative models. Decomposition using tools of graph theory and information theory. Guides to choice of models. Interaction of human and computer in the modeling process.

Mr. Rubinstein (Sp)

**296A-296Z. Advanced Topics in Civil Engineering (2 to 4 units each).** Prerequisite: consent of instructor. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading.

**297AA-297ZZ. Seminars: Current Topics in Civil Engineering (2 to 4 units each).** (Formerly numbered 296AA-296ZZ.) Prerequisite: consent of instructor. Lectures, discussions, and student presentations and projects in areas of current interest in civil engineering. May be repeated for credit. S/U grading.

(F,W,Sp)

**298. Seminar: Engineering (2 to 4 units).** Prerequisites: graduate standing in civil engineering, consent of instructor. Seminars may be organized in advanced technical fields. If appropriate, field trips may be arranged. May be repeated with topic change.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

(F,W,Sp)

**495. Teaching Assistant Training Seminar (2 units).** Prerequisite: appointment as teaching assistant in Civil Engineering Department. Seminar on communication of civil engineering principles, concepts, and methods; teaching assistant preparation, organization, and presentation of material, including use of visual aids; grading, advising, and rapport with students. S/U grading.

(F)

**596. Directed Individual or Tutorial Studies (2 to 8 units).** Prerequisites: graduate standing in civil engineering, consent of instructor. Petition forms to request enrollment may be obtained from assistant dean, Graduate Studies. Supervised investigation of advanced technical problems. S/U grading.

**597A. Preparation for M.S. Comprehensive Examination (2 to 12 units).** Prerequisites: graduate standing in civil engineering, consent of instructor. Reading and preparation for M.S. comprehensive examination. S/U grading.

**597B. Preparation for Ph.D. Preliminary Examinations (2 to 16 units).** Prerequisites: graduate standing in civil engineering, consent of instructor. S/U grading.

**597C. Preparation for Ph.D. Oral Qualifying Examination (2 to 16 units).** Prerequisites: graduate standing in civil engineering, consent of instructor. Preparation for oral qualifying examination, including preliminary research on dissertation. S/U grading.

**598. Research for and Preparation of M.S. Thesis (2 to 12 units).** Prerequisites: graduate standing in civil engineering, consent of instructor. Supervised independent research for M.S. candidates, including thesis prospectus. S/U grading.

**599. Research for and Preparation of Ph.D. Dissertation (2 to 16 units).** Prerequisites: graduate standing in civil engineering, consent of instructor. Usually taken after student has been advanced to candidacy. S/U grading.

# Computer Science

3713 Boelter Hall, (310) 825-3886

## Professors

Algirdas A. Avizienis, Ph.D.  
 Alfonso F. Cardenas, Ph.D.  
 Jack W. Carlyle, Ph.D.  
 Wesley W. Chu, Ph.D.  
 Joseph J. DiStefano III, Ph.D.  
 Milos D. Ercegovic, Ph.D.  
 Mario Gerla, Ph.D.  
 Sheila A. Greibach, Ph.D.  
 Walter J. Karplus, Ph.D.  
 Leonard Kleinrock, Ph.D. (*Distinguished Teaching Award*), *Chair*  
 Allen Klinger, Ph.D.  
 David F. Martin, Ph.D. (*Distinguished Teaching Award*)  
 Lawrence P. McNamee, Ph.D.  
 Richard R. Muntz, Ph.D.  
 D. Stott Parker, Jr., Ph.D.  
 Judea Pearl, Ph.D.  
 Jacques J. Vidal, Ph.D.  
 Carlo Zaniolo, Ph.D. (*Norman E. Friedmann Professor of Knowledge Sciences*)  
 Bertram Bussell, Ph.D., *Emeritus*  
 Gerald Estrin, Ph.D., *Emeritus*  
 Thelma Estrin, Ph.D., *Emerita, in Residence*  
 Michel A. Melkanoff, Ph.D., *Emeritus*  
 Thomas A. Rogers, Ph.D., *Emeritus*

## Associate Professors

Michael G. Dyer, Ph.D.  
 Eliezer M. Gafni, Ph.D.  
 David R. Jefferson, Ph.D.  
 Richard E. Korf, Ph.D.  
 David A. Rennels, Ph.D.  
 Yuval Tamir, Ph.D.

## Assistant Professors

Rajive L. Bagrodia, Ph.D.  
 Jinsheng (Jason) Cong, Ph.D.  
 David E. Heckerman, Ph.D., M.D.  
 Andrew B. Kahng, Ph.D.  
 Josef Skrzypek, Ph.D.

## Senior Lecturer

Leon Levine, M.S., *Emeritus*

## Adjunct Professors

Alfred Inselberg, Ph.D.  
 Boris Kogan, Ph.D.  
 Gerald J. Popek, Ph.D.

## Scope and Objectives

Computer science is concerned with the modeling, analysis, design, and applications of computer-related systems. Its study at UCLA provides education at the undergraduate and graduate levels necessary to understand, design, implement, and use the software and hardware of digital computers and digital systems. The programs provide comprehensive and strongly related studies of subjects in artificial intelligence, computer science theory, computer system architecture, computer network modeling and analysis, distributed computer systems, programming languages and systems, and scientific computing.

The undergraduate and graduate studies and research projects in computer science are sup-

ported by extensive computing resources. In addition to the departmental computing facility, there are nearly a dozen laboratories specializing in areas such as computer communications, VLSI systems, VLSI CAD, and artificial intelligence. The Cognitive Systems Laboratory is engaged in studying computer systems which emulate or support human reasoning. The Biocybernetics Laboratory is devoted to multidisciplinary research involving the application of engineering and computer science methods to problems in biology and medicine.

The Bachelor of Science degree may be attained either through the computer science and engineering major or through the computer science major described below.

The School of Engineering and Applied Science offers M.S. and Ph.D. degrees in Computer Science, as well as minor fields for graduate students seeking engineering degrees. In cooperation with the John E. Anderson Graduate School of Management, the Computer Science Department offers a concurrent degree program which enables students to obtain the M.S. in Computer Science and the M.B.A. (Master of Business Administration).

## Bachelor of Science in Computer Science and Engineering

The ABET-accredited computer science and engineering curriculum at UCLA provides the education and training necessary to design, implement, test, and utilize the hardware and software of digital computers and digital systems. This curriculum has major components from the Computer Science and Electrical Engineering Departments. Within the curriculum students study all aspects of computer systems from electronic design, based on solid-state physics concepts, through logic design, integrated circuit selection and design, MSI, LSI, and VLSI concepts and device utilization, machine language design, implementation and programming, operating system concepts, system programming, networking fundamentals, higher-level language skills, and application of these systems. Students are prepared for employment in the high-technology industries which interface with information and digital systems.

### The Major

Course requirements are as follows (180 minimum units required):

- (1) Five core courses: Computer Science 21, 22, 23, 24, 51A.
- (2) Computer Science 111, 112, 118, 131, 151B, 180, 181, Electrical Engineering 10, 102, 110, Statistics 154A; four laboratory units (Computer Science 152A, 152B); one course from Computer Science 161, 163, 168; two computer science/electrical engineering electives (excluding Electrical Engineering 100) and two computer science/electrical engineer-

ing laboratories; Computer Science M196B or Electrical Engineering 103.

(3) Two upper division elective courses from the Computer Science Department, one of which must be from 132, 171, 172, 173, 174, M196B. Course 199 may normally be taken only as a free elective; however, you may petition for exceptions in extraordinary situations.

(4) Chemistry and Biochemistry 11A; Mathematics 31A, 31B, 32A, 32B, 33A, 33B, 61; Physics 8A/8AL, 8B/8BL, 8C/8CL.

(5) SEAS general education (GE) course requirements — see "Curricular Requirements" (item 4) earlier in this chapter for details.

(6) One free elective course.

## Bachelor of Science in Computer Science

The computer science curriculum is designed to accommodate students who want full professional preparation in computer science but do not necessarily have a strong interest in computer systems hardware. The curriculum consists of major components in computer science, a minor or technical support area, and a core of courses from the social sciences, life sciences, and humanities. Within the curriculum, you study subject matter in software engineering, principles of programming languages, data structures, computer architecture, theory of computation and formal languages, operating systems, distributed systems, computer modeling, computer networks, compiler construction, and artificial intelligence. Majors are prepared for employment in a wide range of industrial and business environments.

### The Major

Course requirements are as follows (180 minimum units required):

- (1) Five core courses: Computer Science 21, 22, 23, 24, 51A.
- (2) Computer Science 111, 112, 118, 131, 132, 151B, 180, 181, Statistics 154A; one course from Computer Science 161, 163, 168; course M196B or Mathematics 141A or Electrical Engineering 103; four laboratory units (Computer Science 152A, 152B).
- (3) One elective upper division computer science course.
- (4) A minor or technical support area composed of a coherent group of three upper division courses selected from astronomy, atmospheric sciences, biology, chemical engineering, chemistry and biochemistry, civil engineering, Earth and space sciences, economics, electrical engineering, library and information science, linguistics, management, materials science and engineering, mathematics, mechanical, aerospace, and nuclear engineering, molecular biology, physics.
- (5) Mathematics 31A, 31B, 32A, 32B, 33A, 33B, 61; Physics 8A/8AL, 8B/8BL, 8C/8CL.

(6) SEAS general education (GE) course requirements — see "Curricular Requirements" (item 4) earlier in this chapter for details. Computer science students must also select two additional humanities/social sciences courses and one additional life sciences course. Chemistry 11A may be substituted for one of the life sciences courses.

(7) Two free elective courses.

## Graduate Study

For information on graduate admission to the computer science program and requirements for the M.S. and Ph.D. degrees, see "Graduate Study" at the beginning of this chapter.

## Computer Science Breadth Requirement

Candidates for the M.S. or Ph.D. degree in Computer Science must satisfy the computer science breadth requirement by the end of the fourth term in graduate residence at UCLA. This requirement is satisfied by mastering the contents of six undergraduate courses in computer science selected from the following two groups:

Group 1 (four required courses or equivalent)  
— Computer Science 23 or 143 or 180, 51A, 151B, 181.

Group 2 (two required courses or equivalent)  
— Computer Science 111, 112, 118, 131 or 132, 161 or 163 or 168, 171 or 174, 172 or 173 or 270A.

Competence in any or all courses may be demonstrated by one of three methods:

- (1) Satisfactory completion of the course at UCLA with a grade of B – or better.
- (2) Satisfactory completion of an equivalent course at another university with a grade of B – or better.
- (3) Satisfactory completion of a final examination in the courses at UCLA.

In addition, for each degree students must complete at least three consecutive terms of Computer Science 201 with grades of Satisfactory.

## M.B.A./M.S.-Computer Science

The Department of Computer Science in the School of Engineering and Applied Science and the John E. Anderson Graduate School of Management offer a concurrent degree program which enables students to complete requirements for the M.S. in Computer Science and the M.B.A. (Master of Business Administration) in three academic years. Students should request application materials from both the M.B.A. Admissions Office, John E. Anderson Graduate School of Management, and the Department of Computer Science.

## Lower Division Courses

**1. Principles of Computer Science.** Lecture, four hours; laboratory, two hours; other, six hours. Not open for credit to computer science majors. Introduction to fundamental scientific principles of computation. Programming in LISP. Systems software, including interpreters, and operating systems. Computer hardware design and implementation. Theory of computation, including computability and complexity. Applications, including artificial intelligence and scientific computing.

**10C. Introduction to Programming/PASCAL.** Lecture, four hours; discussion, two hours. Exposure to computer organization and capabilities. Basic principles of programming (using PASCAL as example language): algorithmic, procedural problem solving. Program design and development. Control structures and data structures. Character strings and word processing. Mr. Gerla (W)

**10F. Introduction to Programming/FORTRAN.** Lecture, four hours; discussion, two hours. Open to mathematics and computer science majors; open to graduate students on S/U grading basis only. Description and use of FORTRAN programming language. Selected topics in programming techniques. Programming and running of several programs. Mr. Gerla (F)

**11. Introduction to PASCAL.** Lecture, four hours; discussion, two hours; other, six hours. Limited to majors in computer science and engineering and computer science majors. Open to graduate students on S/U grading basis only. Not open to students with credit for course 10C, 10F, or Program in Computing 10A. Human factors in programming and program design. Exposure to computer organization and capabilities, data representation, professional ethics. Principles of programming (using PASCAL as example language): algorithm design and procedural abstraction. Program design and development. Control structures and data structures. Mr. Martin (F)

**21. Introduction to Computer Science I.** Lecture, four hours; discussion, two hours; outside study, six hours. Prerequisite: course 11 or equivalent or consent of instructor. Importance of specification. Turing machines as formal specifications of procedures. Formal systems. Propositional and predicate logic and Horn logic. Set theory, relations, functions, and sequences. Practical examples of specification. Mr. Gafni, Mr. Parker (F,W)

**22. Introduction to Computer Science II.** (Formerly numbered 12.) Lecture, four hours; recitation, two hours. Prerequisite: course 21 or consent of instructor. Limited to students in computer science and engineering major. Open to graduate students on S/U grading basis only. Higher-level programming objects, control flow, streams, object-oriented programming (using SCHEME programming language), co-routines, syntactic abstraction. Mr. Dyer, Mr. Korf (W,Sp)

**23. Introduction to Computer Science III.** (Formerly numbered 13.) Lecture, four hours; recitation, two hours. Prerequisites: courses 21 and 22, or consent of instructor. Design and specification of algorithmic solutions. Design and specification of data structures, complexity analysis of algorithms and data structures. Implementation of algorithms and data structures in C programming language. Performance analysis of computer programs. Ms. Greibach, Mr. Kahng (F,Sp)

**24. Systems Programming (5 units).** Prerequisite: course 23. Introductory course on assembly language and operation systems fundamentals. Number systems, machine language, and assembly language. Procedure calls, stacks, interrupts, and traps. Assemblers, linkers, and loaders. Operating systems concepts: processes and process management, I/O programming, memory management, file systems. Mr. Muntz, Mr. Rennels (F,W)

**51A. Computer Architecture I.** (Formerly numbered 151A.) Lecture, four hours; recitation, two hours. Prerequisite: Physics 8C. Introduction to digital systems. Specification and implementation of combinatorial and sequential systems. SSI/MSI/LSI standard modules and their use in digital systems. Specification and implementation of algorithmic systems modules for data and control sections. Hardwired and microprogrammed approaches. Arithmetic algorithms and their implementation. Mr. Avizienis, Mr. Ercegovac (F,W,Sp)

## Upper Division Courses

**111. Operating Systems Principles.** Lecture, four hours; laboratory, two hours. Prerequisites: courses 23 or equivalent, 24. Introduction to design and performance evaluations of modern operating systems. Mapping and binding of addresses. Organization of multiprogramming and multiprocessing systems; interrupts, process model, and interlocks. Resource allocation models and problem of deadlocks. Scheduling, synchronization. Memory management, virtual memory. I/O control, file systems. Mr. Jefferson, Mr. Muntz (W,Sp)

**112. Computer System Modeling Fundamentals.** Lecture, four hours; outside study, eight hours. Prerequisites: upper division standing or Statistics 154A, consent of instructor. Basic tools necessary for performance evaluation and design of distributed computer systems, including such topics as combinatorics, generating functions, probability theory, transforms, Markov chains, baby queueing theory. Presentation of this set of tools in a fashion that is rich with examples from computer systems field. Mr. Kleinrock (F,Sp)

**118. Computer Network Fundamentals.** Lecture, four hours; discussion, two hours. Prerequisite: upper division standing. Investigation of functions required to operate computer communications networks. Development of methodology for implementing these functions in procedures called protocols. Organization around ISO-OSI seven-layer architecture, with review of each layer. Specific functions defined and available alternatives studied. Presentation of several applications and case studies based on existing public and private networks. Mr. Gerla, Mr. Kleinrock (F,Sp)

**130. Software Engineering.** Lecture, four hours; laboratory, two hours. Prerequisites: courses 22, 23. Structured programming, program specification, program proving, modularity, abstract data types, composite design, software tools, software control systems, program testing, team programming. Mr. Cardenas (W or Sp)

**131. Programming Languages.** Lecture, four hours; laboratory, two hours. Prerequisites: courses 23, 24. Study, comparison, and evaluation of alternative strategies for language specification, data description, data control, program modularity, instruction sequencing, and language implementations. Use of a few languages selected from FORTRAN 77, ADA, SNOBOL 14, LISP, MODULA 2, and PROLOG to illustrate particular implementations of some of above features. Mr. Bagrodia, Mr. Jefferson (W,Sp)

**132. Compiler Construction.** Lecture, four hours; discussion, two hours. Prerequisites: courses 23 or equivalent, 131, 181. Compiler structure; lexical and syntactic analysis; semantic analysis and code generation; theory of parsing. Mr. Bagrodia, Mr. Martin (W)

**141. Basic Methods of Data Organization.** Lecture, four hours; laboratory, two hours. Prerequisites: courses 22 and 23, or consent of instructor. Fundamental techniques for organizing and manipulating data, stressing relationships to performance, time/storage trade-offs. Sequential and linked storage allocation for linear lists, multilinked structures. Trees: implementation, traversals, mathematical properties. Graphs and networks: memory representation, algorithms. Dynamic storage allocation. External storage devices. Data base concepts and architectures. Topics include sorting-searching, algorithmic analysis, graph theory, concepts underlying file management. Mr. Cardenas, Mr. Gerla (W)

**143. Introduction to Data Base Systems.** Lecture, four hours; discussion, two hours; laboratory, two hours; outside study, four hours. Prerequisites: courses 22 and 23, or consent of instructor. Information systems and data base systems in enterprises. File organization and secondary storage structures. Relational model and relational data base systems. CODASYL and other data management approaches. Data base design principles. Transactions, concurrency, and recovery. Integrity and authorization.

Mr. Cardenas, Mr. Zaniolo (W,Sp)

**151B. Computer Systems Architecture II (Intermediate).** Lecture, four hours; discussion, two hours. Prerequisites: courses 24, 152A. Machine organization and design, formal descriptions, comparative study of machine instruction sets and formats, data representation and floating point, addressing structures, mechanization of procedure calls, memory organization and management, microprogramming, I/O processing and interrupts, and reliability aspects.

Mr. Cong, Mr. Rennels, Mr. Tamir (F,W,Sp)

**151C. Design of Digital Systems.** Lecture, four hours; discussion, two hours. Prerequisites: courses 51A, 151B, 152A. Design of complex digital systems using hierarchical approaches and regular structures. Combinational, sequential, and algorithmic systems. Microprogramming and firmware engineering. Cost/performance measures and technology constraints. Use of design tools. Design project.

Mr. Ercegovac (W, odd years)

**152A. Introductory Digital Design Laboratory (2 units).** Laboratory, four hours. Prerequisite: course 51A. Hands-on design, implementation, and debugging of digital logic circuits, use of computer-aided design tools for schematic capture and simulation, implementation of complex circuits using programmed array logic, design projects.

Mr. Rennels (F,W,Sp)

**152B. Computer Design and Interfacing Laboratory (2 units).** Laboratory, four hours. Prerequisite: course 151B. Design and implementation of computer I/O interfaces and device controllers, implementation of microprogrammed machines.

Mr. Rennels, Mr. Tamir (F,W,Sp)

**161. Fundamentals of Artificial Intelligence.** Lecture, four hours; laboratory, two hours. Prerequisite: course 23 or equivalent. Introduction to fundamental problem solving and knowledge representation paradigms of artificial intelligence. Introduction to LISP with regular programming assignments. State-space and problem reduction methods, brute-force and heuristic search, planning techniques, two-player games. Knowledge structures including predicate logic, production systems, semantic nets and primitives, frames, scripts. Special topics in natural language processing, expert systems, vision, and parallel architectures.

Mr. Dyer, Mr. Korf (F,Sp)

**163. Introduction to Natural Language Processing.** Lecture, four hours; laboratory, two hours. Prerequisite: course 130 or 131 or consent of instructor. Role of syntax, semantics, and pragmatics in human language processing by computers. Natural language generators and parsers, inference, and conceptual analysis. Modeling conceptual processes and representing semantic knowledge by means of computer problems.

Mr. Dyer (W)

**168. Vision in Man and Machine.** Lecture, four hours; discussion, two hours; other, six hours. Prerequisite: course 161 or consent of instructor. Use of computational aspects of processing visual information to present a unified treatment of early vision, allowing transfer of concepts from analysis of natural vision to synthesis of machine vision. Extraction, processing the manipulation of image attributes. Their organization into data structures and processing by dedicated computing architectures. Issues in image segmentation based on aggregation of feature descriptions.

Mr. Carlyle, Mr. Skrzypek (W)

**168L. Computer Vision Laboratory (2 to 4 units).** Laboratory, eight hours. Prerequisites: course 168, senior standing, consent of instructor. Image acquisition, storage, processing, and analysis. Design and implementation of algorithms for low-level vision. Experiments in motion, texture, color, edge detection, binary and gray-level images. Scheme-based personal computer vision station.

Mr. Carlyle, Mr. Skrzypek

**170A. Introduction to Scientific Computing.** Lecture, four hours; laboratory, two hours; outside study, six hours. Prerequisite: senior standing in computer science or consent of instructor. Introduction to scientific modeling and simulation, using the very high-level computer languages MATHEMATICA and MAPLE. Extensive coverage of programming in MATHEMATICA, with applications involving engineering modeling; simulation term project required.

Mr. Vidal (Sp)

**171. Real-Time Computer Systems.** Prerequisite: senior standing or consent of instructor. Survey of fundamentals, with emphasis on hardware and systems concepts. Adapting digital computers to interfaces, including multiprogramming, bus structure, interrupt, and time-sharing considerations. Digital communication, remote consoles, sampling, quantizing, multiplexing, analog-digital conversion, and data reconstruction.

Mr. Karplus (W)

**171L. Real-Time Systems Laboratory (2 to 4 units).** Laboratory, four to eight hours. Prerequisites: senior standing, consent of instructor. Recommended: courses 152A, 171 (may be taken concurrently). Tests and measurements of digital and analog signals and systems as encountered in data acquisition, on-line computing, telecommunication facilities, terminals, modems, interfaces, and standards (e.g., RS 232, IEEE488). May be repeated for credit with consent of instructor.

Mr. Carlyle, Mr. Karplus (F,W,Sp)

**172. Simulation and Models.** Lecture, four hours; other, eight hours. Prerequisite: course 23. Recommended: one statistics course. Model formulation and programming for discrete event systems in the simulation language GPSS. Statistical considerations: design of experiments, random number generation, analysis of model results. Computer exercises.

Mr. Karplus, Mr. McNamee

**173. Random Data Analysis and Measurement Procedures.** Prerequisite: Electrical Engineering 102 or equivalent. Practical aspects of random data analysis and measurement procedures. Statistical properties of random data, correlation, spectral density, input/output relationships, statistical errors, coherence functions, data acquisition, and processing techniques.

Mr. McNamee

**174. Elements of Computer Graphics.** Lecture, two hours; laboratory, two hours; outside study, eight hours. Prerequisite: course 23 or equivalent. Hardware and software elements of computer graphics systems. Graphics languages. Graphic workstations and specialized I/O devices. Design and development of interactive graphics programs.

Mr. Vidal (W)

**180. Introduction to Algorithms and Complexity.** Lecture, four hours; recitation, two hours; outside study, six hours. Prerequisites: course 23, Mathematics 61, junior standing in computer science. Introduction to design and analysis of algorithms. Design techniques: divide-and-conquer, greedy method, dynamic programming; selection of prototypical algorithms; choice of data structures and representations; complexity measures: time, space, upper, lower bounds, asymptotic complexity; NP-completeness.

Ms. Greibach, Mr. Kahng, Mr. Parker (F,W)

**181. Introduction to Formal Languages and Automata Theory.** Lecture, four hours; recitation, two hours; outside study, six hours. Prerequisites: course 21, Mathematics 61, and senior standing in computer science or consent of instructor. Grammars, automata, and languages. Finite-state languages and finite-state automata. Context-free languages and pushdown story automata. Unrestricted rewriting systems, recursively enumerable and recursive languages, and Turing machines. Closure properties, pumping lemmas, and decision algorithms. Introduction to computability.

Mr. Carlyle, Ms. Greibach (F,W,Sp)

**190. Computer Science Design Project.** Lecture, four hours; outside study, eight hours. Prerequisite: senior standing with adequate background in hardware, software, and computer applications. Limited to majors in computer science and engineering and computer science majors. Basic concepts of design of projects in computer science, including interpretation of specifications, subtasking, design of experiments, data analysis and performance evaluation, cost engineering, reliability, and societal and safety considerations.

Mr. McNamee (Sp)

**196A. Introduction to Bioengineering and Cybernetics (2 units).** Prerequisite: calculus. Strongly recommended for students with potential interest in bioengineering or cybernetics as a major. Introductory survey of topics in bioengineering and cybernetics disciplines. Lectures presented by faculty currently performing research in one of the areas; some sessions include laboratory tours. P/NP grading.

Mr. DiStefano

**M196B. Modeling and Simulation of Biological Systems.** (Same as Medicine M196B.) Lecture, four hours; laboratory, two hours. Prerequisite: calculus. Introduction to classical and modern systems and modeling and simulation methods for studying biological systems. Multicompartmental modeling, multi-exponential curve fitting, and simulation laboratory projects. Applications in physiology and medicine. Life sciences and medical students encouraged to enroll.

Mr. DiStefano

**C196L. Biomedical Systems/Biocybernetics Research Laboratory.** Lecture, one hour; laboratory, three hours; outside study, eight hours. Prerequisite: course M196B or consent of instructor. Special laboratory techniques and experience in biocybernetics research. Laboratory instruments, their use, design, and/or modification for research in life sciences. Special research hardware, firmware, software. Use of simulation in experimental laboratory. Laboratory automation and safety. Comprehensive experiment design. Radioactive isotopes and kinetic studies. Experimental animals, controls. Concurrently scheduled with course C296L.

Mr. DiStefano

**199. Special Studies (2 to 8 units).** Prerequisites: upper division standing, consent of instructor. Individual investigation of selected topic to be arranged with a faculty member. Enrollment request forms available in department office. Occasional field trips may be arranged. May be repeated for credit.

(F,W,Sp)

## Graduate Courses

**201A-201B-201C. Computer Science Seminars (2 units each).** Prerequisite: graduate standing in computer science. Lectures on current research topics in computer science. May be repeated for credit. In Progress and S/U grading.

(F,W,Sp)

**202. Advanced Computer Science Seminar.** Prerequisite: completion of major field examination in computer science or consent of instructor. Current computer science research into theory of, analysis and synthesis of, and applications of information processing systems. Each member completes one tutorial and one or more original pieces of work in the specialized area. May be repeated for credit.

Mr. Estrin (F,W,Sp)

**209AA-209ZZ. Research Seminars: Computer Science (2 to 4 units each).** Prerequisite: consent of instructor. Discussion of advanced topics and current research in algorithmic processes that describe and transform information: theory, analysis, design, efficiency, implementation, and application. May be repeated for credit. S/U grading.

(F,W,Sp)

**212A. Queuing Systems Theory.** Prerequisites: course 112 and Electrical Engineering 131A, or consent of instructor. Resource sharing issues and theory of queuing (waiting-line) systems. Review of Markov chains and baby queuing theory. Method of stages. M/E/1. E<sub>r</sub>/M/1. Bulk arrival and bulk service systems. Series-parallel stages. Fundamentals of open and closed queuing networks. Intermediate queuing theory: M/G/1; G/M/m. Collective marks. Advanced queuing theory: G/G/1; Lindley integral equation; spectral solution. Inequalities, bounds, approximations.

Mr. Kleinrock (W)

**212B. Queueing Applications: Scheduling Algorithms and Queueing Networks.** Prerequisite: course 212A. Priority queueing. Applications to time-sharing scheduling algorithms: FB, Round Robin, Conservation Law, Bounds. Queueing networks: definitions; job flow balance; product form solutions — local balance,  $M \rightarrow M$ ; computational algorithms for performance measures; asymptotic behavior and bounds; approximation techniques — diffusion — iterative techniques; applications.

Mr. Kleinrock, Mr. Muntz

**214. Data Transmission in Computer Communications.** Prerequisites: course 112, graduate standing in computer science. Discrete data streams, formats, rates, transductions; digital data transmissions via analog signaling in computer communication; media characteristics, systems methodologies, performance analysis; modem designs; physical interfaces in computer communication links; national/international standards; tests and measurements.

Mr. Carlyle

**215. Computer Communications and Networks.** Prerequisite: course 112. Resource sharing; computer traffic characterizations; multiplexing; network structure; packet switching and other switching techniques; ARPANET and other computer network examples; network delay and analysis; network design and optimization; network protocols; routing and flow control; satellite and ground radio packet switching; local networks; commercial network services and architectures. Optional topics include extended error control techniques; modems; SDLC, HDLC, X.25, etc.; protocol verification; network simulation and measurement; integrated networks; communication processors.

Mr. Chu, Mr. Kleinrock (W)

**216. Distributed Multiaccess Control in Networks.** Prerequisites: courses 212A, 215. Topics from the field of distributed control and access in computer networks, including terrestrial distributed computer networks; satellite packet switching; ground radio packet switching; local network architecture and control.

Mr. Kleinrock (Sp)

**218. Advanced Computer Networks.** (Formerly numbered 218A.) Lecture, four hours; outside study, eight hours. Prerequisites: courses 112 and 118, or consent of instructor. Review of seven-layer ISO-OSI model. High-speed networks: LANs, MANs, ATM. Flow and congestion control; bandwidth allocation. Interneting.

Mr. Gerla (W)

**219. Current Topics in Computer System Modeling Analysis (2 to 12 units).** Prerequisite: consent of instructor. Review of current literature in an area of computer system modeling analysis in which instructor has developed special proficiency as a consequence of research interests. Students report on selected topics. May be repeated for credit with consent of instructor.

**221. Economics of Computers.** Prerequisite: consent of instructor. Basic economic factors in data processing. Buyers and sellers; products; applications; major cost factors. Selection and operation of a data processing system.

**M222. Control and Coordination in Economics.** (Same as Economics M222A.) Lecture, three hours. Prerequisite: graduate standing in economics or engineering or consent of instructor. Recommended: appropriate mathematics course. Stabilization policies, short- and long-run dynamics and stability analysis; decentralization, coordination in teams; certainty equivalence and separation theorems; stochastic and learning models. Bayesian approach to price and output rate adjustment. S/U or letter grading.

**231A. Advanced Topics in Programming Languages.** Prerequisite: course 131. Presentation, analysis, and discussion of specialized programming languages, new higher-level languages, and new and/or advanced features of programming languages.

**232A. Operational Semantics of Programming Languages.** Lecture, four hours; outside study, eight hours. Prerequisites: courses 131, 181, or equivalent. Introduction to formal semantics. Interpreter-based operational definitions. Induction and structural operational semantics. Proving equivalence between structural and interpreter-based operational definitions. Static and dynamic semantics. Example operational definitions of functional, imperative, concurrent, logic, and object-oriented programming languages.

Mr. Martin (F)

**232B. Semantics of Programming Languages.** Prerequisites: courses 131 and 181, or consent of instructor. Denotational semantics of programming languages. Notation and foundations. Expressions, commands, declarations, and other constructs. Environments, stores, and continuations. Examples. Relations between semantic definitions of programming languages. Applications of current research interest.

Mr. Martin

**233A. Parallel Programming.** Lecture, four hours; other, eight hours. Prerequisites: courses 111, 131. Mutual exclusion and resource allocation in distributed systems; primitives for parallel computation: specification of parallelism, interprocess communication and synchronization, atomic actions, binary and multiway rendezvous; synchronous and asynchronous languages: CSP, ADA, LINDA, MAISIE, UC, and others; introduction to parallel program verification.

Mr. Bagrodia

**233B. Verification of Concurrent Programs.** Lecture, four hours; other, eight hours. Prerequisite: course 233A. Formal techniques for verification of concurrent programs. Topics include safety, liveness, program and state assertion-based techniques, weakest precondition semantics, Hoare logic, temporal logic, UNITY, and axiomatic semantics for selected parallel languages.

Mr. Bagrodia

**234A. Correctness Proofs.** Prerequisite: consent of instructor. Theoretical and practical aspects of correctness proofs. Partial correctness, total correctness, and termination. Axiomatic semantics and proof systems. Abstraction and correctness of implementations. Formulation, execution, and assessment of correctness proofs. Topics of current research interest.

Mr. Martin

**235A. Logic Programming and PROLOG.** Lecture, four hours; outside study, eight hours. Prerequisite: graduate standing in computer science. Logic programming; PROLOG as an approximation thereof; PROLOG programming techniques; translation and definite clause grammars; rewriting and interpreters; implementation of PROLOG; constraint logic programming and other proposed extensions to PROLOG; parallel logic programming systems.

Mr. Parker (Sp)

**239. Current Topics in Computer Science: Programming Languages and Systems (2 to 12 units).** Lecture, four hours. Prerequisite: consent of instructor. Review of current literature in an area of computer science programming languages and systems in which instructor has developed special proficiency as a consequence of research interests. May be repeated for credit with topic change.

**240A. Data Bases and Knowledge Bases.** Lecture, four hours; outside study, eight hours. Prerequisite: course 143. Theoretical and technological foundation of Intelligent Data Base Systems, which merge data base technology, knowledge-based systems, and advanced programming environments. Rule-based knowledge representation, spatio-temporal reasoning, and logic-based declarative querying/programming are salient features of this technology.

Mr. Zaniolo (F)

**241A. Object-Oriented and Semantic Data Base Systems.** (Formerly numbered 241AL.) Lecture, three and one-half hours; recitation, 30 minutes; laboratory, one hour; outside study, eight hours. Prerequisite: course 143 or equivalent. Object and data base principles. Data models and accessing. Data base systems architecture and functional components. Extended relational systems. Object and semantic systems. Systems comparison. Data base design, organization, indexing, and performance. Other topics at discretion of instructor.

Mr. Cardenas (F)

**241B. Pictorial and Multimedia Data Base Systems.** Lecture, three and one-half hours; recitation, 30 minutes; outside study, nine hours. Prerequisites: courses 143, 241A. Pictorial and multimedia information system requirements. Data models and accessing; alternatives. Data base systems. Visual languages and communication. Hypertext. Data base design and organization, logical and physical. Data base heterogeneity and distribution. Other topics at discretion of instructor.

Mr. Cardenas (W)

**243B. Abstract Data Types and Program Specification.** Lecture, four hours; outside study, eight hours. Prerequisites: courses 23 or equivalent, 181. Notions of abstract data type and abstract program specification permit one to understand how programs manipulate data, independently of their implementations. These notions also give powerful techniques for program structuring and verification. Programming exercises.

**249. Current Topics in Data Structures (2 to 12 units).** Prerequisite: consent of instructor. Review of current literature in an area of data structures in which instructor has developed special proficiency as a consequence of research interests. Students report on selected topics. May be repeated for credit with consent of instructor.

**251A. Advanced Computer Architecture.** Lecture, four hours; other, eight hours. Prerequisites: courses 51A, 111, and 151B, or consent of instructor. Functional and structural models of computer systems. Architecture and organization at microprogramming, machine language, and operating system level. Processor organization and system control. Arithmetic processors: algorithms and implementation. Storage system organization: hierarchy and management. Communication organization and control.

Mr. Rennels, Mr. Tamir (F)

**251B. Parallel Computer Architectures.** Prerequisite: course 251A. Parallel algorithmic structures and computer organizations. Effect of sequencing mechanisms, granularity, coupling, and locality. Organizations of control, memory, interconnection, and processing elements. Performance evaluation measures. Detailed discussion of system organization and performance of vector computers, array computers, loop-level multiprocessors, process-level multiprocessors, and data-flow computers.

Mr. Ercegovac, Mr. Tamir

**252A. Computer System Design: Arithmetic Processors.** Prerequisite: course 251A or consent of instructor. Concepts of number systems, digital numbers, algorithms; logic and organization of digital arithmetic processors; conventional arithmetic; algorithm acceleration; floating-point and significance arithmetics; redundant, signed-digit, residue number systems; error detecting codes for digital arithmetic; algorithm evaluation by analysis and simulation.

Mr. Avizienis, Mr. Ercegovac

**253A. Computer System Design: Fault Tolerance.** Prerequisite: course 251A. Specification of fault-tolerance: fault classes, measures of reliability. Fault masking, fault detection, and system recovery algorithms. Methodology of implementation. Analytic modeling and evaluation. Design of fault-tolerance systems. Tolerance of man-made faults. Fault-tolerant software.

Mr. Avizienis, Mr. Rennels

**253B. Advanced Topics in Fault-Tolerant Computing.** Prerequisite: course 253A. Analysis and discussion of modeling, design, and evaluation of fault-tolerant computer systems. Emphasis on current research results and new systems in stages of design and development. May be repeated for credit with topic change.

Mr. Avizienis, Mr. Rennels

**253C. Testing and Testable Design of VLSI Systems.** Lecture, four hours; outside study, eight hours. Prerequisite: course 51A or consent of instructor. Detailed study of various problems in testing and testable designs of VLSI systems, including fault modeling, fault simulation, testing for single stuck faults and multiple stuck faults, functional testing, design for testability, compression techniques, and built-in self-test. Mr. Cong (Sp)

**254A. Computer Memories and Memory Systems.** Prerequisite: course 251A or consent of instructor. Generic types of memory systems; control, access modes, hierarchies, and allocation algorithms. Characteristics, system organization, and device considerations of ferrite memories, thin film memories, and semiconductor memories. Mr. Chu, Mr. Rennels

**255A. Distributed Processing and Distributed Data Base System.** Lecture, four hours; outside study, eight hours. Prerequisite: course 241A or 251A. Interprocess communications, remote procedure calls, bus structures. Task partitioning and allocation, precedence relationship, response time models, microprocessor-based distributed processing systems, system reconfiguration, error recovery. File allocation, directory design, deadlock, synchronization, commit protocols, query optimization, semantic query optimization, knowledge-base and data base systems. Examples, design, and trade-offs. Mr. Chu (W)

**256A. Principles and Examples of Architectures for VLSI Implementation.** Prerequisites: courses 111, 251A, consent of instructor. Capabilities and implementations of VLSI technology. Architectures that exploit these capabilities and overcome the limitations. Interdependency of system and chip architectures. General-purpose and special-purpose VLSI systems. Wafer-scale integration. Current research areas. Examples of chips and systems. Mr. Tamir

**M258A. LSI in Computer System Design.** (Same as Electrical Engineering M216A.) Lecture, four hours; laboratory, four hours. Prerequisites: graduate standing in computer science or electrical engineering, consent of instructor. LSI/VLSI design and application in computer systems. Fundamental design techniques that can be used to implement complex integrated systems on a chip. Mr. Rennels

**M258B-M258C. LSI in Computer System Design.** (Same as Electrical Engineering M216B-M216C.) Lecture, four hours; laboratory, four hours. Prerequisite: course M258A. LSI/VLSI design and application in computer systems. In-depth studies of VLSI architectures and VLSI design tools. In Progress grading. Mr. Rennels

**258D. VLSI CAD Techniques.** Prerequisite: graduate standing in computer science or electrical engineering or consent of instructor. In-depth study of latest advances in computer-aided VLSI design techniques, including building block layout, placement and routing algorithms, simulation, design verification and timing, analog/digital synthesis techniques, testing, silicon compilation, expert system applications, and automatic performance optimization. Mr. McNamee

**258E. Foundations of VLSI CAD Algorithms.** Lecture, four hours; other, eight hours. Prerequisites: one course in analysis and design of algorithms, consent of instructor. Basic theory of combinatorial optimization for VLSI physical layout, including mathematical programming, network flows, matching, greedy and heuristic algorithms, and stochastic methods. Emphasis on practical application to the computer-aided physical design of VLSI circuits at the high-level phases of layout: partitioning, placement, graph folding, floorplanning, and global routing. Mr. Kahng

**258F. Physical Design Automation of VLSI Systems.** Lecture, four hours; other, eight hours. Prerequisite: consent of instructor. Detailed study of various physical design automation problems of VLSI circuits, including logic partitioning, floorplanning, placement, global routing, channel and switchbox routing, planar routing and via minimization, compaction and performance-driven layout. Discussions of applications of a number of important optimization techniques, such as network flows, Steiner trees, simulated annealing, and generic algorithms. Mr. Cong (Sp)

**259. Current Topics in Computer Science: System Design/Architecture (2 to 12 units).** Lecture, four hours. Prerequisite: consent of instructor. Review of current literature in an area of computer science system design in which instructor has developed special proficiency as a consequence of research interests. Students report on selected topics. May be repeated for credit with topic change.

**261A. Problem Solving and Search.** Lecture, four hours; outside study, eight hours. Prerequisite: course 23 or equivalent. Examination in depth of that part of artificial intelligence concerned with problem-solving behavior, including problem spaces, brute-force search, heuristic search, two-player game searches, planning, subgoaling, GPS, macro-operators, and abstraction. Emphasis on mathematical rigor and complexity analyses of search algorithms. Mr. Korf (F)

**262A. Reasoning with Partial Beliefs.** Prerequisite: course 112 or Electrical Engineering 131A or equivalent. Review of several formalisms for representing and managing uncertainty in reasoning systems; presentation of comprehensive description of Bayesian inference using belief networks representation. Mr. Pearl (F)

**262B. Knowledge-Based Systems.** Prerequisite: course 262A. Machine representation of judgmental knowledge and uncertain relationships. Inference on inexact knowledge bases. Rule-based systems — principles, advantages, and limitations. Signal understanding. Automated planning systems. Knowledge acquisition and explanation producing techniques. Mr. Pearl

**262C. Computer Methods of Data Analysis and Model Formation.** Prerequisite: course 112 or equivalent or consent of instructor. Techniques of using computers to interpret, summarize, and form theories of empirical observations. Mathematical analysis of trade-offs between computational complexity, storage requirements, and precision of computerized models. Mr. Pearl

**262Z. Current Topics in Cognitive Systems.** Prerequisites: course 262A, consent of instructor, additional prerequisites for each offering as announced in advance by department. Theory and implementation of systems which emulate or support human reasoning. Current literature and individual studies in artificial intelligence, knowledge-based systems, decision support systems, computational psychology, and heuristic programming theory. May be repeated for credit with topic change. Mr. Pearl (W)

**263A. Language and Thought.** Prerequisite: consent of instructor. Recommended: understanding of LISP. Introduction to natural language processing. Representation and manipulation of conceptualizations underlying processes of thought for natural language comprehension and generation. Process models of story comprehension, question answering, paraphrasing, machine translation. Conceptual dependency theory, scripts, plans, goals, expectation-based parsing. Mr. Dyer (F or W)

**263B. Language and Memory.** Prerequisites: course 263A, knowledge of LISP or PROLOG. Recommended: course 264A. Advanced natural language processing. Emphasis on organization of human memory for language comprehension. Episodic and semantic memory. Subjective understanding and modeling ideologies. Language acquisition, processes of generalization during comprehension. Cross-contextual reminders and thematic abstraction. Mr. Dyer (W or Sp)

**264A. Artificial Intelligence Programming I.** Prerequisite: consent of instructor. Recommended: knowledge of LISP or PROLOG. Introduction to tools, techniques, and issues in artificial intelligence programming. Functional programming for artificial intelligence applications. Review of LISP and introduction to lexically scoped LISPs (e.g., T, Scheme). Lambda calculus, closures, data-driven and object-oriented programming, flavors, d-nets, resolution-based deductive systems. Mr. Dyer

**264B. Artificial Intelligence Programming II.** Prerequisite: course 264A or consent of instructor. Techniques of logic programming. Artificial intelligence programming languages (e.g., PROLOG, AMORD, DUCK, CONNIVER, PLANNER, QA4, KR, ACTORS, etc.) and artificial intelligence features (e.g., nonmonotonic logics, data-dependencies for truth maintenance, meta-rules, semantic networks, frame-based systems). Mr. Dyer

**265A. Machine Learning.** Prerequisites: courses 263A, 264A, consent of instructor. Introduction to machine learning. Learning by analogy, inductive learning, modeling creativity, learning by experience, role of episodic memory organization in learning. Examination of BACON, AM, EURISKO, HACKER, teachable production systems. Failure-driven learning. Mr. Dyer

**267A. Neural Models.** Prerequisites: graduate standing, consent of instructor. Review of major neurophysiological milestones in understanding brain architecture and processes. Focus on brain theories that are important for modern computer science and, in particular, on models of sensory perception, sensory-motor coordination, and cerebellar and cerebral structure and function. Students required to prepare a paper analyzing research in one area of interest. Mr. Vidal

**267B. Artificial Neural Systems and Connectionist Computing.** Prerequisites: graduate standing, consent of instructor. Analysis of major connectionist computing paradigms and underlying models of biological and physical processes. Examination of past and current implementations of artificial neural networks along with their applications to associative knowledge processing, general multisensor pattern recognition including speed and vision, and adaptive robot control. Students required to prepare a paper analyzing research in one area of interest. Mr. Vidal

**268. Machine Perception.** Prerequisites: graduate standing, consent of instructor. Course 168 may be taken concurrently. Computational aspects of processing visual and other sensory information. Unified treatment of early vision in man and machine. Integration of symbolic and iconic representations in process of image segmentation. Computing multimodal sensory information by "neural-net" architectures. Mr. Skrzypek

**268CN. Computational Neuroscience.** Lecture, four hours; discussion, two hours; outside study, eight hours. Prerequisite: consent of instructor. Computational neuroscience as a paradigm of formal analysis and demonstrations of how to correctly interpret sensory data by discovering constraints from the natural world. Neural networks and connectionist models as a paradigm for parallel and concurrent computation and application to problem of vision, multimodal sensory interpretation, and learning. Mr. Skrzypek (W)

**268S. Seminar: Computational Neuroscience (2 units).** Prerequisite: consent of instructor. Intended for students undertaking thesis research. Discussion of advanced topics and current research in computational neuroscience. Neural networks and connectionism as a paradigm for parallel and concurrent computation in application to problems of perception, vision, multimodal sensory integration, and robotics. May be repeated for credit. S/U grading. Mr. Skrzypek

**269. Seminar: Current Topics in Artificial Intelligence (2 to 4 units).** Prerequisite: consent of instructor. Review of current literature and research practicum in an area of artificial intelligence in which instructor has developed special proficiency as a consequence of research interests. Students report on selected topics. May be repeated for credit with topic change.



**270A. Computer Methodology: Advanced Numerical Methods.** Prerequisites: graduate standing in computer science or engineering, Electrical Engineering 103 or Mathematics 141B or comparable experience with numerical computing. Principles of computer treatment of selected numerical problems in algebraic and differential systems, transforms and spectra, data acquisition and reduction; emphasis on concepts pertinent to modeling and simulation and the applicability of contemporary developments in numerical software. Computer exercises. Mr. Carlyle, Mr. Karplus (F)

**271A. Modeling and Simulation of Lumped Parameter Systems.** Lecture, eight hours. Recommended (but not prerequisite): course 270A or equivalent. Characterization of electrical, electromechanical, and other engineering problems by systems of nonlinear ordinary differential equations. Survey of integration algorithms. Digital simulation languages for continuous systems. Real-time simulation using array processor and multi-processor computer systems. Mr. Karplus (W)

**271B. Modeling and Simulation of Distributed Parameter Systems.** Lecture, eight hours. Recommended (but not prerequisite): course 270A or equivalent. Mathematical formulation of engineering field problems governed by partial differential equations. Finite difference and finite element approximations. Principal algorithms for solving elliptic, parabolic, and hyperbolic partial differential equations. Supercomputers, vector processors, multiprocessors, and array processors. Mr. Karplus (Sp)

**271C. Seminar: Advanced Simulation Methods (2 units).** Prerequisite: course 271A or equivalent. Discussion of advanced topics in simulation of systems characterized by ordinary and partial differential equations. Topics include (among others) simulation languages, dataflow machines, array processors, and advanced mathematical modeling techniques. Topics vary each term. May be repeated for credit. S/U grading. Mr. Karplus

**272. Advanced Discrete Event Simulation and Modeling Techniques.** Lecture, four hours; outside study, eight hours. Prerequisite: course 172 or consent of instructor. In-depth study in discrete event simulation and modeling techniques, including building valid and credible simulation models, output analysis of systems, comparisons of alternative system configurations. Variance reduction techniques, simulation models of computer systems and manufacturing systems. Mr. McNamee (Sp)

**273A. Digital Processing of Engineering and Statistical Data.** Prerequisite: course 173. Computer methods for processing engineering and statistical data. Algorithms to evaluate recursive filter functions, Fourier series, power spectral, analysis correlation computations, and statistical testing. Mr. McNamee

**276A. Pattern Analysis and Machine Intelligence.** Prerequisites: graduate standing, consent of instructor. Fundamentals of pattern recognition, feature extraction and selection, autonomous learning, clustering, and machine intelligence. Mr. Klinger

**276B. Structured Computer Vision.** Prerequisites: graduate standing, consent of instructor. Methods for computer processing of image data. Systems, concepts, and algorithms for image analysis, radiologic and robotic applications. Mr. Klinger

**276C. Speech and Language Communication in Artificial Intelligence.** Prerequisite: course 276A or 276B or consent of instructor. Topics in human-computer communication: interaction with pictorial information systems, sound and symbol generation by humans and machines, semantics of data, systems for speech recognition and understanding. Use of speech and text for computer input and output in applications. Mr. Klinger

**279. Current Topics in Computer Science: Methodology (2 to 12 units).** Lecture, four hours. Prerequisite: consent of instructor. Review of current literature in an area of computer science methodology in which instructor has developed special proficiency as a consequence of research interests. Students report on selected topics. May be repeated for credit with topic change. (F,W,Sp)

**280A-280ZZ. Algorithms.** Lecture, four hours; outside study, eight hours. Prerequisites: course 180 or equivalent, consent of instructor, additional prerequisites for each offering as announced in advance by department. Selections from design, analysis, optimization, and implementation of algorithms; computational complexity and general theory of algorithms; algorithms for particular application areas. Subtitles of some current sections: Principles of Design and Analysis (280A); Distributed Algorithms (280D); Graphs and Networks (280G). May be repeated for credit with consent of instructor and with topic change. Ms. Greibach (F,W,Sp)

**281A. Computability and Complexity.** Prerequisite: course 181 or compatible background. Concepts fundamental to study of discrete information systems and theory of computing, with emphasis on regular sets of strings, Turing-recognizable (recursively enumerable) sets, closure properties, machine characterizations, nondeterminisms, decidability, unsolvable problems, "easy" and "hard" problems. PTIME/NPTIME. Ms. Greibach, Mr. Parker (Sp)

**281D. Discrete State Systems.** Prerequisite: consent of instructor. Recommended: course 181. Finite-state machines, transducers, and their generalizations; regular expressions, transduction expressions, realizability; decomposition, synthesis, and design considerations; topics in state and system identification and fault diagnosis, linear machines, probabilistic machines, applications in coding, communication, computing, system modeling, and simulation. Mr. Carlyle

**284A-284ZZ. Topics in Automata and Languages.** Prerequisites: course 181, additional prerequisites for each offering as announced in advance by department. Selections from families of formal languages, grammars, machines, operators; pushdown automata, context-free languages and their generalizations, parsing; multidimensional grammars, developmental systems; machine-based complexity. Subtitles of some current and planned sections: Context-Free Languages (284A), Parsing Algorithms (284P). May be repeated for credit with consent of instructor and with topic change. Ms. Greibach

**287A. Theory of Program Structure.** Prerequisite: course 181. Models of computer programs and their syntax and semantics; emphasis on programs and recursion schemes; equivalence, optimization, correctness, and translatability of programs; expressive power of program constructs and data structures; selected current topics. Ms. Greibach

**288S. Seminar: Theoretical Computer Science (2 units).** Prerequisites: courses 280A, 281A, consent of instructor. Intended for students undertaking thesis research. Discussion of advanced topics and current research in such areas as algorithms and complexity models for parallel and concurrent computation, and formal language and automata theory. May be repeated for credit. S/U grading. Ms. Greibach (F,W,Sp)

**289A-289ZZ. Current Topics in Computer Theory (2 to 12 units each).** Prerequisite: consent of instructor. Review of current literature in an area of computer theory in which instructor has developed special proficiency as a consequence of research interests. Students report on selected topics.

**M296A. Modeling Methodology for Biomedical Systems.** (Same as Medicine M270C.) Lecture, four hours; outside study, eight hours. Recommended (but not prerequisite): course M196B, some intermediate knowledge of linear systems analysis or linear algebra (e.g., Mathematics 115A, Electrical Engineering 141, 142, Mechanical, Aerospace, and Nuclear Engineering 171A, 171C, or equivalent). Development of dynamic systems modeling methodology for physiological, biomedical, pharmacological, chemical, and related systems, including dynamic system experiment/model development, multicompartmental, non-compartmental, and input/output models, linear and nonlinear. Emphasis on model applications, limitations, and relevance in biomedical sciences and other limited data environments. Problem solving in PC laboratory. Mr. DiStefano

**M296B. Optimal Parameter Estimation and Experiment Design for Biomedical Systems.** (Same as Biomathematics M270 and Medicine M270D.) Lecture, four hours; outside study, eight hours. Prerequisite: course M296A or consent of instructor. Estimation methodology and model parameter estimation algorithms for quantifying (fitting) dynamic system models to real-world data. Theory and algorithms for designing optimal experiments for developing and quantifying models, with special focus on data sampling schedule design. Exploration in PC laboratory of applications software for model building and optimal experiment design. Mr. DiStefano

**M296C. Advanced Topics and Research in Biomedical Systems Modeling and Computing.** (Same as Medicine M270E.) Lecture, four hours; outside study, eight hours. Prerequisite: course M296A or consent of instructor. Research techniques and experience on special topics involving models, modeling methods, and model/computing in biological and medical sciences. Review and critique of the literature. Research problem searching and formulation. Approaches to solutions. Individual M.S.- and Ph.D.-level project training. Mr. DiStefano

**C296L. Biomedical Systems/Biocybernetics Research Laboratory.** Lecture, one hour; laboratory, three hours; outside study, eight hours. Prerequisite: course M196B or consent of instructor. Special laboratory techniques and experience in biocybernetics research. Laboratory instruments, their use, design, and/or modification for research in life sciences. Special research hardware, firmware, software. Use of simulation in experimental laboratory. Laboratory automation and safety. Comprehensive experiment design. Radioactive isotopes and kinetic studies. Experimental animals, controls. Concurrently scheduled with course C196L. Mr. DiStefano

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading. Mr. Chu (F,W,Sp)

**495. Teaching Assistant Training Seminar (2 units).** Prerequisite: graduate standing in Computer Science Department. Seminar on communication of computer science materials in classroom: preparation, organization of material, presentation, use of visual aids, grading, advising, and rapport with students. S/U grading.

**497D-497E. Field Projects in Computer Science.** Prerequisite: consent of instructor. Students are divided into teams led by instructor; each team is assigned an external company or organization which they investigate as a candidate for possible computerization, submitting a team report of their findings and recommendations. In Progress grading. Mr. Cardenas, Mr. Melkanoff

**596. Directed Individual or Tutorial Studies (2 to 8 units).** Prerequisites: graduate standing in computer science, consent of instructor. Petition forms to request enrollment may be obtained from assistant dean, Graduate Studies. Supervised investigation of advanced technical problems. S/U grading.

**597A. Preparation for M.S. Comprehensive Examination (2 to 12 units).** Prerequisites: graduate standing in computer science, consent of instructor. Reading and preparation for M.S. comprehensive examination. S/U grading.

**597B. Preparation for Ph.D. Preliminary Examinations (2 to 16 units).** Prerequisites: graduate standing in computer science, consent of instructor. S/U grading.

**597C. Preparation for Ph.D. Oral Qualifying Examination (2 to 16 units).** Prerequisites: graduate standing in computer science, consent of instructor. Preparation for oral qualifying examination, including preliminary research on dissertation. S/U grading.

**598. Research for and Preparation of M.S. Thesis (2 to 12 units).** Prerequisites: graduate standing in computer science, consent of instructor. Supervised independent research for M.S. candidates, including thesis prospectus. S/U grading.

**599. Research for and Preparation of Ph.D. Dissertation (2 to 16 units).** Prerequisites: graduate standing in computer science, consent of instructor. Petition forms to request enrollment may be obtained from assistant dean, Graduate Studies. S/U grading.

## Economics/System Science (Interdepartmental)

For details on this undergraduate program, see Chapter 5 on the College of Letters and Science.

## Electrical Engineering

58-121 Engineering IV, (310) 825-2647

### Professors

Nicolaos G. Alexopoulos, Ph.D.  
A.V. Balakrishnan, Ph.D.  
Francis F. Chen, Ph.D.  
Harold R. Fetterman, Ph.D.  
Tatsuo Itoh, Ph.D. (*TRW Professor of Electrical Engineering*)  
Stephen E. Jacobsen, Ph.D., *Associate Dean*  
Chandrashekhar J. Joshi, Ph.D.  
Nhan Levan, Ph.D. (*Distinguished Teaching Award*)  
Neville C. Luhmann, Jr., Ph.D.  
C. Kumar N. Patel, Ph.D.  
Yahya Rahmat-Samii, Ph.D.  
Izhak Rubin, Ph.D.  
Oscar M. Stafsudd, Jr., Ph.D., *Vice Chair*  
Chand R. Viswanathan, Ph.D. (*Distinguished Teaching Award*)  
Kang-Lung Wang, Ph.D., *Chair*  
Paul K.C. Wang, Ph.D.  
Donald M. Wiberg, Ph.D.  
Alan N. Willson, Jr., Ph.D., *Associate Dean*  
Eli Yablonovitch, Ph.D.  
Kung Yao, Ph.D.  
Frederick G. Allen, Ph.D., *Emeritus*  
Robert S. Elliott, Ph.D., *Emeritus (Distinguished Teaching Award)*  
Richard E. Mortensen, Ph.D., *Emeritus*  
H.J. Orchard, M.Sc., *Emeritus*  
Frederick W. Schott, Ph.D., *Emeritus*  
Gabor C. Temes, Ph.D., *Emeritus*

### Associate Professors

Asad A. Abidi, Ph.D., *Vice Chair*  
Rajeev Jain, Ph.D.  
Brian H. Kolner, Ph.D.  
Jia-Ming Liu, Ph.D.  
Stephen A. Maas, Ph.D.  
Dee-Son Pan, Ph.D., *Vice Chair*  
Henry Samuelli, Ph.D.  
Jason C.S. Woo, Ph.D.

Ming-Chiang Wu, Ph.D.  
Ellis F. King, M.S., *Emeritus*  
Jack Willis, B.Sc., *Emeritus*

### Assistant Professors

Abeer A.H. Alwan, Ph.D.  
Nicholas Bambos, Ph.D.  
Bahram Jalali, Ph.D.  
Ioannis Kanellakopoulos, Ph.D.  
Kristofer S. Pister, Ph.D.  
Gregory J. Pottie, Ph.D.  
John D. Villasenor, Ph.D.

### Adjunct Professors

Timothy T. Fong, Ph.D.  
Pyotr Y. Ufimtsev, Ph.D.

### Adjunct Associate Professors

Kenneth W. Liff, Ph.D.  
Lawrence E. Larson, Ph.D.

## Scope and Objectives

The Electrical Engineering Department emphasizes teaching and research in the fields of applied plasma physics, signal processing, communications and telecommunications, control systems, electromagnetics, integrated circuits and systems, microwave and millimeter wave electronics, operations research, quantum electronics, and solid-state electronics. In each of these fields, the department has state-of-the-art research programs exploring exciting new concepts and developments. Undergraduate students receive a B.S. degree in Electrical Engineering. Graduate research and training programs leading to the M.S. and Ph.D. degrees are also offered.

Laboratories are available for research in the following areas: analog and digital electronics, hybrid integrated circuits, integrated semiconductor devices, microwave and millimeter wave electronics, fiber optics, lasers and quantum electronics, and applied plasma physics. The department is associated with the Center for High-Frequency Electronics and the Institute of Plasma and Fusion Research, two research centers at UCLA.

## Bachelor of Science in Electrical Engineering

The ABET-accredited electrical engineering curriculum gives an excellent background for either graduate study or employment. The two main objectives are to provide (1) a deep and fundamental education in electrical engineering as well as in basic sciences and mathematics and (2) specialized education in one branch of electrical engineering so that the student develops expertise in it.

### The Major

Course requirements are as follows (186 minimum units required):

(1) Five core courses: Electrical Engineering 101, 102, 103, and two courses from Civil Engineering 108, Materials Science and Engineering

14, Mechanical, Aerospace, and Nuclear Engineering 102, 103, M105A (or Chemical Engineering M105A), 105D.

(2) Electrical Engineering 10, 110, 115A, 121A, 121B, 132A, 141, 161, Computer Science 51A, Mathematics 132; four two-unit courses selected from the laboratory courses offered by the Electrical Engineering Department, Computer Science 152A, 152B and, by petition only, Electrical Engineering 199; Mechanical, Aerospace, and Nuclear Engineering 192A and either Electrical Engineering 131A or a course in statistical mechanics.

(3) Any five major field elective courses (20 units) selected from those offered by the Electrical Engineering Department. With approval of the adviser, two may be selected from courses related to electrical engineering in other departments.

(4) Chemistry and Biochemistry 11A, 11B/11BL; Electrical Engineering 5C; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A/8AL, 8B/8BL, 8C/8CL, 8D/8DL.

(5) SEAS general education (GE) course requirements — see "Curricular Requirements" (item 4) earlier in this chapter for details.

## Graduate Study

For information on graduate admission to the electrical engineering program and requirements for the M.S. and Ph.D. degrees, see "Graduate Study" at the beginning of this chapter.

## Lower Division Courses

**2. Principles and Advances in Electrical Engineering.** Lecture, three hours; outside study, nine hours. Open to freshmen and sophomores outside the School of Engineering and Applied Science. Particularly intended for students in humanities and arts. Topics include elementary treatment of fundamental concepts and advances in electrical engineering. P/NP grading. Mr. Viswanathan (F)

**5C. Introduction to UNIX and C.** (Formerly numbered 5.) Lecture, three hours; recitation, one hour; laboratory, five hours; outside study, three hours. Introduction to UNIX environment and C programming language. UNIX basics: file structure and manipulation. Technical document preparation. C-shell programming. Elementary C language concepts: input-output, variable types, operators, statements, arrays, and functions. Mr. Pister, Mr. Villasenor (F,W,Sp)

**6C. Problem Solving with C.** Lecture, three hours; recitation, one hour; laboratory, five hours; outside study, three hours. Prerequisite: course 5C. C language constructs: pointers, multidimensional arrays, structures, macros, and advanced functions. Data structures: linked lists, trees, and hash tables. Algorithmic, procedural problem solving. C/UNIX interaction. Mr. Pister, Mr. Villasenor (W,Sp)

**10. Circuit Analysis I.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisite: Physics 8C. Corequisite: Mathematics 33A. Introduction to linear circuit analysis. Resistive circuits, Kirchhoff laws, operational amplifiers, node and loop analysis, Thevenin and Norton theorem, capacitors and inductors, duality, first-order circuits, step response, second-order circuits, natural response, forced response.

Mr. Samuelli (F,Sp)

## Upper Division Courses

**100. Electrical and Electronic Circuits.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisites: Mathematics 33A, 33B, Physics 8C. Electrical quantities, linear circuit elements, circuit principles, signal waveforms, transient and steady-state circuit behavior, semiconductor diodes and transistors, small signal models, and operational amplifiers. Mr. Samuelli (F,W,Sp)

**101. Engineering Electromagnetics.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisites: Physics 8C, Mathematics 32A and 32B, or 33A and 33B. Electromagnetic field concepts, Maxwell equations, static and quasi-static electric and magnetic fields, energy flow and Poynting vector, waves in unbounded media, reflection and transmission of plane waves, radiation and antennas. Mr. Alexopoulos, Mr. Rahmat-Samii (F,W)

**102. Systems and Signals.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisites: Mathematics 33A, 33B, Physics 8C. Systems: input-output description, linearity, time-invariance, and causality. Impulse response functions, superposition and convolution integrals. Laplace transforms and system functions. Periodic signals. Fourier series and transforms. Frequency responses, responses of systems to periodic signals. Sampling theorem. Discrete-time systems and elements of z-transforms. Mr. Levan (F,W,Sp)

**103. Applied Numerical Computing.** Lecture, three hours; recitation, one hour; outside study, 11 hours. Prerequisites: course 5C or Computer Science 10C or 10F, Mathematics 33A, 33B. Introduction to numerical analysis and computing techniques: root finding, matrix computations for systems of linear equations, systems of nonlinear equations, numerical methods for ordinary differential equations, least squares, eigenvalue/eigenvector problem, applications to engineering problems. Mr. Jacobsen (F,W,Sp)

**110. Circuit Analysis II.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisite: course 10. Corequisite: course 102. Sinusoidal excitation and phasors. AC steady state analysis, AC steady state power, network functions, poles and zeros, frequency response, mutual inductance, ideal transformer, application of Laplace transforms to circuit analysis. Mr. Samuelli (F,W)

**110L. Circuit Measurements Laboratory (2 units).** Laboratory, four hours; outside study, two hours. Prerequisite: course 10 or 100. Experiments with basic circuits containing resistors, capacitors, inductors, and op-amps. Ohm's law, voltage and current division, Thevenin and Norton equivalent circuits, superposition, transient and steady state analysis, and frequency response principles. Mr. Samuelli (F,W,Sp)

**113. Digital Signal Processing.** Lecture, three hours; recitation, one hour; outside study, nine hours. Prerequisites: courses 102, 110. Relationship between continuous-time and discrete-time signals. Z-transform. Discrete Fourier transform. Fast Fourier transform. Structures for digital filtering. Introduction to digital filter design techniques. Mr. Villasenor (F,Sp)

**113L. Digital Signal Processing Laboratory (2 units).** Laboratory, four hours; outside study, two hours. Prerequisite: course 113. Recommended: Computer Science 151B. Real-time implementation of digital signal processing algorithms on digital processor chips. Experiments involving A/D and D/A conversion, aliasing, digital filtering, sinusoidal oscillators, Fourier transforms, and finite wordlength effects. Ms. Alwan, Mr. Villasenor (F,W,Sp)

**114. Introduction to Speech and Image Processing.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisite: course 113. Basic principles of data acquisition, filtering, feature extraction, transforms. Acoustic theory of speech production, speech analysis techniques, and modeling perceptual mechanisms in first half of course; image representation and basic image processing techniques in second half. Lecture supplemented by computer laboratory assignments. Ms. Alwan, Mr. Villasenor (W)

**115A. Analog Electronic Circuits I.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisite: course 110. Equivalent circuit modeling of electron devices. Device/circuit/environment interactions. Design of single-stage amplifiers. Introduction to cascaded stages, coupling problems, and frequency responses. Mr. Abidi (W,Sp)

**115AL. Analog Electronics Laboratory I (2 units).** Laboratory, four hours; outside study, two hours. Prerequisite: course 110L. Recommended: course 115A. Experimental determination of device characteristics, resistive diode circuits, single-stage amplifiers, compound transistor stages, effect of feedback on single-stage amplifiers. Mr. Abidi (F,W,Sp)

**115B. Analog Electronic Circuits II.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisite: course 115A. Electron device/circuit/environment interactions, with emphasis on multistage amplifiers. Tuned amplifier considerations. Nonlinear situations requiring graphical method of solution. Emphasis on design techniques, including economics, reliability, and realization of performance specifications. Mr. Abidi (F,Sp)

**115BL. Analog Electronics Laboratory II.** Laboratory, four hours; outside study, eight hours. Prerequisite: course 115AL. Recommended: course 115B. Experimental and computer studies of multistage, wideband, tuned, and power amplifiers, and multiloop feedback amplifiers. Introduction to thick film hybrid techniques. Construction of amplifier using hybrid thick film techniques. Mr. Abidi (F,W,Sp)

**115C. Digital Electronic Circuits.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisites: courses 115A, 115B, Computer Science 51A. Bipolar and CMOS device characteristics, circuit analysis and design techniques, modern logic families (TTL, I<sup>2</sup>L, ECL, NMOS, CMOS), IC layout, MSI digital circuits (flipflops, registers, counters, PLAs, etc.), computer-aided simulation. Mr. Abidi (F,W)

**115D. Applied Electronic Circuits (3 units).** Lecture, three hours; outside study, six hours. Prerequisites: courses 115B, 115C, 118. Applications of distributed circuits. Operational amplifier applications and limitations. Power amplifiers. Feedback and stability. Precision and analog circuits. Mr. Abidi (W)

**116. Communication Circuits (3 units).** Lecture, three hours; outside study, six hours. Prerequisites: courses 113, 115B, 132A. Review of analog and digital radio communication techniques. Noise, nonlinear distortion, automatic gain control, data transmission filters. Analog and digital oscillators and phase-locked loops. Basic modulation and demodulation techniques. Mr. Samuelli (Sp)

**118. Integrated Circuit Components.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisites: courses 115B, 121B. Realization of active and passive components in integrated circuit design. Passive components: resistors, capacitors, metal interconnections. Active devices: NPN and PNP BJTs, design rules; FET devices. Device interactions and layout rules. Mr. Abidi (F)

**121A. Physical Principles of Semiconductor Devices.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisites: Materials Science and Engineering 14, and Chemistry 11B or Physics 8E. Introduction to physics of semiconductors; survey of equilibrium and nonequilibrium electronic processes in semiconductors; principles of operation and design of p-n junction devices. Fabrication of semiconductor devices. Mr. Viswanathan (F,W)

**121B. Principles of Semiconductor Device Design.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisite: course 121A. Introduction to principles of operation of bipolar and MOS transistors, equivalent circuits, high-frequency behavior, voltage limitations. Mr. Viswanathan (W,Sp)

**122AL. Semiconductor Devices Laboratory.** Lecture, one hour; laboratory, six hours; outside study, five hours. Prerequisites: courses 121A, 121B (may be taken concurrently). Design fabrication and characterization of p-n junction and transistors. Students perform various processing tasks such as wafer preparation, oxidation, diffusion, metallization, and photolithography. Mr. Woo (F,Sp)

**122BL. Solid-State Electronics Laboratory (2 units).** Laboratory, four hours. Prerequisite: course 124. Experimental measurement of electronic, magnetic, thermal, and optical properties of p- and n-type semiconductors as used in design of devices. Mr. K. Wang, Mr. Woo (W)

**123A. Fundamentals of Solid-State I.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisites: junior standing in engineering, Physics 8E. Fundamentals of solid-state, introduction to quantum mechanics and quantum statistics applied to solid-state. Crystal structure, energy levels in solids, and band theory and semiconductor properties. Mr. Fetterman (F)

**123B. Fundamentals of Solid-State II.** Lecture, three hours; outside study, nine hours. Prerequisite: course 123A. Discussion of solid-state properties, lattice vibrations, thermal properties, dielectric, magnetic, and superconducting properties. Mr. Stafsudd (W)

**124. Semiconductor Physical Electronics.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisite: course 123A. Band structure of semiconductors, experimental probes of basic band structure parameters, statistics of carriers, carrier transport properties at low fields, excess carrier transport properties, carrier recombination mechanisms, heterojunction properties. Mr. Pan (Sp)

**131A. Probability.** Lecture, four hours; recitation, one hour; outside study, 10 hours. Prerequisites: course 102, Mathematics 32B, 33B. Introduction to basic concepts of probability, including random variables and vectors, distributions and densities, moments, characteristic functions, and limit theorems. Applications to communication, control, and signal processing. Introduction to computer simulation and generation of random events. Mr. Rubin (F,W)

**131B. Introduction to Stochastic Processes (5 units).** Lecture, four hours; outside study, 11 hours. Prerequisite: course 131A. Introduction to concepts of stochastic processes, emphasizing continuous- and discrete-time stationary processes, correlation function and spectral density, linear transformation, and mean-square estimation. Applications to communication, control, and signal processing. Introduction to computer simulation and analysis of stochastic processes. Mr. Yao (Sp)

**132A. Introduction to Communication Systems (5 units).** Lecture, four hours; recitation, one hour; outside study, 10 hours. Prerequisites: courses 102, 131A. Properties of signals and noise. Baseband pulse and digital signaling. Bandpass signaling techniques. Communication systems: digital transmission, frequency-division multiplexing and telephone systems, satellite communication systems. Performance of communication systems in presence of noise. Mr. Bambos (W,Sp)

**132B. Data Communications and Telecommunication Networks (5 units).** Lecture, four hours; recitation, one hour; outside study, 10 hours. Prerequisite: course 131A. Layered communications architectures. Queueing system modeling and analysis. Error control, flow and congestion control. Packet switching, circuit switching, and routing. Network performance analysis and design. Multiple-access communications: TDMA, FDMA, polling, random access. Local, metropolitan, wide area, integrated services networks. Mr. Rubin (W)

**136. Introduction to Engineering Optimization Techniques.** Lecture, four hours; recitation, one hour; outside study, seven hours. Prerequisites: course 103, Mathematics 32A, and 33A, or consent of instructor. Introduction to optimization techniques for engineering and science students. Minimization of unconstrained functions of several variables: steepest descent, Newton/Raphson, conjugate gradient, and quasi-Newton methods. Rates of convergence. Methods for constrained minimization: introduction to linear programming and gradient projection methods. Lagrangian methods. Students expected to use SEASnet computers. Mr. Jacobsen (W)

**141. Principles of Feedback Control.** Lecture, three hours; recitation, one hour; laboratory, one hour; outside study, seven hours. Prerequisite: course 102 or consent of instructor. Classical methods of analysis and design of feedback control systems as applied to problems selected from engineering, biology, and related areas. Mr. Wiberg (F,Sp)

**142. Linear Systems: State-Space Approach.** Lecture, four hours; laboratory, one hour; outside study, 10 hours. Prerequisite: course 102. State-space methods of linear system analysis and design, with application to problems in networks, control, and system modeling. Mr. Wiberg (W)

**161. Electromagnetic Waves.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisite: course 101. Transmission line theory, guided waves in enclosed waveguides, Smith chart, phase and group velocity, cavity resonators, waves in complex media. Mr. Rahmat-Samii (F,Sp)

**162A. Antenna Design I.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisite: course 161. Radiation properties of basic antenna elements. Reciprocity, directivity, beamwidth polarization, and sidelobe level of antenna patterns. Design of linear arrays. Design of antenna excitation networks. Array design including mutual coupling. Mr. Alexopoulos (Sp)

**162B. Antenna Design II.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisite: course 162A. Radiation patterns of horns, slots, and microstrip antennas. Equivalent source representations. Synthesis of sum and difference patterns. Dolph/Chebyshev excitation. Design of slot arrays with mutual coupling. Design of traveling wave antennas, reflectors, and lenses. Mr. Alexopoulos (F)

**163A. Introductory Microwave Circuits.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisite: course 161. Transmission lines description of waveguides, impedance transformers, power dividers, directional couplers, filters, hybrid junctions, nonreciprocal devices. Mr. Itoh (W)

**163B. Microwave and Millimeter Wave Active Circuits.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisite: course 161. Oscillator theory, transistor, FET, IMPATT, Gunn, oscillators, microwave tubes. Mr. Itoh (W)

**163C. Microwave Amplifiers.** Lecture, three hours; outside study, nine hours. Prerequisites: courses 115A, 161. Theory and design of FET and bipolar transistor amplifiers; stability, noise, distortion. Broadband and MMIC amplifiers. Mr. Itoh (Sp)

**164AL. Microwave Measurements Laboratory.** Lecture, two hours; laboratory, four hours; outside study, six hours. Prerequisite or corequisite: course 163A. Measurement techniques and instrumentation for active and passive microwave components; cavity resonators, waveguides, wavemeters, slotted lines, directional couplers. Design, fabrication, and characterization of microwave circuits in microstrip and coaxial systems. Mr. Kolner (W)

**164BL. Active Microwave Circuit Design Laboratory.** Lecture, two hours; laboratory, four hours; outside study, six hours. Prerequisite: course 164AL. Application of contemporary analytic design techniques to development of microwave amplifiers and oscillators incorporating state-of-the-art commercially available microwave transistors (silicon bipolar and GaAs MESFET). Mr. Kolner (Sp)

**172. Introduction to Lasers and Quantum Electronics.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisite: course 101 or equivalent or consent of instructor. Physical applications and principles of lasers, Gaussian optics, resonant cavities, atomic radiation, laser oscillation and amplification, cw and pulsed lasers. Mr. Joshi, Mr. Stafsudd (F)

**172L. Laser Laboratory (2 units).** Laboratory, four hours. Prerequisite or corequisite: course 172 or consent of instructor. Properties of lasers, including saturation, mode-locking, and relaxation effects. Laser applications, including optics, modulation, communication, holography, interferometry, and nonlinear effects. Mr. Joshi, Mr. Stafsudd (F)

**173. Photonic Devices.** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisite: course 101 or consent of instructor. Introduction to basic principles of photonic devices. Topics include crystal optics, dielectric optical waveguides, waveguide couplers, electro-optic devices, magneto-optic devices, cando-optic devices, second-harmonic generation, optical Kerr effect, optical switching devices. Mr. Joshi, Mr. Liu (W)

**173L. Photonics Laboratory (2 units).** Laboratory, four hours; outside study, eight hours. Corequisite: course 173 or consent of instructor. Introduction to measurement of basic photonic devices, including LEDs, lasers, detectors, and amplifiers; fiber-optic fundamentals and measurement of fiber systems. Optical modulation via Pockels, Kerr magnetic optic, and acousto-optic effect. Mr. Stafsudd (W)

**174. Semiconductor Optoelectronics (3 units).** Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisite: course 172 or consent of instructor. Introduction to semiconductor optoelectronic devices for optical communications, interconnects, and signal processing. Basic optical properties of semiconductors, pin photodiodes, avalanche photodiode detectors (APD), light-emitting diodes (LED), semiconductor lasers, optical modulators and amplifiers, and typical photonic systems. Mr. Fetterman, Mr. Wu (Sp)

**175. Fourier Optics.** (Formerly numbered 165.) Lecture, three hours; recitation, one hour; outside study, eight hours. Prerequisites: courses 102, 161. Two-dimensional linear systems and Fourier transforms. Foundation of diffraction theory. Analysis of optical imaging systems. Spatial filtering and optical information processing. Wavefront reconstruction and holography. Mr. Kolner (Sp)

**M185. Plasma Physics.** (Same as Physics M122.) Lecture, four hours; outside study, eight hours. Prerequisite: course 101 or Physics 110A. Senior-level introductory course to physics of plasmas and ionized gases and fundamentals of controlled fusion. Particle motion in magnetic fields; fluid behavior, plasma waves; resistivity and transport; equilibrium and stability; kinetic effects. Discussion of illustrative laboratory experiments. Mr. Chen (F, even years)

**199. Special Studies (2 to 8 units).** Prerequisites: senior standing, consent of instructor. Individual investigation of selected topic to be arranged with a faculty member. Enrollment request forms available in department office. Only two units may be applied toward degree; the two units must be approved by petition and can be used only as a replacement for a regular electrical engineering laboratory course. Students may take additional 199 courses, but they may not be applied toward degree. (F,W,Sp)

## Graduate Courses

**M208A. Analytical Methods of Engineering I.** (Same as Mechanical, Aerospace, and Nuclear Engineering M291A.) Prerequisites: Mathematics 131A, 132. Application of abstract mathematical methods to engineering problems. Review of elements of measure and integration,  $L_2$  theory — linear spaces and operators. Eigenvalue problems. Introduction to spectral theory — elementary distribution theory. Applications to problems in engineering. Mr. Gibson, Mr. Wiberg (F,W)

**M208B. Analytical Methods of Engineering II.** (Same as Mechanical, Aerospace, and Nuclear Engineering M291B.) Prerequisite: course M208A or Mechanical, Aerospace, and Nuclear Engineering M291A or consent of instructor. Application of modern mathematical methods to engineering problems. Review of spectral theory. Green's functions and eigenvalue problems for second-order ordinary differential equations and their adjoints. Discrete and continuous spectra for ordinary and partial differential equations. Initial and boundary value problems. Mr. Gibson, Mr. Levan (W,Sp)

**208C. Semigroups of Linear Operators and Applications.** Lecture, four hours; other, eight hours. Prerequisite: course M208B or equivalent. Semigroups of linear operators over Hilbert spaces. Generator and resolvent, generation theorems, Laplace inversion formula. Dissipative operators and contraction semigroups. Analytic semigroups and spectral representation. Semigroups with compact resolvents. Parabolic and hyperbolic systems. Controllability and stabilizability. Applications. Mr. Balakrishnan, Mr. Levan (Sp)

**211A. Digital Image Processing I.** Lecture, three hours; laboratory, four hours; outside study, five hours. Prerequisites: course 113, computer programming experience. Fundamentals of digital image processing theory and techniques. Topics include two-dimensional linear system theory, image transforms, enhancement, and modeling. Concepts covered in lecture applied in computer laboratory assignments. Mr. Villaseñor (F)

**212A. Theory and Design of Digital Filters.** (Formerly numbered 212.) Lecture, three hours; outside study, nine hours. Prerequisite: course 113. Approximation of filter specifications. Use of design charts. Structures for recursive digital filters. FIR filter design techniques. Comparison of IIR and FIR structures. Implementation of digital filters. Limit cycles. Overflow oscillations. Discrete random signals. Wave digital filters. Mr. Samuelli (W)

**212B. Multirate Systems and Filter Banks.** Lecture, three hours; outside study, nine hours. Prerequisite: course 212A. Fundamentals of multirate systems; polyphase representation; multistage implementations; applications of multirate systems; maximally decimated filter banks; perfect reconstruction systems; paraunitary filter banks; wavelet transform and its relation to multirate filter banks. Mr. Willson (F)

**213A. Advanced Digital Signal Processing Circuit Design.** Lecture, three hours; outside study, nine hours. Prerequisites: courses 212A, M216A. Digital filter design and optimization tools, architectures for digital signal processing circuits; integrated circuit modules for digital signal processing; programmable signal processors; CAD tools and cell libraries for application-specific IC design; case studies of speech and image processing circuits. Mr. Jain (Sp)

**214A. Digital Speech Processing.** (Formerly numbered 214.) Lecture, three hours; laboratory, two hours; outside study, seven hours. Prerequisite: course 113 or equivalent. Theory and applications of digital processing of speech signals. Mathematical models of human speech production and perception mechanisms, speech analysis/synthesis. Techniques include linear prediction, filter bank models, and homomorphic filtering. Applications to speech synthesis, automatic recognition, and hearing aids. Ms. Alwan (W)

**215A. Analog Integrated Circuit Design.** Lecture, three hours; outside study, nine hours. Prerequisite: course 115B. Bipolar and CMOS operational amplifier design; gain stages, frequency compensation, output stages; voltage references; analysis of noise and distortion; wideband amplifiers. Mr. Abidi (W)

**215B. Advanced Digital Integrated Circuits.** Lecture, three hours; outside study, nine hours. Prerequisites: courses 115C, M216A. Analysis and comparison of modern logic families (CMOS, bipolar, BiCMOS, GaAs). MSI digital circuits (flipflops, registers, counters, PLAs). VLSI memories (ROM, RAM, CCD, bubble memories, EPROM, EEPROM) and VLSI systems. Mr. Abidi (Sp)

**215D. Analog Microsystem Design.** Lecture, three hours; outside study, nine hours. Prerequisites: courses 113, 215A. Analog signal processing families. Discrete-time switched-capacitor circuits. Continuous-time filters. A/D and D/A converters. Samplers, modulators, oscillators. System-level circuit design. Mr. Abidi (Sp)

**M216A. LSI in Computer System Design.** (Same as Computer Science M258A.) Lecture, four hours; laboratory, four hours. Prerequisites: graduate standing in computer science or electrical engineering, consent of instructor. LSI/VLSI design and application in computer systems. Fundamental design techniques that can be used to implement complex integrated systems on a chip. Mr. Jain (F)

**M216B-M216C. LSI in Computer System Design.** (Same as Computer Science M258B-M258C.) Lecture, four hours; laboratory, four hours. Prerequisite: course M216A. LSI/VLSI design and application in computer systems. In-depth studies of VLSI architectures and VLSI design tools. In Progress grading. Mr. Jain

**219A. Special Topics in Circuits and Signal Processing.** Lecture, three hours; outside study, nine hours. Prerequisite: consent of instructor. Advanced treatment of topics selected from research areas in circuit theory, integrated circuits, or signal processing.

**221A. Physics of Semiconductor Devices I.** Prerequisite: course 121A. Physical principles and design considerations of junction devices. Mr. K. Wang, Mr. Woo (F)

**221B. Physics of Semiconductor Devices II.** Prerequisite: course 121A. Principles and design considerations of field effect devices and charge-coupled devices. Mr. Viswanathan (Sp)

**221C. Microwave Semiconductor Devices.** Prerequisite: course 121A. Physical principles and design considerations of microwave solid-state devices: Schottky barrier mixer diodes, IMPATT diodes, transferred electron devices, tunnel diodes, microwave transistors. Mr. Pan, Mr. K. Wang (W)

**222. Integrated Circuits Fabrication Processes.** Prerequisites: courses 118, 121A. Principles of integrated circuits fabrication processes. Technological limitations of integrated circuits design. Topics include bulk crystal and epitaxial growth, thermal oxidation, diffusion, ion-implantation, chemical vapor deposition, dry etching, lithography, and metalization. Introduction of advanced process simulation tools. Mr. Woo (Sp, odd years)

**223. Solid-State Electronics I.** Prerequisites: courses 124 and 270, or consent of instructor. Energy band theory, electronic band structure of various elementary, compound, and alloy semiconductors, defects in semiconductors. Recombination mechanisms, transport properties. Mr. Fetterman, Mr. Pan (F)

**224. Solid-State Electronics II.** Prerequisite: course 223. Techniques to solve Boltzmann transport equation, various scattering mechanisms in semiconductors, high field transport properties in semiconductors, Monte Carlo method in transport. Optical properties. Mr. Pan (Sp, even years)

**225. Superlattices and Quantum Wells.** Prerequisite: course 223. Theoretical methods for circulating electronics and optical properties of semiconductor quantum wells, superlattices, and tunnel structures. Quantum size effects and low-dimensional systems. Application to semiconductor devices, including negative resistance diodes, transistors, and detectors. Mr. K. Wang (W, even years)

**229. Seminars: Advanced Topics in Solid-State Electronics.** Prerequisites: courses 223, 224. Current research areas, such as radiation effects in semiconductor devices, diffusion in semiconductors, optical and microwave semiconductor devices, nonlinear optics, and electron emission.

**229S. Advanced Electrical Engineering Seminar (2 units).** Prerequisite: successful completion of Ph.D. major field examination or consent of instructor. Seminar on current research topics in solid-state and quantum electronics (Section 1) or in electronic circuit theory and applications (Section 2). Students report on a tutorial topic and on a research topic in their dissertation area. May be repeated for credit. S/U grading. (F,W,Sp)

**230A. Estimation and Detection in Communication and Radar Engineering.** Prerequisite: course 131A or equivalent. Applications of estimation and detection concepts in communication and radar engineering; random signal and noise characterizations by analytical and simulation methods; mean square (MS) and maximum likelihood (ML) estimations and algorithms; detection under ML, Bayes, and Neyman/Pearson (NP) criteria; signal-to-noise ratio (SNR) and error probability evaluations. Mr. Rubin (F)

**230B. Digital Communication Systems.** Prerequisite: course 230A. Basic concepts of digital communication systems and applications; representation of bandpass waveforms; geometry and optimum receivers in white Gaussian noise; comparisons of digital modulation schemes; transmission over real channels; applications to satellite systems. Mr. Rubin (Sp)

**230C. Algorithms and Processing in Communication and Radar.** Prerequisite: course 230A. Concepts and implementations of digital signal processing algorithms in communication and radar systems. Optimum dynamic range scaling for random data. Algorithms for fast convolution and transform. Spectral estimation algorithms. Parallel processing, VLSI algorithms, and systolic arrays. Mr. Yao (W)

**230D. Signal Processing in Communications.** Lecture, four hours; other, eight hours. Prerequisite: course 230C. Basic digital signal processing techniques for estimation and detection of signals in communication and radar systems. Optimization of dynamic range, quantization, and state constraints; DFT, convolution, FFT, NTT, Winograd DFT, systolic array; spectral analysis-windowing, AR, and ARMA; system applications. Mr. Yao

**231A. Information Theory: Channel and Source Coding.** Prerequisite: course 230A. Fundamental concepts of information theory with applications to digital communications. Block and convolutional codes analyzed from both theoretical and practical implementation viewpoints. Channel coding and theory of data compression (rate distortion theory). Mr. Rubin (W)

**231B. Error Control Codes and Cryptography.** Prerequisite: course 231A. Introduction to Galois fields with applications to error control codes and cryptography. Linear block codes, cyclic codes, BCH codes, Reed/Solomon codes, and Goppa codes. Digital circuit implementation of encoders, decoders, and cryptographic systems. Conventional and public key cryptosystems and key management. Mr. Yao (Sp)

**231C. Rate Distortion Theory and Source Coding Techniques.** Prerequisites: courses 230A and 231A, or consent of instructor. Sources and distortion measures, rate distortion function and its evaluation for discrete and continuous sources, source coding theorems, comparisons of practical coding systems to theoretical bounds, speech and image quantization. Mr. Yao (Sp)

**231D. Spread Spectrum Communications.** Prerequisite: course 231A. Spread spectrum digital communication systems for antijam and multiple-access applications. Basic design approach, models, and general analysis for spread spectrum systems. Direct sequence spread binary-phase-shift keying (BPSK) and frequency-hopped multiple-frequency-shift keying (MFSK) signals. Multiple access in spread spectrum digital radio networks. Mr. Bambo (Sp)

**231E. Algebraic Coding Theory.** Prerequisite: course 231A. Fundamentals of linear or parity-check codes and decoding algorithms based on algebraic theory of finite groups and fields; cyclic codes; Hamming; Reed/Muller, Bose/Chaudhuri/Hocquenghem, and Reed/Solomon codes, and corresponding decoding algorithms. Mr. Yao

**232A. Stochastic Modeling with Applications to Telecommunication Systems.** Prerequisite: course 131A or equivalent. Introduction to stochastic processes as applied to study of telecommunication systems and traffic engineering. Renewal theory; discrete-time Markov chains; continuous-time Markov jump processes. Applications to traffic and queueing analysis of basic telecommunication system models. Mr. Rubin (F)

**232B. Telecommunication Switching and Queueing Systems.** Prerequisite: course 232A. Queue modeling and analysis with applications to space-time digital switching systems and to integrated-service telecommunication systems. Fundamentals of traffic engineering and queueing theory. Queue size, waiting time, busy period, blocking, and stochastic process analysis for Markovian and non-Markovian models. Mr. Rubin (W)

**232C. Telecommunication Architecture and Networks.** Prerequisite: course 232B. Analysis and design of integrated-service telecommunication networks and multiple-access procedures. Stochastic analysis of priority-based queueing system models. Queueing networks; network protocol architectures; error control; routing, flow, and access control. Applications to local-area, packet-radio, satellite, and computer communication networks. Mr. Rubin (Sp)

**232D. Telecommunication Networks and Multiple-Access Communications.** Prerequisite: course 232B. Performance analysis and design of telecommunication networks and multiple-access communication systems. Topics include architectures, multiplexing and multiple-access, message delays, error/flow control, switching, routing, protocols. Applications to local-area, packet-radio, local-distribution, computer and satellite communication networks. Mr. Rubin

**232E. Graphs and Network Flows.** Prerequisite: course 136 or consent of instructor. Solution to analysis and synthesis problems which may be formulated as flow problems in capacity constrained (or cost constrained) networks. Development of tools of network flow theory using graph theoretic methods; application to communication, transportation, and transmission problems. Mr. Jacobsen (W,Sp)

**236A. Linear Programming.** Prerequisite: Mathematics 115A or equivalent knowledge of linear algebra. Basic graduate course in linear and combinatorial programming. Simplex method, duality, geometry, decomposition, complementary pivot theory, and quadratic programming; introduction to computational complexity theory. Mr. Jacobsen (F)

**236B. Nonlinear Programming.** Prerequisite: course 236A or equivalent. Basic graduate course in nonlinear programming. Convex sets and functions and their basic properties. Kuhn/Tucker points, saddle points, and nonlinear or conjugate duality theory. Development of algorithms and convergence theory. Mr. Jacobsen (W)

**236C. Optimization Methods for Large-Scale Systems.** Prerequisite: course 236B. Theory and computational procedures for decomposing large-scale mathematical programming problems. Generalized linear programming, decomposition algorithms, column generation, economic implications. Application to stochastic programming and optimal control. Topics in nonconvex programming; minimizing concave functions on convex polyhedra, reverse convex programming. Mr. Jacobsen (Sp)

**237. Dynamic Programming.** Prerequisite: course 232A. Introduction to mathematical analysis of sequential decision processes. Finite horizon model in both deterministic and stochastic cases. Finite-state infinite horizon model. Methods of solution. Detailed examples from inventory theory, finance, and transportation systems. Mr. Jacobsen (W)

**238. Reliability Theory with Applications.** Prerequisite: course 131A or equivalent. Basic graduate course in reliability theory. Reliability models for complex systems, coherent structures, modular decomposition, reliability bounds. Constant, monotone hazard functions. Optimization problems in reliability: redundancy allocations, maintenance policies, stress-strength and safety considerations in engineering design. Statistical problems, current topics.

Mr. Jacobsen (Sp)

**239AS. Topics in Communication.** Prerequisite: consent of instructor. Topics in one or more special aspects of communication systems, such as phase-coherent communication systems, optical channels, time-varying channels, feedback channels, broadcast channels, networks, coding and decoding techniques. May be repeated for credit with topic change.

**239BS. Topics in Operations Research.** Prerequisite: consent of instructor. Treatment of one or more selected topics from areas such as integer programming; combinatorial optimization; network synthesis; scheduling, routing, location, and design problems; implementation considerations for mathematical programming algorithms; stochastic programming; applications in engineering, computer science, economics. May be repeated for credit with topic change.

**240A. Linear Dynamic Systems.** Prerequisite: course 142 or equivalent. State-space description of dynamic systems. Deduction of state spaces from input-output data. State controllability and observability. Stability and state feedback stabilizability; state observer.

Mr. Balakrishnan (F)

**240B. Linear Optimal Control.** Prerequisites: courses 141 or equivalent and 240A, or consent of instructor. Introduction to optimal control, with emphasis on detailed study of LQR, or linear regulators with quadratic cost criteria. Relationships to classical control system design.

Mr. Levan (W)

**240C. Optimal Control.** Prerequisite: course 240B. Applications of variational methods. Pontryagin maximum principle, dynamic programming and nonlinear programming to problems of optimal control theory and practical systems.

Mr. P.K.C. Wang (Sp)

**241A. Stochastic Processes.** Prerequisite: course 131B or equivalent. Fundamentals and applications of second-order theory stochastic processes. Correlation and spectral density. Gaussian process, processing by dynamic systems, Bayes rule and conditional expectation; mean-square estimation and Kalman filtering.

(F)

**241B. Kalman Filtering.** Prerequisites: courses 240A, 241A. Statistical estimation theory, estimation of signal parameters in additive noise. Kalman filter theory: basic theory, steady state and frequency domain analyses, on-line estimation and colored noise. Likelihood ratios, Gaussian signals in Gaussian noise.

Mr. Balakrishnan (W)

**241C. Stochastic Control.** Prerequisites: courses 240B, 241B. Estimation and control of linear discrete-time and continuous-time stochastic systems; separation theorem and applications; Kalman filtering.

Mr. Balakrishnan (Sp)

**242. Nonlinear Control.** Prerequisite: course 240B. Techniques for studying nonlinear control systems, with emphasis on their stability; Liapunov direct method; input-output stability; Popov method; linearization.

Mr. P.K.C. Wang (W)

**M243. Biological Control Systems.** (Same as Anesthesiology M222.) Prerequisite: course 141 or equivalent. Introduction to application of control theory to modeling and analysis of biological control systems, such as respiratory system, cardiovascular system, and neuromuscular system. Emphasis on solving problems of current interest in biomedicine.

Mr. Wiberg

**249S. Topics in Control.** Prerequisite: consent of instructor. Thorough treatment of one or more aspects of control theory and applications, such as computational methods for optimal control; stability of distributed systems; identification; adaptive control; nonlinear filtering; differential games; applications to flight control, nuclear reactors, process control, biomedical problems. May be repeated for credit with topic change.

**260A-260B. Advanced Engineering Electrodynamics.** Prerequisites: courses 161, 162A. Advanced treatment of concepts in electrodynamics and their applications to modern engineering problems. Waves in anisotropic, inhomogeneous, and dispersive media. Guided waves in bounded and unbounded regions. Radiation and diffraction, including optical phenomena. Partially coherent waves, statistical media.

Mr. Alexopoulos, Mr. Rahmat-Samii (F, 260A; W, 260B)

**261. Microwave and Millimeter Wave Circuits.** Prerequisite: course 163A or consent of instructor. Rectangular and circular waveguides, microstrip, stripline, finline, and dielectric waveguide distributed circuits, with applications in microwave and millimeter wave integrated circuits. Substrate materials, surface wave phenomena. Analytical methods for discontinuity effects. Design of passive microwave and millimeter wave circuits.

Mr. Alexopoulos, Mr. Itoh (Sp)

**262. Antenna Theory and Design.** Prerequisites: courses 162A, 162B. Antenna patterns. Sum and difference patterns. Optimum designs for rectangular and circular apertures. Arbitrary side lobe topography. Discrete arrays. Mutual coupling. Design of feeding networks.

Mr. Alexopoulos, Mr. Rahmat-Samii (W, even years)

**263. Reflector Antennas Synthesis, Analysis, and Measurement.** Lecture, four hours; other, eight hours. Prerequisites: courses 260A-260B or equivalent. Reflector pattern analysis techniques. Single and multireflector antenna configurations. Reflector synthesis techniques. Reflector feeds. Reflector tolerance studies, including systematic and random errors. Array-fed reflector antennas. Near-field measurement techniques. Compact range concepts. Microwave diagnostic techniques. Modern satellite and ground antenna applications.

Mr. Rahmat-Samii

**266. Computational Methods for Electromagnetics.** Prerequisites: courses 162A, 163A. Computational techniques for partial differential and integral equations: finite-difference, finite-element, method of moments. Applications include transmission lines, resonators, integrated circuits, solid-state device modeling, electromagnetic scattering, and antennas.

Mr. Itoh (W)

**267. Nonlinear Microwave Circuits.** Lecture, four hours; outside study, eight hours. Prerequisites: courses 161, 163A, 163B. Nonlinear device modeling, harmonic balance and Volterra series analysis, application to mixers, frequency multipliers, and amplifiers.

Mr. Maas (W)

**270. Applied Quantum Mechanics.** Lecture, four hours; outside study, eight hours. Prerequisites: modern physics (or course 123A), linear algebra, and ordinary differential equations courses. Principles of quantum mechanics for applications in lasers, solid-state physics, and nonlinear optics. Topics include eigenfunction expansions, observables, Schrödinger equation, uncertainty principle, central force problems, Hilbert spaces, WKB approximation, matrix mechanics, density matrix formalism, and radiation theory.

Mr. Liu, Mr. Stafsudd (F)

**271. Classical Laser Theory.** Lecture, four hours; outside study, eight hours. Prerequisite: course 172 or equivalent. Microscopic and macroscopic laser phenomena and propagation of optical pulses using classical formalism.

Mr. Joshi (W)

**272. Dynamics of Lasers.** Lecture, four hours; outside study, eight hours. Prerequisite: course 271 or consent of instructor. Ultrashort laser pulse characteristics, generation, and measurement. Gain switching, Q switching, cavity dumping, active and passive mode locking. Pulse compression and soliton pulse formation. Nonlinear pulse generation: soliton laser, additive-pulse mode locking, and parametric oscillators. Pulse measurement techniques.

Mr. Liu (Sp)

**273. Nonlinear Optics.** Lecture, four hours; outside study, eight hours. Prerequisites: courses 172 and 270, or consent of instructor. Nonlinear optical susceptibilities. Coupled-wave formulation. Crystal optics, electro-optics, and magneto-optics. Sum- and difference-frequency generation. Harmonic and parametric generation. Stimulated Raman and Brillouin scattering. Four-wave mixing and phase conjugation. Field-induced index changes and self-phase modulation.

Mr. Liu, Mr. Stafsudd (W)

**279S. Special Topics in Quantum Electronics.** Lecture, four hours; outside study, eight hours. Prerequisite: consent of instructor. Current research topics in quantum electronics, lasers, nonlinear optics, optoelectronics, ultrafast phenomena, fiber optics, and lightwave technology. May be repeated for credit. S/U or letter grading.

Mr. Liu (F,W,Sp)

**285A. Plasma Waves and Instabilities.** Lecture, four hours; outside study, eight hours. Prerequisites: courses 101, and M185 or Physics M122. Wave phenomena in plasmas described by macroscopic fluid equations. Microwave propagation, plasma oscillations, ion acoustic waves, cyclotron waves, hydro-magnetic waves, drift waves. Rayleigh-Taylor, Kelvin/Helmholtz, universal, and streaming instabilities. Application to experiments in fully and partially ionized gases.

Mr. Chen, Mr. Luhmann (W)

**285B. Advanced Plasma Waves and Instabilities.** Prerequisites: courses M185, and 285A or Physics 222A. Interaction of intense electromagnetic waves with plasmas: waves in inhomogeneous and bounded plasmas, nonlinear wave coupling and damping, parametric instabilities, anomalous resistivity, shock waves, echoes, laser heating. Emphasis on experimental considerations and techniques.

Mr. Chen, Mr. Luhmann (Sp)

**M286. Principles of Magnetic Confinement Fusion.** (Same as Mechanical, Aerospace, and Nuclear Engineering M237A.) Prerequisites: courses M185, and 285A and 285B or Physics 222A-222B, or consent of instructor. Plasma requirements for controlled fusion. Structure of magnetic fields. Theory of MHD equilibrium and stability. Shear and minimum-B stabilization. Resistive and microinstabilities. Neoclassical diffusion physics of tokamak and tandem-mirror plasmas. Neutral beams and auxiliary heating. Alternate concepts.

Mr. Chen (F, odd years)

**M287. Fusion Plasma Physics and Analysis.** (Same as Mechanical, Aerospace, and Nuclear Engineering M237B.) Prerequisite: course M185. Fundamentals of plasmas at thermonuclear burning conditions. Fokker/Planck equation and applications to heating by neutral beams, RF, and fusion reaction products. Bremsstrahlung, synchrotron, and atomic radiation processes. Plasma surface interactions. Fluid description of burning plasma. Dynamics, stability, and control. Applications in tokamaks, tandem mirrors, and alternate concepts.

Mr. Chen (W)

**298. Seminar: Engineering (2 to 4 units).** Prerequisites: graduate standing in electrical engineering, consent of instructor. Seminars may be organized in advanced technical fields. If appropriate, field trips may be arranged. May be repeated with topic change.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

(F,W,Sp)

**596. Directed Individual or Tutorial Studies (2 to 8 units).** Prerequisites: graduate standing in electrical engineering, consent of instructor. Petition forms to request enrollment may be obtained from assistant dean, Graduate Studies. Supervised investigation of advanced technical problems. S/U grading.

**597A. Preparation for M.S. Comprehensive Examination (2 to 12 units).** Prerequisites: graduate standing in electrical engineering, consent of instructor. Reading and preparation for M.S. comprehensive examination. S/U grading.

**597B. Preparation for Ph.D. Preliminary Examinations (2 to 16 units).** Prerequisites: graduate standing in electrical engineering, consent of instructor. S/U grading.

**597C. Preparation for Ph.D. Oral Qualifying Examination (2 to 16 units).** Prerequisites: graduate standing in electrical engineering, consent of instructor. Preparation for oral qualifying examination, including preliminary research on dissertation. S/U grading.

**598. Research for and Preparation of M.S. Thesis (2 to 12 units).** Prerequisites: graduate standing in electrical engineering, consent of instructor. Supervised independent research for M.S. candidates, including thesis prospectus. S/U grading.

**599. Research for and Preparation of Ph.D. Dissertation (2 to 16 units).** Prerequisites: graduate standing in electrical engineering, consent of instructor. Usually taken after student has been advanced to candidacy. S/U grading.

## Environmental Science and Engineering (Interdepartmental)

This interdisciplinary graduate program, which leads to the Doctor of Environmental Science and Engineering (D.Env.) degree, provides scientific training in the enlightened management of the environment through a broad range of environmental disciplines. For details on this program, see Chapter 18 on the School of Public Health.

## Materials Science and Engineering

5731 Boelter Hall, (310) 825-5534

### Professors

Alan J. Ardell, Ph.D.  
Bruce S. Dunn, Ph.D.  
John D. Mackenzie, Ph.D. (*Nippon Sheet Glass Company Professor of Materials Science*),  
*Associate Dean*  
Kanji Ono, Ph.D., *Chair*  
Aly H. Shabaik, Ph.D.  
Rointan F. Bunshah, D.Sc., *Emeritus*  
David L. Douglass, Ph.D., *Emeritus*  
John H. Lyman, Ph.D., *Emeritus*  
George H. Sines, Ph.D., *Emeritus*

Christian N.J. Wagner, Dr.rer.nat., *Emeritus*  
Alfred S. Yue, Ph.D., *Emeritus*

### Associate Professors

Nancy M. Haegel, Ph.D.  
William Klement, Jr., Ph.D.  
Jenn-Ming Yang, Ph.D.

### Assistant Professor

Mark S. Goorsky, Ph.D.

### Adjunct Professor

Ryoichi Kikuchi, Ph.D.

### Adjunct Associate Professor

Marek A. Przystupa, Ph.D.

## Scope and Objectives

At the heart of materials science is an understanding of the microstructure of solids. "Microstructure" is used broadly in reference to solids viewed at the subatomic (electronic) and atomic levels, and the nature of the defects at these levels. The microstructure of solids at various levels profoundly influences the mechanical, electronic, chemical, and biological properties of solids. The phenomenological and mechanistic relationships between microstructure and the macroscopic properties of solids are, in essence, what materials science is all about.

Materials engineering, on the other hand, is concerned with the design, fabrication, and nondestructive testing of engineering materials. Such materials must fulfill simultaneously dimensional, property, quality control, and economic requirements. Several manufacturing steps may be involved: (1) primary fabrication, such as solidification or vapor deposition of homogeneous or composite materials; (2) secondary fabrication, including shaping and microstructural control by operations such as mechanical working, machining, sintering, joining, and heat treatments; and (3) nondestructive testing, which measures the degree of reliability of a processed part.

The department also has a program in electronic materials which provides a broad-based background in materials science, with opportunity to specialize in the study of those materials used for electronic and opto-electronic applications. The program incorporates several courses in electrical engineering in addition to those in the materials science curriculum.

The undergraduate program leads to the Bachelor of Science degree in Materials Engineering. Students are introduced to the basic principles of metallurgy and ceramic and polymer science as part of the department's materials engineering major. A joint major field, chemistry/materials science, is offered to students enrolled in the Department of Chemistry and Biochemistry (College of Letters and Science). Several courses in the undergraduate curriculum also play an important role in one of the options of the manufacturing engineering program.

The graduate program allows for specialization in one of the following fields: materials science, metallurgy and metals processing, mechanical metallurgy, and ceramics and ceramics processing.

## Bachelor of Science in Materials Engineering

The ABET-accredited materials engineering program is designed for students who wish to pursue a professional career in the materials field and desire a broad understanding of the relationship between microstructure and properties of materials. Metals, ceramics, and polymers, as well as the design, fabrication, and testing of metallic and other materials such as oxides, glasses, and fiber-reinforced composites, are included in the course contents.

### The Major

Course requirements are as follows (180 minimum units required):

(1) Six core courses: Chemical Engineering M105A (or Mechanical, Aerospace, and Nuclear Engineering M105A), Civil Engineering 108, Electrical Engineering 100, Materials Science and Engineering 14, Mechanical, Aerospace, and Nuclear Engineering 102, 105D.

(2) Materials Science and Engineering 110, 120, 130, 131, 132, 150, 160, 190; 131L and 161L, plus two additional laboratory units from 111 (one unit of lab credit), 143L, 147L, 191L; Mechanical, Aerospace, and Nuclear Engineering 191A or 192A (satisfies the mathematics requirement); Civil Engineering 106A (satisfies the engineering economics requirement).

(3) Four elective courses from Chemical Engineering C114, Civil Engineering 135A, Electrical Engineering 121A, 123A, 123B, 124, Materials Science and Engineering 111, 121, 122, 143A, 143B, 147B, 151, 161, 162, Mechanical, Aerospace, and Nuclear Engineering 156B (the design content of the elective courses and the elective laboratory must total eight units).

(4) Chemistry and Biochemistry 11A, 11B/11BL; Civil Engineering 15A and 15B or Electrical Engineering 5C or Mechanical, Aerospace, and Nuclear Engineering 20; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A/8AL, 8B/8BL, 8C/8CL, 8D/8DL.

(5) SEAS general education (GE) course requirements — see "Curricular Requirements" (item 4) earlier in this chapter for details.

(6) One free elective course.

### Electronic Materials Option

Course requirements are as follows (190 minimum units required):

(1) Six core courses: Chemical Engineering M105A (or Mechanical, Aerospace, and Nuclear Engineering M105A), Electrical Engineering 10, 101, Materials Science and Engineering 14, Mechanical, Aerospace, and Nu-

clear Engineering 102, and Civil Engineering 108 or Mechanical, Aerospace, and Nuclear Engineering 105D.

(2) Materials Science and Engineering 110, 121, 122, 130, 131, 131L, 190; Electrical Engineering 121A, 121B, 122BL, 123A, 123B, and two courses from Materials Science and Engineering 132, 150, 160; Mechanical, Aerospace, and Nuclear Engineering 191A or 192A.

(3) Four elective courses from Materials Science and Engineering 111, 143A, 162, Electrical Engineering 110, 124, 172; two laboratory courses from Materials Science and Engineering 161L, 191L, 199, Electrical Engineering 122AL, 172L.

(4) Chemistry and Biochemistry 11A, 11B/11BL; Civil Engineering 15A and 15B or Electrical Engineering 5C or Mechanical, Aerospace, and Nuclear Engineering 20; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A/8AL, 8B/8BL, 8C/8CL, 8D/8DL.

(5) SEAS general education (GE) course requirements — see "Curricular Requirements" (item 4) earlier in this chapter for details.

## Graduate Study

For information on graduate admission to the materials science and engineering program and requirements for the M.S. and Ph.D. degrees, see "Graduate Study" at the beginning of this chapter.

## Lower Division Courses

**14. Science of Engineering Materials.** Lecture, three hours; demonstration, one hour; recitation, one hour. Prerequisites: Chemistry 11A, 11B/11BL, Physics 8A, 8B. Physics 8C may be taken concurrently. General introduction to different types of materials used in engineering designs: metals, ceramics, plastics, and composites, relationship between structure (crystals and microstructure) and properties of technological materials. Illustration of their fundamental differences and their applications in engineering.

Mr. Dunn (F,W,Sp)

**88. Freshman Seminar: New Materials.** Lecture, two hours; recitation, one hour; laboratory, one hour; outside study, nine hours. Prerequisites: high school chemistry and physics. Not open to students with credit for course 14. Engineering or chemistry/materials science majors expected to use course only as free elective. Introduction to basic concepts of materials science and new materials vital to advanced technology. Microstructural analysis and various material properties discussed in conjunction with such applications as biomedical sensors, pollution control, and microelectronics.

Mr. Ono (F)

## Upper Division Courses

**110. Introduction to Materials Characterization A (Crystal Structure and X-Ray Diffraction of Material).** Lecture, three hours; laboratory, two hours. Prerequisite: course 14. Modern methods of materials characterization; fundamentals of crystallography, properties of X rays, X-ray diffraction; powder method, Laue method; determination of crystal structures; phase diagram determination; X-ray stress measurements; X-ray spectroscopy; design of materials characterization procedures.

Mr. Goorsky (F)

**111. Introduction to Materials Characterization B (Electron Microscopy).** Lecture, three hours; laboratory, two hours. Prerequisites: courses 14, 110. Characterization of microstructure and microchemistry of materials; transmission electron microscopy; reciprocal lattice, electron diffraction, stereographic projection, direct observation of defects in crystals, replicas; scanning electron microscopy; emissive and reflective modes; chemical analysis; electron optics of both instruments.

Mr. Ardell (W)

**120. Electronic Properties of Materials.** Prerequisites: courses 14, 110. Introduction to electrical, optical, and magnetic properties of solids. Free electron model, introduction to band theory and Schrödinger wave equation. Crystal bonding and lattice vibrations. Mechanisms and characterization of electrical conductivity, optical absorption, magnetic behavior, and dielectrical properties.

Ms. Haegel (W)

**121. Materials Science of Semiconductors.** Prerequisite: course 120. Structure and properties of elemental and compound semiconductors. Electrical and optical properties, defect chemistry, and doping. Electronic materials analysis and characterization, including electrical, optical, and ion-beam techniques. Heterostructures, band-gap engineering, development of new materials for optoelectronic applications.

Ms. Haegel (Sp)

**122. Principles of Electronic Materials Processing.** Prerequisite: course 14 or equivalent. Description of basic semiconductor materials for device processing; preparation and characterization of silicon, III-V compounds, and films. Discussion of principles of CVD, MOCVD, LPE, and MBE; metals and dielectrics.

Mr. Goorsky (W)

**130. Phase Relations in Solids.** Prerequisites: course 14, Chemical Engineering M105A or Mechanical, Aerospace, and Nuclear Engineering M105A. Summary of thermodynamic laws, equilibrium criteria, solution thermodynamics, mass-action law, binary and ternary phase diagrams, glass transitions.

Mr. Goorsky (Sp)

**131. Diffusion and Diffusion-Controlled Reactions.** Prerequisite: course 130. Diffusion in metals and ionic solids, nucleation and growth theory; precipitation from solid solution, eutectoid decomposition, design of heat treatment processes of alloys, growth of intermediate phases, gas-solid reactions, design of oxidation-resistant alloys, recrystallization, and grain growth.

Mr. Ono (F)

**131L. Diffusion and Diffusion-Controlled Reactions Laboratory (2 units).** Corequisite: course 131. Design of heat-treating cycles and performing experiments to study interdiffusion, growth of intermediate phases, recrystallization, and grain growth in metals. Analysis of data. Comparison of results with theory.

Mr. Ono (F)

**132. Structure and Properties of Metallic Alloys.** Prerequisite: course 131. Physical metallurgy of steels, lightweight alloys (Al and Ti), and superalloys. Strengthening mechanisms, microstructural control methods for strength and toughness improvement. Grain boundary segregation.

Mr. Ono (Sp)

**143A. Mechanical Behavior of Materials.** Prerequisite: course 14 or equivalent. Recommended: Civil Engineering 108. Plastic flow of metals under simple and combined loading, strain rate and temperature effects, dislocations, fracture, microstructural effects, mechanical and thermal treatment of steel for engineering applications.

Mr. Ardell (W)

**143B. Failure Analysis of Metals.** Prerequisite: course 131. Analysis and prevention of failure based on design deficiencies, material selection, metallurgical defects, processing and fabrication errors, improper service conditions. Relationship to heat treatment, corrosion, joining technology, and mechanical behavior. Engineering and legal aspects. Case histories.

Mr. Ono (Sp, even years)

**143L. Mechanical Testing Laboratory (2 units).** Laboratory, four hours. Prerequisite or corequisite: course 143A. Experimental techniques for measurements of mechanical properties of engineering materials. Elastic constants, tensile, compression and bend testing, fracture toughness, fatigue and creep testing.

Mr. Ono (W,Sp)

**147B. Manufacturing Processes.** Prerequisite: course 14. Theoretical basis for cold forming and hot forming processes; rolling, extrusion, and forging. Conventional metal removal. Solidification processes and casting. Powder metallurgy.

Mr. Shabaik (F)

**147L. Manufacturing Processes Laboratory.** Laboratory, eight hours. Prerequisite: course 147B. Experimental investigation, analysis, and design of metal forming processes (forging, extrusion, drawing, and rolling). Force measurements and energy calculations in metal cutting. Experimental investigation of hot and isostatic pressing of powder.

Mr. Shabaik (Sp)

**150. Introduction to Polymers.** Lecture, three hours; laboratory, two hours. Prerequisite: consent of instructor. Polymerization mechanisms, molecular weight and distribution, chemical structure and bonding, structure crystallinity, and morphology and their effects on physical properties. Glassy polymers, springy polymers, elastomers, adhesives. Fiber forming polymers, polymer processing technology, plastication.

Mr. Yang (W)

**151. Structure and Properties of Composite Materials.** Prerequisites: course 14, at least two courses from 132, 143A, 150, 160. Relationship between structure and mechanical properties of composite materials with fiber and particulate reinforcement. Properties of fiber, matrix, and interfaces. Selection of macrostructures and material systems.

Mr. Ono (Sp)

**160. Introduction to Ceramics and Glasses.** Prerequisite: course 14 or equivalent. Introduction to ceramics and glasses being used as important materials of engineering, processing techniques, and unique properties. Examples of design and control of properties for certain specific applications in engineering.

Mr. Mackenzie (F)

**161. Processing of Ceramics and Glasses.** Lecture, four hours; discussion, one hour. Prerequisite: course 160. Study of processes used in fabrication of ceramics and glasses for structural applications, optics, and electronics. Processing operations, including modern techniques of powder synthesis, greenware forming, sintering, glass melting. Microstructure properties relations in ceramics. Fracture analysis and design with ceramics.

Mr. Mackenzie (W, even years)

**161L. Laboratory in Ceramics (2 units).** Laboratory, four hours. Prerequisite: course 160 or equivalent. Recommended corequisite: course 161. Processing of common ceramics and glasses. Attainment of specific properties through process control for engineering applications. Quantitative characterization and selection of raw materials. Slip casting and extrusion of clay bodies. Sintering of powders. Glass melting and fabrication. Determination of chemical and physical properties.

Mr. Mackenzie (Sp)

**162. Electronic Ceramics.** Prerequisites: course 14, Electrical Engineering 100, or equivalent. Utilization of ceramics in microelectronics; thick film and thin film resistors, capacitors, and substrates; design and processing of electronic ceramics and packaging; magnetic ceramics; ferroelectric ceramics and electro-optic devices; optical wave guide applications and designs.

Mr. Dunn (W, odd years)

**190. Materials Selection and Engineering Design.** Prerequisites: courses 132, 150, 160. Explicit guidance among the myriad materials available for design in engineering. Properties and applications of steels, nonferrous alloys, polymeric, ceramic, and composite materials, coatings. Materials selection, treatment, and serviceability emphasized as part of successful design. Design projects.

Mr. Yang (Sp)



**191L. Computer Methods and Instrumentation in Materials Science (2 units).** Prerequisites: upper division standing in materials science and engineering, knowledge of BASIC or C or assembly language. Interface and control techniques, real-time data acquisition and processing, computer-aided testing.

Mr. Yang (W)

**199. Special Studies (2 to 8 units).** Prerequisites: senior standing, consent of instructor. Individual investigation of selected topic to be arranged with a faculty member. Enrollment request forms available in department office. Occasional field trips may be arranged. May be repeated for credit. (F,W,Sp)

## Graduate Courses

**240A. Principles of Materials Science A (Microstructural Thermodynamics).** Prerequisites: course 130, Chemical Engineering M105A or Mechanical, Aerospace, and Nuclear Engineering M105A or equivalent. Thermodynamical equilibrium criteria for multi-component systems of materials. Phase transformations and chemical reactions. Properties of solutions; quasichemical approach. Free energy of binary systems and construction of phase diagrams. Constitution of melts. Thermodynamics of interfaces and defects.

Mr. Kikuchi (W)

**240B. Principles of Materials Science B (Structure of Materials).** Prerequisite: course 120 or equivalent. Atomic, electronic, and crystalline structure of materials; particles and waves, free electron model, binding in solids; crystal structure, real and reciprocal lattices; amorphous solids, kinematical theory of scattering, electrons in a periodic potential, pseudopotentials, conduction of electrons in solids.

Mr. Dunn, Ms. Haegel (F)

**241. Oxidation of Metals.** Prerequisite: course 130 or equivalent or consent of instructor. Kinetics and mechanism of gas-solid reactions. Absorption and phase-boundary reactions. Nucleation of reaction products, defect structure of oxides, crystal structure and morphology of oxide films, factors influencing adherence of surface films.

Mr. Douglass (W)

**242A. Plasticity Theory Applied to Metalworking I.** Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 156B. Fundamental concepts describing mechanics of plastic deformation of homogeneous solids. Yield criteria. Methods of solution, including slip line field, of problems involving plastic deformation, with examples involving plane strain and axisymmetric deformation. Extrusion problem. Application of methods of solution.

Mr. Shabaik (F, odd years)

**242B. Material Removal Processes.** Prerequisite: course 147B. Classification of material removal processes; single-point, multipoint, and abrasive material removal operations; mechanics of orthogonal and oblique machining; stress, strain, strain rate, and temperature analyses; tool wear, tool life, and tool materials; optimization; automation; and NC machining.

Mr. Shabaik (F, even years)

**243A. Fracture of Structural Materials.** Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 156B or equivalent. Engineering and scientific aspects of crack nucleation, slow crack growth, and unstable fracture. Fracture mechanics, dislocation models, fatigue, fracture in reactive environments, alloy development, fracture-safe design.

Mr. Ono (Sp, even years)

**243B. Design for Fatigue Reliability.** Prerequisites: one or more courses from 143A, Mechanical, Aerospace, and Nuclear Engineering 156A, and 156B, or equivalent. Prediction of fatigue life of machines, structures, and vehicles with statistical confidence. Design concepts and fabrication, techniques to prevent premature failure. Low-cycle, long-life, and crack growth. Effects of environment, residual stress, over-stressing, and surface treatments. Air Force specifications.

Mr. Sines (F, even years)

**243C. Dislocations and Strengthening Mechanisms in Solids.** Prerequisite: course 143A or Mechanical, Aerospace, and Nuclear Engineering 156B. Elastic and plastic behavior of crystals, geometry, mechanics, and interaction of dislocations, mechanisms of yielding, work hardening, and other strengthening.

Mr. Ardell, Mr. Ono (F, odd years)

**244. Electron Microscopy.** Prerequisite: course 111 or equivalent. Essential features of electron microscopy, geometry of electron diffraction, kinematical and dynamical theories of electron diffraction, including anomalous absorption, applications of theory to defects in crystals. Moiré fringes, direct lattice resolutions, Lorentz microscopy, laboratory applications of contrast theory.

Mr. Ardell (Sp, even years)

**245C. Diffraction Methods in Science of Materials.** Prerequisite: course 110 or equivalent. Theory of diffraction of waves (X rays, electrons, and neutrons) in crystalline and noncrystalline materials. Long- and short-range order in crystals, structural effects of plastic deformation, solid-state transformations, arrangements of atoms in liquids and amorphous solids.

Mr. Goorsky (Sp, odd years)

**246A. Mechanical Properties of Nonmetallic Crystalline Solids.** Prerequisite: course 160. Material and environmental factors affecting mechanical properties of nonmetallic crystalline solids, including atomic bonding and structure, atomic-scale defects, microstructural features, residual stresses, temperature, stress state, strain rate, size, and surface conditions. Methods for evaluating mechanical properties.

Mr. Mackenzie (W, odd years)

**246B. Structure and Properties of Glass.** Prerequisite: course 160. Structure of amorphous solids and glasses. Conditions of glass formation and theories of glass structure. Mechanical, electrical, and optical properties of glass and relationship to structure.

Mr. Mackenzie (W, even years)

**246D. Electronic and Optical Properties of Ceramics.** Prerequisite: course 160. Principles governing electronic properties of ceramic single crystals and glasses and effects of processing and microstructure on these properties. Electronic conduction, ferroelectricity, and photochromism. Magnetic ceramics. Infrared, visible, and ultraviolet transmission. Unique application of ceramics.

Mr. Dunn, Mr. Mackenzie (Sp, even years)

**247A. Solid-State Reactions.** Prerequisite: course 131. Phenomenology and atomistic mechanisms of solid-state diffusion. Nucleation theory. Theory of diffusional growth processes, kinetics of diffusional transformations in solids. Precipitation in solids. Spinodal decomposition.

Mr. Ardell (Sp, odd years)

**248A. Experimental Methods in Materials Synthesis.** Prerequisite: bachelor's degree in chemistry, physics, or engineering. Techniques used in materials synthesis temperature measurement, vacuum techniques, methods of heating and quenching, consolidation and refining of metals, crystal growth, thin film deposition and thick film deposition. Laboratory experiments and demonstrations.

Mr. Bunshah (F)

**249AA-249AZ. Seminars: Materials Science and Engineering (2 units each).** Lectures on current research topics in materials science and engineering. May be repeated for credit. S/U grading. (F,W,Sp)

**250A. Analysis and Design of Composite Materials.** Prerequisites: course 151 and one course from 143A, Electrical Engineering 175, Mechanical, Aerospace, and Nuclear Engineering 156A, or 156B. Mechanics of laminated composites, textile structural composites, strength and failure theory, fracture, fatigue and damage tolerance, environmental effects, microcomputer software for composite analysis and design.

Mr. Yang (W, even years)

**250B. Advanced Composite Materials.** Prerequisites: course 151, B.S. in Materials Science and Engineering or equivalent. Fabrication methods, structure and properties of advanced composite materials. Fibers; resin-, metal-, and ceramic-matrix composites. Physical, mechanical, and nondestructive characterization techniques.

Mr. Ono (W, odd years)

**298. Seminar: Engineering (2 to 4 units).** Prerequisites: graduate standing in materials science and engineering, consent of instructor. Seminars may be organized in advanced technical fields. If appropriate, field trips may be arranged. May be repeated with topic change.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading. (F,W,Sp)

**596. Directed Individual or Tutorial Studies (2 to 8 units).** Prerequisites: graduate standing in materials science and engineering, consent of instructor. Petition forms to request enrollment may be obtained from assistant dean, Graduate Studies. Supervised investigation of advanced technical problems. S/U grading.

**597A. Preparation for M.S. Comprehensive Examination (2 to 12 units).** Prerequisites: graduate standing in materials science and engineering, consent of instructor. Reading and preparation for M.S. comprehensive examination. S/U grading.

**597B. Preparation for Ph.D. Preliminary Examinations (2 to 16 units).** Prerequisites: graduate standing in materials science and engineering, consent of instructor. S/U grading.

**597C. Preparation for Ph.D. Oral Qualifying Examination (2 to 16 units).** Prerequisites: graduate standing in materials science and engineering, consent of instructor. Preparation for oral qualifying examination, including preliminary research on dissertation. S/U grading.

**598. Research for and Preparation of M.S. Thesis (2 to 12 units).** Prerequisites: graduate standing in materials science and engineering, consent of instructor. Supervised independent research for M.S. candidates, including thesis prospectus. S/U grading.

**599. Research for and Preparation of Ph.D. Dissertation (2 to 16 units).** Prerequisites: graduate standing in materials science and engineering, consent of instructor. Usually taken after student has been advanced to candidacy. S/U grading.

## Mechanical, Aerospace, and Nuclear Engineering

48-121 Engineering IV, (310) 825-2281

### Professors

Mohamed A. Abdou, Ph.D.  
George E. Apostolakis, Ph.D.  
Ivan Catton, Ph.D.  
Robert W. Conn, Ph.D.  
Vijay K. Dhir, Ph.D.  
Peretz P. Friedmann, Sc.D.  
Nasr M. Ghoniem, Ph.D.  
James S. Gibson, Ph.D.  
H. Thomas Hahn, Ph.D. (*Hughes Aircraft Company Professor of Manufacturing Engineering*)  
Chih-Ming Ho, Ph.D.  
William E. Kastenber, Ph.D.  
Robert E. Kelly, Sc.D.  
J. John Kim, Ph.D.  
Ajit K. Mal, Ph.D.  
William C. Meecham, Ph.D.  
Anthony F. Mills, Ph.D.  
D. Lewis Mingori, Ph.D.  
Peter A. Monkewitz, Ph.D.

Gerald C. Pomraning, Ph.D.  
Jason Speyer, Ph.D., *Chair*

#### Professors Emeriti

Harry Buchberg, M.S.  
Andrew F. Charwat, Ph.D.  
Kurt Forster, Ph.D.  
Walter C. Hurty, M.S.  
Cornelius T. Leondes, Ph.D.  
Michel A. Melkanoff, Ph.D.  
Philip F. O'Brien, M.S.  
David Okrent, Ph.D.  
Russell R. O'Neill, Ph.D., *Dean Emeritus*  
Lucien A. Schmit, Jr., M.S.  
Chauncey Starr, Ph.D., *Dean Emeritus*  
Richard Stern, Ph.D.  
William T. Thomson, Ph.D.  
Russell A. Westmann, Ph.D.

#### Associate Professors

Oddvar O. Bendiksen, Ph.D.  
Ann R. Karagozian, Ph.D.  
Adrienne G. Lavine, Ph.D.  
Daniel C.H. Yang, Ph.D.

#### Assistant Professors

Gregory Carman, Ph.D.  
Chang J. Kim, Ph.D.  
Denny K. Miu, Ph.D.  
Abdon E. Sepulveda, Ph.D.  
Zvi Shiller, Ph.D.  
Xiaolin Zhong, Ph.D.

#### Senior Lecturers

C.H. Chang, M.S.  
Alexander Samson, Ph.D., *Emeritus*

#### Adjunct Professors

Yoseph Bar-Cohen, Ph.D.  
Rudolph X. Meyer, Ph.D.

#### Adjunct Associate Professor

Sukumar Chakravarthy, Ph.D.

## Scope and Objectives

The Mechanical, Aerospace, and Nuclear Engineering Department encompasses professional disciplines that are often divided into separate departments at other engineering schools. Curricula in aerospace engineering and mechanical engineering are offered on the undergraduate and graduate levels, while nuclear engineering is a graduate program. The Gorman Report ranked UCLA's mechanical engineering program tenth in the nation for undergraduate programs.

Because of the scope of the department, faculty research and teaching cover a wide range of technical disciplines. Research in thermal engineering emphasizes basic heat and mass transfer processes as well as thermal hydraulics. Topics in the area of design, dynamics, and control include robotics, mechanism design, control and guidance of aircraft and spacecraft, helicopter dynamics and aeromechanics, and dynamics and control of large space structures. Studies in structural mechanics range from fracture mechanics and wave propagation, structural dynamics and aeroelasticity of helicopters and jet engine blades, computational transonic aeroelasticity to structural optimization and synthesis, and

mechanics of composite structures. In the area of fluid mechanics and acoustics, investigations are under way on combustion, flow instabilities, turbulence and thermal convection, aeroacoustics, and unsteady aerodynamics of turbomachines, helicopter rotors, and fixed-wing aircraft. Other areas of research include applied plasma physics, surface modification by plasma, fusion reactor design, experimental tokamak confinement physics; light water reactor safety; reliability and risk assessment methodology; societal risk management; and nuclear materials. The department also has research activity in computer-aided design and manufacturing.

At the undergraduate level, the department offers accredited programs leading to Bachelor of Science degrees in Aerospace Engineering and in Mechanical Engineering. The former includes opportunity to emphasize propulsion, aerodynamics, preliminary design, dynamics and control, or structures and space technology, while the latter includes opportunity to emphasize mechanical systems — design and control; power systems and thermal design; manufacturing processes; or fluids engineering.

At the graduate level, the department offers programs leading to M.S. and Ph.D. degrees in Mechanical Engineering, Aerospace Engineering, and Nuclear Engineering. An M.S. in Manufacturing Engineering is also offered.

## Bachelor of Science in Aerospace Engineering

The ABET-accredited aerospace engineering program is concerned with the design and construction of various types of fixed-wing and rotary-wing (helicopters) aircraft used for air transportation and national defense. It is also concerned with the design and construction of spacecraft, the exploration and utilization of space, and related technological fields.

Aerospace engineering is characterized by a very high level of technology. The aerospace engineer is likely to operate at the forefront of scientific discoveries, often stimulating these discoveries and providing the inspiration for the creation of new scientific concepts. Meeting these demands requires the imaginative use of many disciplines, including fluid mechanics and aerodynamics, structural mechanics, materials and aeroelasticity, dynamics, control and guidance, propulsion, and energy conversion.

### The Major

Course requirements are as follows (190 minimum units required):

(1) Nine department core courses: Civil Engineering 108, Electrical Engineering 100, Materials Science and Engineering 14, Mechanical, Aerospace, and Nuclear Engineering 102, 103, M105A, 105D, 157, 192A.

(2) Twelve aerospace engineering core courses: Electrical Engineering 102; Mechanical, Aerospace, and Nuclear Engineering 150A, 150B, 150P, 154A, 154B, 154S, 157A, 161A or 169A, 166A, 171A; one mathematics elective from Mechanical, Aerospace, and Nuclear Engineering 191A, 192B, 192C, 192D, Electrical Engineering 103, 131A.

(3) Sixteen technical elective units (which should contain enough design units to satisfy the overall program requirement of at least 24 design units) selected from Mechanical, Aerospace, and Nuclear Engineering 131A/131AL, 132A, 133A (thermodynamics, heat, and mass transfer); 153A (acoustics); 155, 163A, 164, 169A\*, Civil Engineering 137L, Electrical Engineering 142 (dynamics and control); Mechanical, Aerospace, and Nuclear Engineering 161A\*, 161B, 161C, 161D (space technology); 156B, 166C, 168, Civil Engineering 130F (structural and solid mechanics); Mechanical, Aerospace, and Nuclear Engineering 162A, 162C, M192F (design and mechanisms); Materials Science and Engineering 143A, 143L, 147B.

(4) Chemistry and Biochemistry 11A, 11B/11BL; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Mechanical, Aerospace, and Nuclear Engineering 20; Physics 8A/8AL, 8B/8BL, 8C/8CL, 8D/8DL.

(5) SEAS general education (GE) course requirements — see "Curricular Requirements" (item 4) earlier in this chapter for details.

## Bachelor of Science in Mechanical Engineering

The ABET-accredited mechanical engineering program is designed to provide a basic knowledge in thermodynamics, fluid mechanics, heat transfer, solid mechanics, mechanical design, dynamics, control, mechanical systems, manufacturing, and materials. The program includes fundamental subjects important to all mechanical engineers, with an option in mechanical systems — design and control; power systems and thermal design; manufacturing processes; or fluids engineering.

### The Major

Course requirements are as follows (192 minimum units required):

(1) Nine department core courses: Civil Engineering 108, Electrical Engineering 100 (also 110L — see item 2 below), Materials Science and Engineering 14, Mechanical, Aerospace, and Nuclear Engineering 102, 103, M105A, 105D, 157, 192A.

(2) Ten mechanical engineering core courses: Electrical Engineering 110L (may be taken concurrently with 100), Materials Science and Engineering 147B, Mechanical, Aerospace, and Nuclear Engineering 131A, 133A, 156A, 162A, 162B, 162M, 169A, 171A.

\*Unless taken as part of the core.

(3) Twenty technical elective units, of which at least four should be laboratory units, to be selected from one of the subject areas listed below; no more than eight units may be taken from any one of subgroups a, b, c:

#### Fluids Engineering —

(a) Mechanical, Aerospace, and Nuclear Engineering 157A.

(b) Electrical Engineering 103, Mechanical, Aerospace, and Nuclear Engineering 150A, 150B, 153A, 192B, 192C.

(c) Mechanical, Aerospace, and Nuclear Engineering 136, 150P, 151, 161A, 161B.

#### Manufacturing Processes —

(a) Materials Science and Engineering 143L, 147L, 161L, Mechanical, Aerospace, and Nuclear Engineering 163B, 163C, 194, 195.

(b) Materials Science and Engineering 143A, Mechanical, Aerospace, and Nuclear Engineering 163A, 164.

(c) Civil Engineering 175, Mechanical, Aerospace, and Nuclear Engineering 155, 174, 194.

#### Mechanical Systems — Design and Control —

(a) Civil Engineering 130F, 137L, Materials Science and Engineering 143L, Mechanical, Aerospace, and Nuclear Engineering 162C, 163B, 163C, 194.

(b) Electrical Engineering 103, 131A, 131B, Mathematics 115A, 115B, 131A, 131B, Mechanical, Aerospace, and Nuclear Engineering 155, 156B, 164, 174, 191A.

(c) Materials Science and Engineering 143A, Mechanical, Aerospace, and Nuclear Engineering 163A, 168.

#### Power Systems and Thermal Design —

(a) Mechanical, Aerospace, and Nuclear Engineering 131AL.

(b) Electrical Engineering 103, Mechanical, Aerospace, and Nuclear Engineering 132A, 135, 150A, 192B, 192C.

(c) Mechanical, Aerospace, and Nuclear Engineering 134B, 136, 150P, 151, 161B, 174.

(4) Chemistry and Biochemistry 11A, 11B/11BL; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Mechanical, Aerospace, and Nuclear Engineering 20, 94; Physics 8A/8AL, 8B/8BL, 8C/8CL, 8D/8DL.

(5) SEAS general education (GE) course requirements — see "Curricular Requirements" (item 4) earlier in this chapter for details.

(6) Four free technical elective units selected from upper division courses offered by the department; you are strongly encouraged to consult your adviser.

## Graduate Study

For information on graduate admission to the mechanical, aerospace, and nuclear engineering programs and requirements for the M.S.

and Ph.D. degrees, see "Graduate Study" at the beginning of this chapter.

## Lower Division Courses

**1. Energy: Resources, Conversion, Utilization, and the Environment.** Lecture, three hours; laboratory, one hour; outside study, eight hours. Intended for students interested in energy. Topics include resources, conversion and utilization using fossil and nuclear fuels, solar, geothermal, and biomass. Conservation, sociopolitical aspects, and the environment. Mr. Kastenber (Sp)

**2. Toxic Waste Control.** Lecture, three hours; discussion, one hour. Intended for students interested in toxic wastes. Topics include sources of toxic substances, effects on public health and environment, technological solutions, public policy, and risk assessment. Mr. Kastenber (W)

**20. FORTRAN Programming with Numerical Methods Applications.** Lecture, three hours; laboratory, two hours; outside study, seven hours. Prerequisites: Mathematics 31A, 31B. Introduction to programming with FORTRAN. Applications to numerical methods used in engineering. Ms. Lavine (F,W,Sp)

**94. Introduction to Computer-Aided Design and Drafting.** Lecture, two hours; laboratory, four hours. Fundamentals of computer graphics and two- and three-dimensional modeling on computer-aided design and drafting systems. Students use one or more on-line computer systems to design and display various objects. Mr. Yang (F,W)

## Upper Division Courses

**102. Mechanics of Particles and Rigid Bodies.** Lecture, three hours; recitation, two hours. Prerequisites: Mathematics 33A, Physics 8A. Newtonian mechanics (statics and dynamics) of particles and rigid bodies. Fundamental concepts of mechanics. Statics, kinematics, and kinetics of particles and rigid bodies. Impulse/momentum and work/energy relationships. Applications. Mr. Mingori (F,W,Sp)

**103. Elementary Fluid Mechanics.** Lecture, three hours; recitation, two hours. Prerequisites: Mathematics 32B, 33A, Physics 8B. Introductory course dealing with application of principles of mechanics to flow of compressible and incompressible fluids. Mr. Kelly (F,W,Sp)

**M105A. Introduction to Engineering Thermodynamics.** (Same as Chemical Engineering M105A.) Lecture, four hours; recitation, one hour. Prerequisites: Physics 8B, Mathematics 32B. Phenomenological thermodynamics. Concepts of equilibrium, temperature, and reversibility. First law and concept of energy; second law and concept of entropy. Equations of state and thermodynamic properties. Engineering applications of these principles in analysis and design of closed and open systems. Mr. Dhir (F,W,Sp)

**105D. Transport Phenomena.** Lecture, four hours; recitation, one hour. Prerequisites: Physics 8B, Mathematics 32B, 33A. Transport phenomena: heat conduction, mass species diffusion, convective heat and mass transfer, and radiation. Engineering applications in thermal and environmental control. Ms. Lavine (F,W,Sp)

**131A. Intermediate Heat Transfer.** Lecture, four hours; other, eight hours. Prerequisite: course 105D. Steady conduction: two-sided, two-ended, tapered, and circular fins; buried cylinders, thick fins. Transient conduction: slabs, cylinders, products. Convection: transpiration, laminar pipe flow, film condensation, boundary layers, dimensional analysis, working correlations. Surface radiation. Two-stream heat exchangers. Elements of thermal design. Mr. Catton (F,Sp)

**131AL. Thermodynamics and Heat Transfer Laboratory.** Laboratory, eight hours; other, four hours. Prerequisites: courses 131A, 157. Experimental study of physical phenomenon and engineering systems using modern data acquisition and processing techniques. Experiments include studies of heat transfer phenomena and testing of a cooling tower, heat exchanger, and internal combustion engine. Students take and analyze data and discuss physical phenomena. Mr. Mills (Sp)

**132A. Mass Transfer.** Lecture, four hours; other, eight hours. Prerequisites: courses 105D, 131A. Principles of mass transfer by diffusion. Mass transfer by convection in laminar and turbulent flows. Simultaneous heat and mass transfer. Applications including combustion of solids and volatile fuels, evaporation and condensation, ablation and transpiration cooling, gas absorption and catalysis. Mr. Mills (F)

**133A. Engineering Thermodynamics.** Lecture, four hours; other, eight hours. Prerequisites: courses 103, M105A, 105D. Applications of thermodynamic principles to engineering processes. Energy conversion systems. Rankine cycle and other cycles, refrigeration, psychrometry, reactive and nonreactive fluid flow systems. Mr. Dhir (F,Sp)

**134B. Solar Energy Use and Control.** Lecture, four hours; other, eight hours. Prerequisite: course 105D or equivalent or consent of instructor. Nature and availability of solar radiation; review of selected heat transfer topics pertinent to solar energy collection and use; design analysis of nonfocusing solar energy collector-converters and methods of energy storage; selected applications. Mr. Mills

**135. Fundamentals of Nuclear Power.** Prerequisite: junior standing. Introduction to nuclear engineering; nuclear physics, neutron cross sections, nuclear fission and fusion; elementary analysis and design of reactors. Criticality, one-group neutron diffusion theory, heat removal, and heterogeneous effects. Mr. Kastenber (F)

**136. Thermal Hydraulic Design of Nuclear and Other Power Systems.** Prerequisite: senior standing. Thermal hydraulic design of nuclear and other power systems, power generation and heat removal, power cycle, thermal hydraulic component design, overall plant design, steady state and transient operation. Mr. Dhir (W)

**137. Introduction to Fusion Engineering and Reactor Design.** Prerequisite: course 135 or consent of instructor. Fusion reactions, fuel cycle, and operating conditions. Magnetic and inertial confinement, including tokamaks, magnetic mirrors, laser fusion, and selected others. Concepts for and subsystems of fusion reactors. Design of reactors and key subsystems. Application of fusion reactors for electricity, fissionable fuel, and/or chemical fuel production. Mr. Conn

**150A. Intermediate Fluid Mechanics.** Prerequisite: course 103 or equivalent or consent of instructor. Basic equations governing fluid motion. Fundamental solutions of Navier/Stokes equations. Lubrication theory. Elementary potential flow theory. Boundary layers. Turbulent flow in pipes and boundary layers. Compressible flow: normal shocks, channel flow with friction or heat addition. Mr. Kelly (F,W)

**150B. Aerodynamics.** Prerequisites: courses 103, 150A, or equivalent. Advanced aspects of potential flow theory. Incompressible flow around thin airfoils ( $C_L$ ,  $C_m$ ) and wings (lift, induced drag). Gas dynamics: oblique shocks, Prandtl/Meyer expansion. Linearized subsonic and supersonic flow around thin airfoils and wings. Wave drag. Transonic flow. Mr. Kelly (Sp)

**150P. Jet Propulsion Systems.** Lecture, four hours; laboratory, two hours. Prerequisites: courses M105A, 150A, or equivalent. Thermodynamic properties of gases, aircraft jet engine components and cycle analysis, combustion systems, performance of rocket vehicles. Ms. Karagozian (F)

**151. Performance of Vehicles.** Lecture, four hours; other, eight hours. Prerequisites: courses 103, M105A. Transportation systems and their characteristics in terms of speed, range, payload, efficiency, etc. Engines: power available. Vehicles, including automobiles, trains, aircraft, and boats: power required. Engine-vehicle mission matching. Mr. Kelly (Sp)

**153A. Engineering Acoustics.** Prerequisite: upper division standing in engineering or consent of instructor. Fundamental course in acoustics; propagation of sound; sources of sound. Design of field measurements. Estimation of jet and blade noise with design aspects. Mr. Meecham (W)

**154A. Preliminary Design of Aircraft.** Prerequisite: course 154S. Classical preliminary design of an aircraft, including weight estimation, performance and stability, and control consideration. Term assignment consists of preliminary design of a low-speed aircraft. Mr. Bendiksen, Mr. Friedmann (W)

**154B. Design of Aerospace Structures.** Prerequisites: courses 154A, 166A. Design of aircraft, helicopter, spacecraft, and related structures. External loads, internal stresses. Applied theory of thin-walled structures. Material selection, design using composite materials. Design for fatigue prevention and structural optimization. Field trips to aerospace companies. Mr. Bendiksen, Mr. Friedmann (Sp)

**154S. Flight Mechanics, Stability, and Control of Aircraft.** Prerequisites: courses 150A, 150B. Aircraft performance, flight mechanics, stability, and control; some basic ingredients needed for design of an aircraft. Effects of airplane flexibility on stability derivatives. Mr. Friedmann (F)

**155. Intermediate Dynamics.** Lecture, four hours; other, eight hours. Prerequisite: course 102 or equivalent. Axioms of Newtonian mechanics, generalized coordinates, Lagrange equation, variational principles; central force motion; kinematics and dynamics of a rigid body. Euler equations, motion of rotating bodies, oscillatory motion, normal coordinates, orthogonality relations. Mr. Gibson (Sp)

**156A. Strength of Materials.** Lecture, four hours; outside study, eight hours. Prerequisite: Civil Engineering 108 or equivalent. Concepts of stress and material behavior. Stresses in loaded beams with symmetric and asymmetric cross sections. Torsion of cylinders and thin-walled structures, shear flow. Stresses in pressure vessels, press-fit and shrink-fit problems, rotating shafts. Curved beams. Contact stresses. Strength and failure, plastic deformation, fatigue, elastic instability. Mr. Mal (F,Sp)

**156B. Introduction to Elasticity.** (Formerly numbered 158A.) Lecture, four hours; outside study, eight hours. Prerequisite: course 156A or equivalent. Kinematics of deformation, strain displacement relations. Balance laws, stress tensor, principal stresses, equilibrium equations. Conservation of energy, strain energy function. Generalized Hooke's law, thermoplasticity and viscoelasticity. Stress calculation in cylinders and spheres. Plane elasticity, Airy stress function. Stress concentration problems at holes, corners, and crack tips. Mr. Mal (W)

**157. Basic Mechanical Engineering Laboratory.** Laboratory, eight hours; other, four hours. Prerequisites: courses 103, M105A, 105D, Civil Engineering 108. Methods of measurement of basic quantities and performance of basic experiments in heat transfer, fluid mechanics, structures, and thermodynamics. Primary sensors, transducers, recording equipment, signal processing, and data analysis. Mr. Mills (F,W,Sp)

**157A. Fluid Mechanics/Aerodynamics Laboratory.** Laboratory, eight hours. Prerequisites: courses 103, 150A, 150B, and 157, or consent of instructor. Experimental illustration of important physical phenomena in area of fluid mechanics/aerodynamics, as well as hands-on experience with design of experimental programs and use of modern experimental tools and techniques in the field. Mr. Monkewitz (Sp)

**161A. Introduction to Astronautics.** Prerequisite: course 102. Space-environment of Earth, trajectories and orbits, step rockets and staging, two-body problem, orbital transfer and rendezvous, problem of three-bodies, elementary perturbation theory, influence of Earth's oblateness. Mr. Gibson (F)

**161B. Introduction to Space Technology.** Lecture, four hours; other, eight hours. Recommended (but not prerequisite): courses 102, 105D, 150P, 161A. Propulsion requirements for typical space missions, thermochemistry of propellants, internal ballistics, regenerative cooling, liquid propellant feed systems, POGO instability. Electric propulsion. Multistage rockets, separation dynamics. Satellite structures and materials, loads and vibrations. Thermal control of spacecraft. Mr. Mingori (W)

**161C. Spacecraft Design.** Lecture, four hours; other, eight hours. Prerequisite: course 161B. Coverage of preliminary design, by students, of a small spacecraft carrying a lightweight scientific payload with modest requirements for electric power, lifetime, and attitude stability. Students work in groups of three or four, with each student responsible primarily for a subsystem and for integration with the whole. Mr. Bendiksen, Mr. Meyer (Sp)

**161D. Space Technology Hardware Design (2 units).** Lecture, one hour; laboratory, two hours; outside study, three hours. Prerequisite or corequisite: course 161B. Design, by students, of hardware with applications to space technology. Best designs are then built by professional machine shop and tested by the students. May be taken in Winter or Spring Quarter, or twice with different projects in each term. Mr. Meyer (W,Sp)

**162A. Introduction to Mechanisms and Mechanical Systems.** Lecture, four hours; other, eight hours. Prerequisite: course 102. Analysis and synthesis of mechanisms and mechanical systems. Kinematics, dynamics, and mechanical advantages of machinery. Displacement, velocity, and acceleration analyses of linkages. Fundamental law of gearing and various gear trains. Computer-aided mechanism design and analysis. Mr. Yang (F)

**162B. Fundamentals of Mechanical System Design.** Lecture, three hours; discussion, one hour; laboratory, two hours; outside study, six hours. Prerequisites: courses 102, 156A. Lecture and laboratory (design) course involving modern design techniques for development of mechanical systems. Theoretical studies precede design of several types of mechanical power transmission components, bolted and welded joints, springs, and bearings. Students design a mechanical system. Mr. Yang (F,W)

**162C. Electromechanical System Design Laboratory.** Lecture, one hour; laboratory, eight hours; other, three hours. Prerequisite: course 162B. Laboratory and design course consisting of design, development, construction, and testing of complex mechanical and electromechanical systems. The assembled machine is instrumented and monitored for operational characteristics. Mr. Yang (Sp)

**162M. Senior Mechanical Engineering Design.** Lecture, one hour; laboratory, six hours; other, five hours. Prerequisites: course 162B, Civil Engineering 106A. Must be taken in last two academic terms of students' programs. Analytical design course of a large engineering system culminating in its computer simulation. Design factors include efficiency, economy, safety, reliability, and social impact. Final report of engineering specifications and drawings to be presented by design teams. Mr. Yang (W,Sp)

**163A. Introduction to Computer-Controlled Machines.** (Formerly numbered 163.) Prerequisite: course 171A (may be taken concurrently). Modeling of computer-controlled machines, including electrical and electronic elements, mechanical elements, actuators, sensors, and overall electromechanical systems. Motion and command generation, servo-controller design, and computer/machine interfacing. Mr. Yang (F)

**163B. Interfacing of Computer-Controlled Machines.** (Formerly numbered 162L.) Laboratory, eight hours. Prerequisite: course 171A. Recommended: courses 162B, 163A, 163C. Hands-on experience with computer-controlled electromechanical systems, with special emphasis on real-time programming and interfacing techniques of microprocessors and their integration with sensors and actuators. Final design project required. Mr. Miu (Sp)

**163C. Robotics and Motion Control Laboratory.** (Formerly numbered 163L.) Laboratory, eight hours; outside study, four hours. Prerequisite: course 171A or consent of instructor. Hands-on experience with robotic devices and articulated machines, with emphasis on motion planning and control. Design and implementation of servo control of DC motors, gear trains, multi-axes coordination, programming of industrial robots. Final project required. Mr. Shiller (W)

**164. Digital Control of Physical Systems.** Prerequisite: course 171A or Electrical Engineering 141. Analysis and design of digital control systems. Discrete-time transfer functions for physical systems. Design using classical methods: performance specifications, frequency response, root locus; compensation. Design using state-space methods: control laws, estimators. Practical considerations: roundoff, sample rate selection, computer implementation. Mr. Mingori (Sp)

**166A. Analysis of Flight Structures.** Prerequisite: Civil Engineering 108. Introduction to two-dimensional elasticity, stress-strain laws, yield and fatigue; bending of beams; torsion of beams; warping; torsion of thin-walled cross sections: shear flow, shear-lag; combined bending torsion of thin-walled, stiffened structures used in aerospace vehicles; elements of plate theory; buckling of columns. Mr. Friedmann (F,W)

**166C. Design of Composite Structures.** Prerequisite: course 156A or 166A. History of composites, stress-strain relations for composite materials, bending and extension of symmetric laminates, failure analysis, design examples and design studies, buckling of composite components, nonsymmetric laminates, micromechanics of composites. Mr. Friedmann (W)

**168. Introduction to Finite Element Technology.** Lecture, four hours; laboratory, four hours; other, four hours. Prerequisites: Civil Engineering 108, Computer Science 10F, Mathematics 33A. Recommended: courses 94 or 194, 166A. Introduction to finite element method (FEM) and its matrix formulation; computer implementation of FEM concepts; practical use of FEM codes. Preprocessing and postprocessing techniques; graphics display capabilities; geometric and analysis modeling; interactive engineering systems; links with computer-aided design. Recent trends in FEM technology; design optimization. Term projects using FEM computer codes. Mr. Yang (Sp)

**169A. Introduction to Mechanical Vibrations.** (Formerly numbered M169A.) Lecture, four hours; other, eight hours. Prerequisites: course 102, Civil Engineering 108. Fundamentals of vibration theory and applications. Free, forced, and transient vibration of one and two degrees of freedom systems, including damping. Normal modes, coupling, and normal coordinates. Vibration isolation devices, vibrations of continuous systems. Mr. Bendiksen (F,W)

**171A. Introduction to Feedback and Control Systems: Dynamic Systems Control I.** Prerequisite: course 191A or 192A or Electrical Engineering 102 or equivalent. Introduction to feedback principles, control systems design, and system stability. Modeling of physical systems in engineering and other fields; transform methods; controller design using Nyquist, Bode, and root locus methods; compensation; computer-aided analysis and design. Mr. Mingori (F,W)

**171C. Dynamic Systems Control II.** Recommended (but not prerequisite): course 171A or Electrical Engineering 141. State-space models of continuous and discrete-time dynamic systems. Linear algebra of systems; vector spaces; geometric concepts; transformations and matrices; canonical forms. Stability. Controllability and observability. State representation of nonlinear systems; linearization. Emphasis on modeling concepts, applications, and computer-aided problem solving. Mr. Speyer

**174. Probability and Its Applications to Risk, Reliability, and Quality Control.** Lecture, four hours; outside study, eight hours. Introduction to probability theory; random variables, distributions, functions of random variables, models of failure of components, reliability, redundancy, complex systems, stress-strength models, fault tree analysis, statistical quality control by variables and by attributes, acceptance sampling. Mr. Apostolakis (F)

**175. Applications of Probabilistic Risk Analysis.** Prerequisite: consent of instructor. Applications of probabilistic models for failure of components, subsystems, and systems. Derivation and application of models for source terms, dispersion, dose-response relationships, and cost/benefit relationships. Emphasis on several case studies (e.g., hazardous waste control, energy systems, and high-level radioactive waste). Mr. Kastenber

**180A. Environmental Biotechnology.** Prerequisite: consent of instructor. Physical, physiological, and psychological aspects of interaction between man and thermal, atmospheric, radiant, and mechanical agents and energies in the environment. Biological and physical requirements for engineering control of the environment; applications to complex systems. Mr. Meecham

**191A. Laplace Transforms and Applied Complex Variables.** Lecture, four hours; discussion, two hours. Prerequisites: Mathematics 32A, 32B, 33A, 33B. Introduction to Laplace transformation: application to electrical and mechanical problems, convolution-type integral equations, difference equations, and simple boundary value problems in partial differential equations. Complex variable theory, contour integrals, residues; application to transform inversion and partial differential equations. Mr. Ghoniem (W)

**192A. Mathematics of Engineering.** (Formerly numbered M192A.) Prerequisites: Mathematics 33A, 33B. Methods of solving ordinary differential equations in engineering. Review of matrix algebra. Solutions of systems of first- and second-order ordinary differential equations. Introduction to Laplace transforms and their application to ordinary differential equations. Introduction to boundary value problems. Mr. Kastenber (F,W,Sp)

**192B. Mathematics of Engineering.** Prerequisite: course 192A or equivalent. Analytical methods for solving partial differential equations arising in engineering. Separation of variables, eigenvalue problems, Sturm-Liouville theory. Development and use of special functions. Representation by means of orthonormal functions; Galerkin method. Use of Green's function and transform methods. Mr. Kelly (Sp)

**192C. Numerical Methods for Engineering Applications.** Recommended (but not prerequisite): Electrical Engineering 103. Basic topics from numerical analysis having wide application in solution of practical engineering problems. Solution of linear and nonlinear systems. Algebraic eigenvalue problem. Least-square methods, numerical quadrature, and finite difference approximations. Numerical solution of initial and boundary value problems for ordinary and partial differential equations. Mr. Zhong (F)

**192D. Introduction to Random Processes.** (Formerly numbered 193A.) Lecture, four hours; outside study, eight hours. Recommended (but not prerequisite): course 174 or equivalent. Elements of probability, time series, probability density function (PDF), averages, characteristics function; joint PDF, correlation function, and energy density function; Gaussian distributions, white noise process; random walk, least-square linear smoothing. Mr. Meecham (W, alternate years)

**M192F. Numerical Optimization Methods for Engineering Design.** (Same as Civil Engineering M140.) Prerequisites: Computer Science 10F, Mathematics 32A, 33A. Recommended: Mathematics 115A. Systematic presentation of numerical optimization methods for engineering design; one-dimensional minimization, unconstrained minimization, linearly constrained minimization, general nonlinear problems, approximation concepts, duality. Optimization problem statements. Advantages and limitations of numerical optimization. Applications to general design in mechanical, aerospace, and manufacturing engineering. Mr. Friedmann (F)

**194. Introduction to CAD/CAM Systems: Design and Implementation.** (Formerly numbered 194A, 194B.) Laboratory, eight hours; outside study, four hours. Prerequisites: course 94 or consent of instructor, FORTRAN programming language. Hands-on experience with CAD/CAM systems design and implementation, with special emphasis on theory of parametric curves and surfaces for design and manufacturing and their computer interactive graphics implementation. Mr. Yang (Sp)

**195. Computer Numerical Control and Applications.** (Formerly numbered 195A.) Laboratory, eight hours; outside study, four hours. Prerequisite: upper division standing. Fundamentals of numerical control (NC) technology. Programming of computer numerical control (CNC) machines in NC codes and APT language and with CAD/CAM systems. NC postprocessors and distributed numerical control. Operation of CNC lathe and milling machines. Programming and machining of complex engineering parts. Mr. Chang (Sp)

**199. Special Studies (2 to 8 units).** Prerequisites: senior standing, consent of instructor. Individual investigation of selected topic to be arranged with a faculty member. Enrollment request forms available in department office. Occasional field trips may be arranged. May be repeated for credit. (F,W,Sp)

## Graduate Courses

**201. Mechanical, Aerospace, and Nuclear Engineering Seminar (2 units).** Prerequisite: graduate standing in engineering. Lectures on current research topics in mechanics and structures. May be repeated for credit. S/U grading. Mr. Speyer

**202. Manufacturing Engineering Seminar (2 units).** Prerequisite: graduate standing in engineering. Lectures on current research and development in manufacturing engineering. S/U grading. Mr. Yang

**231A. Convective Heat Transfer Theory.** Prerequisite: course 131A. Conservation equations for flow of real fluids. Analysis of heat transfer in laminar and turbulent, incompressible and compressible flows. Internal and external flows; free convection. Variable wall temperature; effects of variable fluid properties. Analogies among convective transfer processes. Ms. Lavine (W)

**231B. Radiation Heat Transfer.** Prerequisite: course 131A. Radiant intensity and flux. Radiation properties of walls, gases, and particulates. Heat transfer by combined conduction, convection, and radiation in nonabsorbing and absorbing media. Applications to industrial, aerospace, energy conversion, and environmental problems. Mr. Pomraning (Sp)

**231C. Boiling and Condensation.** Prerequisites: courses 131A, 150A, or equivalent. Phenomenological theories of boiling. Hydrodynamic instability of liquid-vapor interfaces and their application to predict maximum and minimum heat fluxes. Forced flow boiling and boiling crisis in pipes. Pool and forced flow boiling of liquid metals. Film and dropwise condensation. Mr. Dhir (W)

**231D. Application of Numerical Methods to Transport Phenomena.** Prerequisite: course 132A or consent of instructor. Numerical techniques for solving selected problems in heat and mass transfer. Applications include free convection, boundary layer flow, two-phase flow, separated flow, flow in porous media. Effects of concentration and temperature gradients, chemical reactions, radiation, electric and magnetic fields. Mr. Catton (Sp)

**231E. Two-Phase Flow Heat Transfer.** Prerequisites: courses 131A, 150A. Generalized constitutive equations for various two-phase flow regimes. Interfacial heat and mass transfer. Equilibrium and nonequilibrium flow models. Two-phase flow instability. One-dimensional wave propagation. Two-phase heat transfer applications: convective boiling, pressure drop, critical and oscillatory flows. Mr. Dhir (F)

**231F. Advanced Heat Transfer.** Prerequisite: course 131A. Advanced topics in heat transfer from current literature. Linear and nonlinear theories of thermal and hydrodynamic instability; variational methods in transport phenomena; phenomenological theories of turbulent heat and mass transport. Mr. Catton (Sp)

**232B. Advanced Mass Transfer.** Prerequisites: courses 131A, 132A. Formulation of general convective heat and mass transfer problem, including equilibrium and nonequilibrium chemistry. Similar and nonsimilar solutions for laminar flows; solution procedures for turbulent flows. Multicomponent diffusion. Application to hypersonic boundary layer, ablation and transpiration, cooling combustion. Mr. Mills (W)

**233A. Advanced Power Production and Propulsion.** Prerequisite: course 133A or equivalent. Thermodynamic cycle analysis. Fluid mechanics and thermodynamics of compressors and turbines. Component matching. Atomization and vaporization. Flow and mixing in combustion chambers. Flame stabilization and combustion instabilities. Turbojet and ramjet engines and gas turbines. Rocket propulsion and stability of combustion processes. Mr. Dhir

**234A. Topics in Thermal Design.** Prerequisites: courses 131A, 132A. Consideration of thermal design problems selected from applications such as heat exchangers, heat shields, heat pipes, thermal environment control, spacecraft temperature control, and solar thermal conversion. Presentations made by the staff and occasionally by invited off-campus specialists. Mr. Mills (Sp)

**235A. Nuclear Reactor Theory.** Prerequisites: courses 135, 192A. Underlying physics and mathematics of nuclear reactor (fission) core design. Diffusion theory, reactor kinetics, slowing down and thermalization, multigroup methods, introduction to transport theory. Mr. Pomraning

**235B. Kinetic Theory of Plasmas and Particle Transport.** Prerequisites: course 135 or 137 and Electrical Engineering M185, or consent of instructor. Unified kinetic theory treatment of plasma, neutron, and radiation transport phenomena. Liouville equation, Boltzmann collision integral and H-theorem. Derivation of Fokker-Planck, neutron, and radiation transport equations. Fluid moment equations, dispersion relations, space and time relaxation phenomena. Applications from neutron transport, plasma physics, and radiative transfer. Mr. Conn, Mr. Pomraning

**236A. Nuclear Materials Engineering.** Prerequisites: course 135 and Materials Science and Engineering 143A, or consent of instructor. Materials requirements for nuclear technologies; radiation effects on mechanical properties, void swelling and creep, fuel and solid breeder swelling and restructuring, gas release, computer codes for swelling and gas release, structural analysis of fission and fusion materials including radiation effects. Mr. Ghoniem (F)

**236B. Radiation Effects and Applications in Advanced Technologies.** Prerequisites: courses 135 and 192A, or consent of instructor. Fundamentals of radiation damage; atomic collision theory, energy loss of energetic ions, atom displacement, collision cascade. Bulk and surface effects of radiation; applications of radiation effects to fusion materials, microelectronic materials, and thin films; accelerator technologies. Mr. Ghoniem

**236C. Nuclear Reactor Safety.** Prerequisites: courses 135, 136, and 235A, or consent of instructor. Safety-related characteristics of thermal and fast nuclear power reactors; design criteria and siting considerations; methods of accident analysis; general risk considerations. Analysis of specific accidents; anticipated transients without scram, loss-of-coolant accidents, and reactivity transients. Mr. Kastenber (Sp)

**236E. Advanced Problems in Reactor Design.** Prerequisites: at least four courses from 235A, 235B, 236A, 236B, 236C, 274, 275. Methods of attack and solution for advanced problems in reactor design, including fuel elements, power reactor cores, pulsed reactors, fuel cycle and fuel management, thermal hydraulics, shielding, and safety. Mr. Kastenber (Sp)

**M237A. Principles of Magnetic Confinement Fusion.** (Same as Electrical Engineering M286.) Prerequisites: Electrical Engineering M185, and 285A and 285B or Physics 222A-222B, or consent of instructor. Plasma requirements for controlled fusion. Structure of magnetic fields. Theory of MHD equilibrium and stability. Shear and minimum-B stabilization. Resistive and microinstabilities. Neoclassical diffusion physics of tokamak and tandem-mirror plasmas. Neutral beams and auxiliary heating. Alternate concepts. Mr. Conn (F, odd years)

**M237B. Fusion Plasma Physics and Analysis.** (Same as Electrical Engineering M287.) Prerequisite: Electrical Engineering M185. Fundamentals of plasmas at thermonuclear burning conditions. Fokker-Planck equation and applications to heating by neutral beams, RF, and fusion reaction products. Bremsstrahlung, synchrotron, and atomic radiation processes. Plasma surface interactions. Fluid description of burning plasma. Dynamics, stability, and control. Applications in tokamaks, tandem mirrors, and alternate concepts. Mr. Conn (Sp)

**237C. Fusion Reactor Technology and Design.** (Formerly numbered M237C.) Prerequisites: courses 135, 137. Magnetic fusion reactor concepts and technological components, solid and liquid breeder blankets, neutronics, fuel cycles, in-vessel components, radiation shielding, magnets, system design and optimization. Mr. Abdou (F)

**239BA-239BZ. Seminars: Current Topics in Transport Phenomena (2 to 4 units each).** Prerequisite: consent of instructor. Lectures, discussions, student presentations, and projects in areas of current interest in transport phenomena. May be repeated for credit. S/U grading.

**239DA-239DZ. Seminars: Current Topics in Nuclear Engineering (2 to 4 units each).** Prerequisite: consent of instructor. Lectures, discussions, student presentations, and projects in areas of current interest in nuclear engineering. May be repeated for credit. S/U grading.

**239FA-239FZ. Special Topics in Transport Phenomena (2 to 4 units each).** Prerequisites: consent of instructor, additional prerequisites for each offering as announced in advance by department. Advanced and current study of one or more aspects of heat and mass transfer, such as turbulence, stability and transition, buoyancy effects, variational methods, and measurement techniques. May be repeated for credit with topic change.

**239GA-239GZ. Special Topics in Nuclear Engineering (2 to 4 units each).** Prerequisites: consent of instructor, additional prerequisites for each offering as announced in advance by department. Advanced study in areas of current interest in nuclear engineering, such as reactor safety, risk-benefit trade-offs, nuclear materials, and reactor design. May be repeated for credit with topic change.

**239HA-239HZ. Special Topics in Fusion Physics, Engineering, and Technology (2 to 4 units each).** Prerequisites: consent of instructor, additional prerequisites for each offering as announced in advance by department. Advanced treatment of subjects selected from research areas in fusion science and engineering, such as instabilities in burning plasmas, alternate fusion confinement concepts, inertial confinement fusion, fission-fusion hybrid systems, and fusion reactor safety. May be repeated for credit with topic change. (W)

**250A. Foundations of Fluid Dynamics.** Lecture, four hours; outside study, eight hours. Prerequisite: course 150A or consent of instructor. Development and application of fundamental principles of fluid mechanics at graduate level, with emphasis on incompressible flow. Flow kinematics, basic equations, constitutive relations, exact solutions on the Navier/Stokes equations, vorticity dynamics, decomposition of flow fields, potential flow. Mr. Kelly (F)

**250B. Viscous and Turbulent Flows.** Prerequisite: course 150A or consent of instructor. Fundamental principles of fluid dynamics applied to study of fluid resistance. States of fluid motion discussed in order of advancing Reynolds number; wakes, boundary layers, instability, transition, and turbulent shear flows. Mr. Meecham, Mr. Monkewitz (W)

**250C. Compressible Flows.** Prerequisites: courses 150A, 150B, or equivalent. Effects of compressibility in viscous and inviscid flows. Steady and unsteady inviscid subsonic and supersonic flows; method of characteristics; small disturbance theories (linearized and hypersonic); shock dynamics. Ms. Karagozian (Sp)

**250D. Computational Aerodynamics.** Lecture, eight hours. Prerequisites: courses 150A, 150B or equivalent, 192C. Introduction to useful methods for computation of aerodynamic flow fields. Coverage of potential, Euler, and Navier/Stokes equations for subsonic to hypersonic speeds. Mr. Zhong (W)

**251A. Stratified and Rotating Fluids.** Prerequisite: course 150A or equivalent or consent of instructor. Fundamentals of fluid flows with density variations or rotation, illustrated by examples with environmental, geophysical, or technical importance. Linear and finite amplitude wave motion. Flow past bodies; blocking phenomena. Viscous effects. Instabilities. Turbulent shear flows, wakes, plumes, and gravity currents. Mr. Kelly (F, even years)

**251B. Marine Hydrodynamics.** Prerequisite: course 250A or equivalent or consent of instructor. Application of advanced aspects of potential flow theory to calculate forces and moments on bodies: added mass, force on two-dimensional hydrofoils, drag due to ship waves, response of a body to wave excitation. Mr. Kelly (Sp)

**252A. Stability of Fluid Motion.** Prerequisite: course 150A or equivalent or consent of instructor. Mechanisms by which laminar flows can become unstable and lead to turbulence of secondary motions. Linear stability theory; thermal, centrifugal, and shear instabilities; boundary layer instability. Nonlinear aspects: sufficient criteria for stability, subcritical instabilities, supercritical states, transition to turbulence. Mr. Kelly (W, odd years)

**252B. Statistical Theory of Turbulence.** Prerequisite: course 150A or consent of instructor. Development of statistical methods of wide utility in engineering applied to turbulent flows. Topics include stochastic processes, kinematics of turbulence, energy decay. Kolmogorov similarity, analytical theories, and origins of Reynolds stress. Mr. Meecham

**252C. Fluid Mechanics of Combustion Systems.** Prerequisites: courses 150A, 150B. Recommended: course 250C. Review of fluid mechanics and chemical thermodynamics applied to reactive systems, laminar diffusion flames, premixed laminar flames, stability, ignition, turbulent combustion, supersonic combustion. Ms. Karagozian (W)

**253A. Advanced Engineering Acoustics.** Advanced studies in engineering acoustics, including three-dimensional wave propagation; propagation in bounded media; Ray acoustics; attenuation mechanisms in fluids. Mr. Meecham

**253B. Fundamentals of Aeroacoustics.** Prerequisite: course 150A or consent of instructor. Detailed discussion of plane waves, point sources. Nonlinearity, layered and moving media, multiple reflections. Inhomogeneous wave equation. Monopole, dipole, quadrupole source fields from scattering inhomogeneities and turbulence; Lighthill theory; moving sources. Similarity methods. Selected detailed applications. Mr. Meecham

**254A. Special Topics in Aerodynamics.** Prerequisites: courses 150A, 150B, 192A, 192B, and 192C, or equivalent, or consent of instructor. Special topics of current interest in advanced aerodynamics. Examples include transonic flow, hypersonic flow, sonic booms, and unsteady aerodynamics. Mr. Zhong

**254B. Helicopter Engineering.** Prerequisites: course 150A, Civil Engineering 108. Recommended: courses 166A, 169A. Introduction to helicopter engineering covering basic areas of helicopter design, aerodynamics, performance, stability and control, fatigue, and elements of rotor dynamic analysis. Class problem covering preliminary design of a helicopter is central part of course. Mr. Friedmann (F or W)

**255A. Advanced Dynamics.** Prerequisites: courses 155 and 169A, or consent of instructor. Variational principles and Lagrange equations. Kinematics and dynamics of rigid bodies; procession and nutation of spinning bodies. Mr. Mingori (F)

**255B. Mathematical Methods in Dynamics.** Prerequisite: course 255A. Concepts of stability; state-space interpretation; stability determination by simulation, linearization, and Liapunov direct method; the Hamiltonian as a Liapunov function; nonautonomous systems; averaging and perturbation methods of nonlinear analysis; parametric excitation and nonlinear resonance. Application to mechanical systems. Mr. Gibson (W, odd years)

**256A. Mechanics of Deformable Solids.** Prerequisites: courses 156B and 166A, or consent of instructor. Kinematics of deformation, strain, tensors, invariance, compatibility; conservation laws; stress tensors; equations of motion; boundary conditions; constitutive equations: general theory, linearization, anisotropy; reciprocity linear isotropic elastic problems, plane and generalized plane problems; dynamic problems. Mr. Mal (F)

**M256B. Elasticity.** (Same as Civil Engineering M230.) Lecture, four hours; outside study, eight hours. Prerequisite: course 256A or consent of instructor. Equations of linear elasticity; uniqueness of solution; Betti/Rayleigh reciprocity; Saint-Venant principle; simple problems involving spheres and cylinders; special techniques for plane problems. Airy stress function, complex variable method, transform method; three-dimensional problems, torsion, entire space and half-space problems; boundary integral equations. Mr. Dong, Mr. Mal (W)

**256C. Plasticity, Creep, and Thermal Stresses.** Prerequisite: course 156A or 156B or consent of instructor. Incremental plastic stress-strain relations. Stress-strain-time relations commonly used in structural analysis. Unified treatment of plastic strain, creep strain, and thermal strain. Elastic-plastic, and creep analyses of beams, columns, shafts, frames, and plates. Mr. Mal (Sp)

**256F. Analytical Fracture Mechanics.** Prerequisites: course 156A, 156B, or 166A, and Materials Science and Engineering 243A. Review of modern fracture mechanics, elementary stress analyses; analytical and numerical methods for calculation of crack tip stress intensity factors; engineering applications in stiffened structures, pressure vessels, plates, and shells. Mr. Mal

**M257A. Elastodynamics.** (Same as Earth and Space Sciences M224A.) Lecture, four hours; outside study, eight hours. Prerequisites: courses 256A and M256B, or consent of instructor. Equations of linear elasticity, Cauchy equation of motion, constitutive relations, boundary and initial conditions, principle of energy. Sources and waves in unbounded isotropic, anisotropic, and dissipative solids. Half-space problems. Guided waves in layered media. Applications to dynamic fracture, nondestructive evaluation (NDE), and mechanics of earthquakes. Mr. Mal (W)

**M257B. Elastic Wave Propagation II.** (Same as Earth and Space Sciences M224B.) Prerequisite: course M257A. Diffraction and scattering of elastic waves by isolated cracks and inclusions; normal mode theories for vibration of finite elastic bodies; dynamic theories of fracture; representative applications in engineering and seismology. Mr. Mal

**258. Experimental Techniques in Fluid Mechanics and Thermal Science.** Prerequisite: consent of instructor. Survey of wind tunnels and other facilities for research in fluid mechanics, aerodynamics, and heat transfer; analysis of their critical design features. Modern sensors, instruments, and measurement techniques. Signal processing and storage by analog and digital methods. Mr. Monkewitz

**259A. Seminar: Advanced Topics in Fluid Mechanics.** Prerequisite: consent of instructor. Advanced study of topics in fluid mechanics, with intensive student participation involving assignments in research problems leading to term paper or oral presentation (possible help from guest lecturers). Mr. Kelly (W)

**259B. Seminar: Advanced Topics in Solid Mechanics.** Prerequisite: consent of instructor. Advanced study in various fields of solid mechanics on topics which may vary from term to term. Topics include dynamics, elasticity, plasticity, and stability of solids. Mr. Mal

**260AA-260ZZ. Seminars: Current Topics in Mechanical Engineering (2 to 4 units each).** Prerequisite: consent of instructor. Lectures, discussions, and student presentations and projects in areas of current interest in mechanical engineering. May be repeated for credit. S/U or letter grading. (Sp)

**261A. Energy and Variational Principles in Structural Mechanics.** Prerequisite: course 156A or 156B or 166A. Theory of linear elasticity. Calculus of variations. Principles of minimum potential energy and complementary energy. Stationary variational principles. Energy theorems. Matrix methods of structural analysis, with application to truss and frame problems. Variational principles as basis of finite element methods. Mr. Bendiksen (F)

**263A. Electromechanics of Computer-Controlled Machines.** Lecture, four hours; other, eight hours. Prerequisite: course 171A. Recommended: courses 163A, 163B, 163C. Mechanics and control problems of computer-controlled electromechanical systems, with special emphasis on analysis of energy flow between mechanical, electrical, and control components when applied to electromagnetic and piezoelectric actuators and control systems with mechanical flexibilities. Mr. Yang (W)

**263B. Topics in Modeling and Dynamics of Aerospace Vehicles.** Prerequisites: courses 171A, 255A. Recommended: courses 154A, 255B, M269A. Modeling, dynamics, and stability of aerospace vehicles; improvement of performance using active control; applications to spinning and dual-spin spacecraft, space structures, rotordynamics and coupled rotor/fuselage dynamics of helicopters, active control of aircraft modes. Mr. Friedmann, Mr. Mingori (Sp, even years)

**263C. Mechanics and Trajectory Planning of Industrial Robots.** Lecture, four hours; other, eight hours. Prerequisite: course 163A or consent of instructor. Theory and implementation of industrial robots. Design considerations. Kinematic structure modeling, trajectory planning, and system dynamics. Differential motion and static forces. Individual student study projects. Mr. Yang (W)

**263D. Advanced Robotics.** Lecture, four hours; outside study, eight hours. Recommended (but not prerequisite): courses 155, 163C, 171A, 263C. Motion planning and control of articulated dynamic systems: nonlinear joint control, experiments in joint control and multi-axes coordination, multibody dynamics, trajectory planning, motion optimization, dynamic performance and manipulator design, kinematic redundancies, motion planning of manipulators in space, obstacle avoidance. Mr. Shiller (Sp)

**M267A. Optimum Structural Design.** (Same as Civil Engineering M240.) Prerequisite: course 261A or Civil Engineering 235A or consent of instructor. Synthesis of structural systems; analysis and design as optimization problems; techniques for synthesis and optimization; application to aerospace and civil structures. Mr. Felton, Mr. Friedmann (W)

**268B. Failure of Structural Systems.** Lecture, four hours; other, eight hours. Prerequisite: Civil Engineering 135B. Exploration of a current area of research in depth. Mr. Friedmann (F)

**M269A. Dynamics of Structures.** (Same as Civil Engineering M237A.) Prerequisite: course 169A. Principles of dynamics. Determination of normal modes and frequencies by differential and integral equation solutions. Transient and steady state response. Emphasis on derivation and solution of governing equations using matrix formulation. Mr. Bendiksen, Mr. Friedmann (F)

**269B. Advanced Dynamics of Structures.** Prerequisite: course M269A. Analysis of linear and nonlinear response of structures to dynamic loadings. Stresses and deflections in structures. Structural damping and self-induced vibrations. Mr. Friedmann (W)

**M269C. Introduction to Probabilistic Dynamics.** (Same as Civil Engineering M237C.) Prerequisite: course 169A. Response of structural and mechanical systems to random vibrations. Stationary and non-stationary excitations. Response of systems with random parameters. Discrete and continuous linear systems. Applications to earthquakes, wind sway of buildings, gust response, vibrations due to gearing inaccuracies, train vibrations. Mr. Friedmann (Sp, even years)

**269D. Aeroelastic Effects in Structures.** Prerequisite: course M269A. Presentation of field of aeroelasticity from unified viewpoint applicable to flight structures, suspension bridges, buildings, and other structures. Derivation of aeroelastic operators and unsteady airloads from governing variational principles. Flow induced instability and response of structural systems. Mr. Bendiksen, Mr. Friedmann (Sp, odd years)

**271A. Dynamic Systems Optimal Control.** Prerequisite: course 171C or consent of instructor. Optimal control problem formulation. Performance criteria for deterministic dynamic systems. Variational methods and Pontryagin maximum principle for continuous and discrete-time models. Inequality constraints. Sensitivity analysis. Numerical computation methods for solving boundary value problems of optimal control. Applications in various fields. Mr. Gibson, Mr. Mingori (F)

**271B. Dynamic Systems Stochastic Estimation and Control.** Prerequisites: courses 171C, 192D, and 271A, or consent of instructor. Applied treatment of optimal state estimation and stochastic control problems for continuous and discrete-time dynamic models with state-space descriptions. Kalman filtering, smoothing, and prediction algorithms. Stochastic optimal controllers; separation principle. Emphasis on efficient numerical computations. Applications in various fields. Mr. Speyer (W)

**271C. Dynamic Systems Identification, Stability, and Adaptive Control.** Prerequisite: course 271A or consent of instructor. Recommended: course 271B. Nonlinear system stability. Dynamic systems modeling, identification, and parameter estimation techniques. Combined identification and control and self-adaptive control. Mr. Speyer (Sp)

**271D. Seminar: Special Topics in Dynamic Systems Control.** Prerequisite: consent of instructor. Seminar on current research topics in dynamic systems modeling, control, and applications. Topics selected from process control, differential games, nonlinear estimation, adaptive filtering, industrial and aerospace applications, etc. Mr. Speyer (F)

**274. Methods of Probabilistic Safety Assessment.** (Formerly numbered 236D.) Lecture, four hours; outside study, eight hours. Prerequisite: course 174 or consent of instructor. Methods for evaluation of risk from large technological systems; advanced statistical methods for data analysis; models of dependent failures; elicitation and use of expert opinions; human reliability models; propagation of uncertainties in physical models; applications to nuclear power plants, waste repositories, and space systems. Mr. Apostolakis (W, odd years)

**275. Principles and Methods of Risk Management.** Lecture, four hours; outside study, eight hours. Prerequisites: courses 174 and 274, or consent of instructor. Considerations regarding balancing of society's resources: risk/benefit, value/impact, and risk management. Methodological problems and approaches. Risk-based decision theory, aspects of risk management: criteria and standards, uncertainty, perception, value of life, and judicial review. Case studies. Mr. Kastenber (Sp, odd years)

**M291A. Analytical Methods of Engineering I.** (Same as Electrical Engineering M208A.) Prerequisites: Mathematics 131A, 132. Application of abstract mathematical methods to engineering problems. Review of elements of measure and integration,  $L^2$  theory — linear spaces and operators. Eigenvalue problems. Introduction to spectral theory — elementary distribution theory. Applications to problems in engineering. Mr. Gibson (F,W)

**M291B. Analytical Methods of Engineering II.** (Same as Electrical Engineering M208B.) Prerequisite: course M291A or Electrical Engineering M208A or consent of instructor. Application of modern mathematical methods to engineering problems. Review of spectral theory. Green's functions and eigenvalue problems for second-order ordinary differential equations and their adjoints. Discrete and continuous spectra for ordinary and partial differential equations. Initial and boundary value problems. Mr. Gibson (W,Sp)

**291C. Integral Equations in Engineering.** Prerequisite: Mathematics 250B. Introduction to generalized function theory and Green's functions. Conversion of partial equations to integral equations and classification of integral equations. Solution to integral equations with degenerate kernels; discussions of successive approximations and Fredholm and Hilbert/Schmidt theory. Mr. Mal (Sp)

**294. Advanced CAD/CAM Systems.** Lecture, four hours; outside study, eight hours. Prerequisite: course 194 or consent of instructor. CAD/CAM systems design, with special emphasis on computational geometry, path to trajectory conversion, command generation, controller and interpolator design, and current research topics in CAD/CAM systems. Mr. Yang (W)

**295A. Computer-Aided Manufacturing.** Prerequisites: courses 94, 163A, 163C. Analysis of usage of computer in manufacturing. Manufacturing information systems; group technology; computer-aided manufacturing process planning; flexible manufacturing systems. Mr. Yang (F)

**295B. Computer-Integrated Manufacturing.** Prerequisite: course 295A. Systems analysis and design of computer-integrated manufacturing, including automated factories and flexible manufacturing systems. Mr. Yang (W)

**297. Composites Manufacturing.** Lecture, four hours; outside study, eight hours. Prerequisites: course 166C and Materials Science and Engineering 151, or consent of instructor. Matrix materials, fibers, fiber preforms, elements of processing, autoclave/compression molding, filament winding, pultrusion, resin transfer molding, automation, material removal and assembly, metal and ceramic matrix composites, quality assurance. Mr. Hahn (Sp)

**298. Seminar: Engineering (2 to 4 units).** Prerequisites: graduate standing in mechanical, aerospace, and nuclear engineering, consent of instructor. Seminars may be organized in advanced technical fields. If appropriate, field trips may be arranged. May be repeated with topic change.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading. Mr. Speyer (F,W,Sp)

**497A-497B. Field Project in Manufacturing Engineering.** Lecture, two hours. Prerequisite: consent of instructor. Teams of students perform detailed system analysis and plan design of manufacturing engineering systems at various manufacturing plants. In Progress grading. Mr. Yang (W, 497A; Sp, 497B)

**596. Directed Individual or Tutorial Studies (2 to 8 units).** Prerequisites: graduate standing in mechanical, aerospace, and nuclear engineering, consent of instructor. Petition forms to request enrollment may be obtained from assistant dean, Graduate Studies. Supervised investigation of advanced technical problems. S/U grading.

**597A. Preparation for M.S. Comprehensive Examination (2 to 12 units).** Prerequisites: graduate standing in mechanical, aerospace, and nuclear engineering, consent of instructor. Reading and preparation for M.S. comprehensive examination. S/U grading.

**597B. Preparation for Ph.D. Preliminary Examinations (2 to 16 units).** Prerequisites: graduate standing in mechanical, aerospace, and nuclear engineering, consent of instructor. S/U grading.

**597C. Preparation for Ph.D. Oral Qualifying Examination (2 to 16 units).** Prerequisites: graduate standing in mechanical, aerospace, and nuclear engineering, consent of instructor. Preparation for oral qualifying examination, including preliminary research on dissertation. S/U grading.

**598. Research for and Preparation of M.S. Thesis (2 to 12 units).** Prerequisites: graduate standing in mechanical, aerospace, and nuclear engineering, consent of instructor. Supervised independent research for M.S. candidates, including thesis prospectus. S/U grading.

**599. Research for and Preparation of Ph.D. Dissertation (2 to 16 units).** Prerequisites: graduate standing in mechanical, aerospace, and nuclear engineering, consent of instructor. Usually taken after student has been advanced to candidacy. S/U grading.

## Schoolwide Fields, Programs, Courses, and Faculty

6426 Boelter Hall, (310) 825-2826

### Bachelor of Science in Engineering

#### Bioengineering Major Field

The bioengineering major field is an interdepartmental program leading to a Bachelor of Science degree in Engineering that may soon be replaced by several new programs in this area. Therefore, applicants may not be admitted to this major but may have an opportunity to pursue one of the new alternatives. For further information, contact the Associate Dean, Student Affairs, 6426 Boelter Hall.

### Graduate Study

For information on graduate admission to the schoolwide engineering programs and requirements for the M.S., Engineer, and Ph.D. degrees and certificate of specialization, see "Graduate Study" at the beginning of this chapter.

### M.S. and Ph.D. in Engineering

Schoolwide programs, which may admit a limited number of applicants, are available in biocybernetics and man/machine/environment systems.

### M.A.-Latin American Studies/ M.S.-Engineering

The school and the Latin American Studies Program have established an articulated degree program through which students may complete requirements for the M.S. in Engineering and the interdepartmental M.A. in Latin American Studies. After successful completion of the program, students are awarded both degrees simultaneously. Articulated programs do not allow course credit to be applied toward more than one degree.

### Lower Division Course

**97. Introduction to Engineering Disciplines.** (Formerly numbered 98.) Lecture, four hours; discussion, four hours; outside study, four hours. Introduction to engineering as a professional opportunity for freshman students by exploring difference between engineering disciplines and functions engineers perform. Development skills and techniques for academic excellence through the team process. Investigation of national need underlying current effort to increase participation of historically underrepresented groups in the U.S. technological work force. P/NP grading.

Mr. Jacobsen (F)

## Graduate Courses

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading. (F,W,Sp)

**470A-470D. The Engineer in the Technical Environment (3 units each).** Limited to students in Engineering Executive Program. Theory and application of quantitative methods in analysis and synthesis of engineering systems for purpose of making management decisions. Optimization of outputs with respect to dollar costs, time, material, energy, information, and manpower. Case studies and individual projects.

**471A-471B-471C. The Engineer in the General Environment (3 units, 3 units, 1½ units).** Limited to students in Engineering Executive Program. Influences of human relations, laws, social sciences, humanities, and fine arts on development and utilization of natural and human resources. Interaction of technology and society past, present, and future. Change agents and resistance to change. In Progress grading for courses 471B-471C only.

**472A-472D. The Engineer in the Business Environment (3 units, 3 units, 3 units, 1½ units).** Limited to students in Engineering Executive Program. Language of business for the engineering executive. Accounting, finance, business economics, business law, and marketing. Laboratory in organization and management problem solving. Analysis of actual business problems of firm, community, and nation, provided through cooperation and participation with California business corporations and government agencies. In Progress grading (credit to be given on completion of courses 472B and 472D).

**473A-473B. Analysis and Synthesis of a Large-Scale System (3 units each).** Recitation, two and one-half hours. Limited to students in Engineering Executive Program. Problem area of modern industry or government is selected as class project, and its solution is synthesized using quantitative tools and methods. Project also serves as laboratory in organization for a goal-oriented technical group. In Progress and S/U grading.

**495. Teaching Assistant Training Seminar.** Prerequisites: graduate standing in engineering, appointment as a teaching assistant. Seminar on communication of engineering principles, concepts, and methods, preparation, organization of material, presentation, use of visual aids, grading, advising, and rapport with students. S/U grading. (F)

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

## Schoolwide Engineering Faculty

### Professors Emeriti

Edward P. Coleman, Ph.D.  
J. Morley English, Ph.D.  
Alfred C. Ingersoll, Ph.D.  
Herbert B. Nottage, Ph.D.  
Allen B. Rosenstein, Ph.D.  
Bonham Spence-Campbell, E.E.



# Graduate School of Architecture and Urban Planning

Richard S. Weinstein, Dean



# 9

In recent years Los Angeles has emerged as a dominant and growing center of finance and trade, reflecting the continued shift of the national agenda west to the Pacific Rim and south toward Mexico and Latin America. This growth of intense commercial activity has been linked to important developments in the arts, sciences, and communications, producing a regional culture of great ethnic diversity, energy, and momentum. The UCLA Graduate School of Architecture and Urban Planning (GSAUP) has recently established a Center for Regional Policy Studies to address environmental, transportation, social policy, and urban design issues, while a flourishing local architectural culture is receiving increasing international attention.

Professional education and research are the central concerns of GSAUP within a context of rapid professional change and experimentation. Our belief is that a curriculum in architecture and urban planning responsive to the emerging needs of this important region can make a significant contribution to professional development. The school has created the Urban Innovations Group (UIG) as an independent, nonprofit, professionally managed practice arm where faculty and students undertake architectural, urban design, and planning projects on a contract basis. To supplement the classroom experience and to help bring the public and the professional community into active relationship with the school, a series of public lectures, conferences, and various exhibits are scheduled throughout the academic year.

A noted regular faculty is supplemented by distinguished visitors, while the student body is international in character. Developed as a small school with an enrollment of about 350, GSAUP encourages close interaction between faculty and students to maximize the educational experience.

# Graduate School of Architecture and Urban Planning

1317 Perloff Hall, (310) 825-3791

The Graduate School of Architecture and Urban Planning (GSAUP) at UCLA offers programs of study leading to the degrees of Master of Architecture (M.Arch.), M.A. in Architecture, M.A. in Urban Planning, Ph.D. in Architecture, and Ph.D. in Urban Planning. Currently, the school offers educational opportunities for a broad spectrum of careers, including a number that are not yet common in practice, but which reflect emerging social needs. It offers a choice of two major programs: Architecture/Urban Design and Urban Planning.

## Architecture/Urban Design

B315 Perloff Hall, (310) 825-0525,  
825-7857

### Professors

Marvin Adelson, Ph.D., *Recalled*  
Samuel Aroni, Ph.D., *Recalled*  
Charles M. Eastman, M.Arch.  
Baruch Givoni, Ph.D., *Recalled*  
Thomas S. Hines, Ph.D.  
Robin Liggett, Ph.D. (*Distinguished Teaching Award*)  
Lionel March, Sc.D.  
Murray A. Milne, M.Arch.  
Barton Myers, M.Arch.  
Richard Schoen, M.Arch.  
George Stiny, Ph.D.  
Thomas R. Vreeland, Jr., M.Arch., *Recalled*  
Richard S. Weinstein, M.A., *Dean*

### Associate Professors

Diane Favro, Ph.D.  
Franklin Israel, M.Arch.  
F. Eugene Kupper, M.Arch.  
Jurg Lang, Dipl.Arch., *Program Head*  
George Rand, Ph.D.  
Ben Refuerzo, M.Arch.

### Assistant Professors

Terry Knight, Ph.D.  
Sylvia Lavin, Ph.D.  
Dagmar Richter, M.A. (Diplom.)

### Lecturer

Berge Aran, Ph.D.

### Adjunct Professors

Charles Jencks, Ph.D.  
Barton Phelps, M.Arch.  
Robert J. Yudell, M.Arch.

## Degrees Offered

Architecture .....	M.Arch. I, M.Arch. II, M.A., Ph.D.
Urban Planning .....	M.A., Ph.D.

### Adjunct Associate Professor

Kuppaswamy Iyengar, M.Arch.

## Scope and Objectives

Architecture/Urban Design at UCLA offers four degree programs tailored to the needs of different groups of students: M.Arch. I, M.Arch. II, M.A., and Ph.D.

M.Arch. I is a three-year first professional degree program which is accredited by the National Architectural Accrediting Board (NAAB). It does not assume any prior background in architecture. Students who do have some prior architecture background (e.g., a four-year undergraduate degree) may also enter the program and may petition to waive certain required courses and substitute more advanced electives in their place. M.Arch. I graduates normally pursue professional careers in architectural practice.

M.Arch. II is an advanced professional degree program for students who already hold a first professional degree in architecture. It provides opportunities for intensive concentration in a variety of areas of professional specialization.

The M.A. and Ph.D. degree programs provide opportunities to pursue research and scholarship in the field of architecture. Graduates typically pursue academic or applied research and consulting careers.

## Master of Architecture I

### Admission

The M.Arch. I program is open to students holding a bachelor's degree (or its equivalent) comparable in standards and content to a bachelor's degree from the University of California. Applications are accepted from students with a variety of backgrounds. No academic or experiential training in architecture is required, although some students have had experience in the field prior to admission.

Applicants are required to submit three letters of recommendation, academic transcripts, a statement of purpose, and a "creative" portfolio. No admission tests are required. In addition to the application for graduate admission, applicants should submit the "Departmental

Supplement," available from the Admissions Office, Graduate School of Architecture and Urban Planning, B102 Perloff Hall, UCLA, Los Angeles, CA 90024-1467.

For information on the proficiency in English requirements for international graduate students, refer to "Graduate Admission" in Chapter 3.

### Major Fields or Subdisciplines

No in-depth specialization is required within the context of the M.Arch. I program. However, you are required to concentrate several elective courses within a single curricular area. A minimum of three elective courses must be taken within this curricular area, including two courses in theory and one studio application, during the second year of study.

Specializations are currently available in the following areas: (1) urban policy and design, (2) architectural technology, (3) design and computation, (4) history and theories of architecture, and (5) policy, programming, and evaluation.

### Course Requirements

You must complete a minimum of 29 courses, at least 26 of which must be four-unit courses at the graduate level (200 and 400 series). The total number of units required is 116. The required courses, listed below, must be taken in the sequence indicated. Some of the studios are taken in conjunction with associated two-unit support courses.

#### First Year

Fall: Courses 411, 421, 200, 201A, 201B  
Winter: Courses 412, 422, 431, 436  
Spring: Courses 413, 423, 432, 442

#### Second Year

Fall: Courses 414, 424, 433, elective (in sequence)  
Winter: Courses 415 or 401 or 402, 425, 441, elective (in sequence)  
Spring: Courses 401 or 402 or 403 or 404, professional practice, elective

#### Third Year

Fall: Courses 416, 426, 291, elective  
Winter: Courses 415 or 401 or 402, elective, 498  
Spring: Elective, course 597A or 598A

You are required to take at least 20 units of elective coursework, including the history and theory courses in the elective sequence. In some areas of concentration an additional eight units of elective coursework may be necessary to fulfill the total unit requirement of 116. At least 16 units must be taken within the Graduate School of Architecture and Urban Planning.

You are encouraged to complete an elective sequence consisting of at least three related courses, terminating in a 402 or 403 advanced studio (normally in Spring Quarter of your second year). The elective sequence is intended to allow you to gain in-depth knowledge of a chosen area of specialization and to apply that knowledge in a design studio. Elective sequences are offered in the following areas: (1) urban policy and design, (2) architectural technology, (3) design and computation, (4) history and theories of architecture, (5) policy, programming, and evaluation. Details of currently available and approved elective sequences may be obtained from the graduate adviser.

In addition to completing an elective sequence, you are expected to explore a variety of topics by taking additional elective courses in the five areas listed above, in the Urban Planning Program, or outside GSAUP.

You must enroll in eight units of Architecture and Urban Planning 597A, which may not be taken until all other required courses have been successfully completed. Students who opt to take the comprehensive examination in architectural design must enroll in four units of course 498, in addition to the eight units of course 597A.

You may also apply eight units of course 596A toward the elective course requirements for graduation. Eight of the 16 units may be applied toward the graduate course requirement. All independent 500-series work must be undertaken with the guidance and approval of an Architecture/Urban Design Program faculty member.

If you can demonstrate that you already have adequate background in topics covered by specific required courses, you may petition to waive those courses and replace them with electives. This enables you to enroll in a larger number of electives and take part in the courses in the Advanced Graduate Studies Program. However, permission to waive required courses does not reduce the minimum number of 116 units required for the M.Arch. I degree nor does it reduce the nine-term residence requirement. The petition should be addressed to the faculty member responsible for that course and may be granted at the faculty member's discretion, possibly by means of a special examination. The petition should present evidence of adequate background in the specific topic of the course, preferably with a transcript and syllabus of the course taken.

### Comprehensive Examination Plan

You are required to successfully complete a comprehensive examination in any one of the following areas: (1) architectural design, (2) urban policy and design, (3) architectural technology, (4) design and computation, (5) history and theories of architecture, (6) policy, programming, and evaluation. The examinations are administered by the appropriate curriculum area committees. Details of the comprehensive examination policies, established by each curriculum area committee, are available from the graduate adviser.

### Master of Architecture II

#### Admission

The M.Arch. II program emphasizes advanced studies in architecture and requires that applicants hold a five-year B.Arch. degree or equivalent.

You must state your major area of specialization on the departmental application, as you are admitted to a specific concentration area and may change only by petition to the advanced graduate studies curriculum committee. A minimum of four academic terms in residence is required. This is a full-time program, and you are expected to remain continuously in residence until all academic work is completed, unless a leave of absence is granted.

If your native language is not English, you are required to score at least 580 on the Test of English as a Foreign Language (TOEFL). In addition, you must take the English as a Second Language Placement Examination (ESLPE) on arrival at UCLA and, beginning in your first term in residence, take any required English as a Second Language courses. Because such courses may not be applied toward the minimum course requirement, you should expect to spend additional time in residence. Refer to "Proficiency in English" under "Graduate Admission" in Chapter 3 for further information.

#### Major Fields

You are required to select your major area at the time of application to the program and must take a minimum of 24 units of coursework in that area. The six major areas are (1) architectural design, (2) urban policy and design, (3) architectural technology, (4) design and computation, (5) history and theories of architecture, and (6) policy, programming, and evaluation.

#### Course Requirements

A minimum of 44 units of coursework (normally 11 four-unit courses) is required. At least 32 units must be at the graduate level; eight units of Architecture and Urban Planning 597A or eight units of course 598A are to be included in the 32 units. The remaining 12 units may be either upper division or graduate courses. No more than eight units of 596 courses may be applied toward the requirements for graduation.

Students in architectural design are required to complete at least 12 units of advanced design studio work plus 12 units of approved seminar courses.

Students in urban policy and design must complete at least 12 units of advanced design studio work plus 12 units of approved seminar courses.

Students in the other four major areas (architectural technology; design and computation; history and theories of architecture; and policy, programming, and evaluation) are required to complete an approved sequence of three core courses consisting of two lecture/seminar courses which establish substantive foundations and a project course (Architecture and Urban Planning 403) which explores applications, plus 12 units of elective courses in the major area.

There may be more than one approved core sequence in each of the areas. The curriculum committee establishes and publishes a list of approved core sequences, which is reviewed and revised as necessary on a yearly basis. In special cases you may propose core sequences not on the list for approval by the committee.

#### Thesis Plan

Under this plan you may submit either a research project or a design project. A thesis committee must be established at least one term before presentation of the thesis, and you must take at least eight units of Architecture and Urban Planning 598A. The thesis must be submitted within two years after entry into the program.

### Comprehensive Examination Plan

Under this plan you are required to establish a comprehensive examination committee at least one term before taking the examination and to receive approval of an examination topic from that committee. You are then required to take at least eight units of Architecture and Urban Planning 597A. The examination consists of a research project or design project on the approved topic. The examination must be submitted within two years after entry into the program.

### Master of Arts in Architecture

#### Admission

This program offers an academic degree and prepares students to do specialized research or teaching in fields related to the architecture and urban design professions. Applicants are required to hold a bachelor's degree (or its equivalent) comparable in standards and content to a bachelor's degree from the University of California. They should possess the experience and knowledge that would allow them to do advanced research in whatever aspect of architecture they plan to explore within the context of the master's program.

Applicants are required to submit three letters of recommendation, academic transcripts, a statement of purpose, and a "creative" portfolio. No admission tests are required. In addition to the application for graduate admission, applicants should submit the "Departmental Supplement," available from the Admissions Office, Graduate School of Architecture and Urban Planning.

For information on the proficiency in English requirements for international graduate students, refer to "Graduate Admission" in Chapter 3.

### Major Fields or Subdisciplines

There are four major areas of concentration: architectural technology; design and computation; history and theories of architecture; and policy, programming, and evaluation. In addition, you have the option of the open M.A. wherein you structure your own area of interest from the courses offered by the school.

### Degree Requirements

- (1) Candidates for the M.A. are expected to be in residence at UCLA for at least two years and undertake six terms of study.
- (2) You must select and pursue one area of specialization.
- (3) A thesis or a comprehensive project is required. When the committee members have signed the thesis proposal, you may take at least four and no more than eight units of Architecture and Urban Planning 598A and begin work on the thesis itself. The course should be taken at some point during your last year of study.
- (4) You are required to complete a minimum of 16 courses (64 units) of graduate or upper division work, at least five (20 units) of which must be 200-series courses and at least two (eight units) of which must be 500-series courses. No more than 20 units of 500-series courses may be applied toward the total unit requirement for the degree.
- (5) Up to seven courses may be taken from upper division or graduate courses offered campuswide.
- (6) The University of California minimum requirements for the Master of Arts degree must be completed.
- (7) You must enroll in at least four and no more than eight units of course 598A. You may also apply 12 units of course 596A toward the unit requirements for graduation.
- (8) Courses in the 400 series may not be applied toward the graduate course requirement for the M.A. degree, but a limited number may be applied toward the elective course requirements.

### Thesis or Comprehensive Examination Plan

M.A. students can choose to present a design project as a comprehensive examination (see

M.Arch. I) or to do a research thesis. They should make this determination at least three months prior to the anticipated date of graduation.

## Ph.D. in Architecture

### Admission

Applicants must hold a bachelor's degree from an accredited college or university. It is anticipated that most applicants will have completed a first professional degree in architecture (a five-year B.Arch. or a professional M.Arch. degree). Students with degrees in other fields are also encouraged to apply but may, at the discretion of the Ph.D. program committee, be required to complete specific coursework as a condition of admission.

Applicants are required to submit three letters of recommendation, academic transcripts, a statement of purpose, a proposed program of studies, a short biographical résumé, and examples of research and/or creative work. An interview may also be required.

Applicants whose native language is other than English are required to pass the Test of English as a Foreign Language (TOEFL) before entering. Refer to "Proficiency in English" under "Graduate Admission" in Chapter 3 for further information.

Criteria considered for admission include (1) evidence of capacity for original scholarship and research in architecture, and ability to achieve eminence in the field, (2) an outstanding academic record, including grades (3.5 minimum GPA), Graduate Record Examination (GRE) scores, and references, (3) demonstration in the work submitted of adequate communication skills, particularly writing skills, and (4) presentation of a clear and realistic statement of purpose.

### Preliminary Evaluation of Research Skills

— Students who have any background deficiencies in research skills essential for work in their chosen areas of Ph.D. specialization (e.g., mathematics, statistics, or computing) are required to round out their knowledge early in their residence. The Ph.D. program committee conducts a formal evaluation of each student before the end of the first year in residence to assure adequacy of research skills. In order to undergo the evaluation you must have made up any background deficiencies and present a research paper or other evidence of capacity for original work.

If you are unable to satisfy the committee of the adequacy of your research skills, you will either be given specific advice on how to make up remaining deficiencies and be reevaluated at a later date, or else be advised to leave the program. If you do not satisfy the committee by the end of the sixth term, you are subject to termination from the program.

## Major Fields

Students are required to undertake programs of study that include one major area selected from the following: architectural technology; design and computation; history and theories of architecture; and policy, programming, and evaluation.

Majors outside these areas, or combinations of some of them, may be undertaken, subject to the approval of the Ph.D. program committee if supported by qualified faculty members willing to provide the necessary instruction and guidance.

## Minor Field Requirement

You are required to include in your program of study at least one minor field, which must be from outside the Architecture/Urban Design Program (i.e., outside the school or within the Urban Planning Program). The objectives of the minor field requirement are to assure adequate academic breadth in your preparation and to encourage participation in the general intellectual life of the University. Students planning their minor field courses are advised accordingly.

The normal method of demonstrating competence in the minor field is to complete at least 16 units of coursework, which represents a unified course of study in that field, with grades of B or better. If a qualified Architecture/Urban Design Program faculty member is willing to provide the necessary supervision, the Ph.D. program committee may accept an alternative method of completing this requirement (e.g., a substantial research project).

## Mathematics, Computing, or Foreign Language Requirement

You are expected to develop adequate skills in mathematics, computing, or foreign languages, as appropriate to your field of specialization, and are strongly advised to complete this requirement as early as possible. One of the following is required.

**Foreign Language Requirement** — You must fulfill one of the following, as approved by your adviser or advisory committee:

- (1) Satisfactory reading knowledge of two foreign languages relevant to your field of specialization as demonstrated by one of the following methods: (a) a Graduate School Foreign Language Test (GSFLT) score of 500 or better, (b) a passing grade on the examination given by the departmental language examination committee, or (c) taking and completing with grades of B or better two courses from French 3, German 3, Italian 3, Spanish 5.
- (2) Superior knowledge of one foreign language relevant to your field of specialization as demonstrated by one of the following methods: (a) a GSFLT score of 600 or better, (b) distinction on the examination given by the departmental language examination committee, or (c) taking and completing with a grade of B or

better one course from French 5, German 6, Italian 5, Spanish 25.

**Mathematics or Computing Requirement**—Proficiency in mathematics and computing as demonstrated by passing an approved group of four graduate or upper division courses in mathematics, statistics, and/or computing with grades of B or better. The courses must not overlap in content and normally require prerequisites which may not be applied toward the four-course requirement.

Courses applied toward this requirement may not also be applied toward a major or minor field requirement.

### Course Requirements

Generally you are required to take sufficient coursework to provide adequate preparation for the qualifying examination and the dissertation.

Each student is required to take a proseminar in architectural theory, normally in Fall Quarter of the first year. The proseminar is intended to establish a general orientation to the field of architecture that will ensure that you have an appropriate foundation for the acquisition of competence in the theory, methods, and history of architecture. In consultation with your adviser, you are expected to take whatever additional coursework is necessary to reach the required level.

Holders of a professional degree in architecture before admission to the program must complete four terms in residence and 48 units of coursework in order to become eligible to take the qualifying examination. If you have an M.Arch. I, M.Arch. II, or M.A. degree in Architecture from UCLA, the Ph.D. program committee may, at its discretion, reduce these requirements to three terms in residence and 36 units of coursework. All other candidates are required to complete six terms in residence and 72 units of coursework.

Half of the units must be graduate courses in architecture/urban design, and an overall GPA of 3.0 or better must be maintained. In exceptional cases, and with prior approval of the Ph.D. program committee, upper division courses may be applied toward these requirements. At least 32 units must be in 200-series courses.

Each of the major field core sequences of three to five courses includes one project course (Architecture and Urban Planning 403), which focuses on the practical application of research results to architectural problems and provides opportunity to explore interrelations between the research and professional concerns of the field.

Students who are admitted to the Ph.D. program without having the background of a professional degree in architecture are required to take, in addition to the other course requirements, at least 24 units of graduate-level courses in architecture as recommended by their adviser and approved by the Ph.D. program committee.

No more than eight units of course 596A may be applied toward degree requirements, but eight units of course 597A and as many units of course 599A as necessary may be applied.

### Qualifying Examinations

After successful completion of (1) the preliminary evaluation of research skills, (2) the mathematics, computing, or foreign language requirements, and (3) the coursework requirements, you may apply to take the qualifying examinations. They consist of a comprehensive written examination in the major field, a written examination in the minor field (this may be waived under certain circumstances), and an oral examination focusing primarily on your proposed dissertation. The qualifying examinations should be completed in one term and must not extend over more than two terms.

The major and minor field examinations are conducted by a four-member examination committee. The written examination in the major field is a substantial exercise followed by an oral presentation to the committee. The work must demonstrate your ability to teach an introductory course in the field and contribute to the progress of the field through scholarship and research. The written examination in the minor field is a short exercise and may be waived for candidates who hold a recognized master's degree in the field in which the minor is located, or at the discretion of the examination committee on the basis of outstanding grades (at least two A grades out of the four minor field courses).

The University Oral Qualifying Examination, conducted by the doctoral committee, takes place after successful completion of the two written qualifying examinations. It explores your proposed dissertation topic and your ability to undertake the proposed work successfully. After passing the oral examination, you are advanced to candidacy (the C.Phil. degree is not awarded) and may begin work on your dissertation.

### Final Oral Examination

The examination involves a verbal defense of the completed dissertation before the doctoral committee.

### Upper Division Courses

**187. Planning and Designing Our Cities.** Introduction to urban planning and urban design, with emphasis on methods and tools used in practice. Overview of planning field; physical planning for redevelopment, for projects in expanding areas, and for new towns. Lectures (with illustrated examples), field visits, and presentation of students' own projects create framework for expanding understanding of urban planning and design process. Mr. Kamnitzer

**190. Human Environment: Introduction to Architecture and Urban Planning.** Kinds of problems that arise in creating and maintaining an environment for urban activities, and approaches and methods of architecture and urban planning in helping to cope with such problems. Complexities involved in giving expression to human needs and desires in provision of shelters and movement systems, to possibilities and limitations of technology and building forms, and to issues involved in relating the human-made to the natural environment. Students encouraged to comprehend major urban issues both as citizens and as potential technical experts. Mr. Rand (F)

**C191. Introduction to Sustainable Architecture and Community Planning.** Lecture, three hours. Energy and alternative resource-conscious design integration into architectural and urban design: passive, active, and photovoltaic solar systems and recycling of water, waste, and building materials at scale of buildings and communities. Concurrently scheduled with course C247A. Mr. Schoen

**C192. Modern and Postmodern Architecture.** Lecture, three hours. Examination of 20th-century architecture from revolutionary concepts of modern movement, including manifestations in international style, to current transcendence of that movement with postmodernism and a resurgent new modernism. Concurrently scheduled with course C282B. Mr. Jencks

**C193. City Studies.** Lecture, three hours. Design of cities from early times to the present, with special emphasis on great 19th- and 20th-century cities of Europe and America. Establishment of basic principles of good city design. Discussion of current theories of city design. Concurrently scheduled with course C280. Mr. Vreeland

**199. Special Studies (2 to 8 units).** Prerequisite: consent of instructor. Independent research or investigation on a selected topic to be arranged with a faculty member. May be repeated for credit.

### Graduate Courses

**200. History of Architecture.** (Formerly numbered 200A-200B-200C.) Lecture, three hours. Introduction to history of Western architecture and the urban environment from antiquity to the modern era. Lectures and readings on major architectural monuments and urban issues in relation to their theoretical, philosophical, and sociopolitical contexts. Ms. Favro, Ms. Lavin

**201A. Theory of Architecture (2 units).** (Formerly numbered 201.) Lecture, 90 minutes. Exploration of conceptual and historical structures that shape current issues in architectural theory. Readings in primary texts serve as framework for understanding the nature of speculative inquiry in an architectural context. Ms. Lavin (F)

**201B. Theory of Form (2 units).** (Formerly numbered 201.) Lecture/studio, 90 minutes. Exploration of theories of form and composition through lectures and exercises.

**203. Decision Making in Planning and Design.** Lecture, three hours. Exploration of challenges of decision making in general and in the design professions, which have far-reaching effects not only on clients but also on professionals' own prospects. Psychological and mathematical approaches for improving decision quality. Mr. Adelson

**204. Imaging the Future.** Seminar, three hours. Introduction to social and technological forecasting, including nature and limitations of forecasting, ideology and values in forecasting, review of integrative forecasting techniques, and role of forecasting in environmental planning, design, and management processes. Mr. Adelson

**219. Special Topics in the Built Environment (2 to 8 units).** Lecture, three hours. Seminar on topics in the built environment selected by the faculty. May be repeated for credit.

**224A-224B. Formal Theory of Composition.** Lecture, three hours. Examination of design as a formal enterprise in which rules are adopted and then followed to compose, describe, and evaluate designs. Development in detail of historical, contemporary, and new examples in architecture, painting, sculpture, and other fine and applied arts.

Ms. Knight (F,W)

**225A-225B-225C. Fundamentals of Architectonics.** (Formerly numbered 225A-225F.) Lecture, three hours. Prerequisite: consent of instructor. Inquiry concerning architecture of spatial configurations from both a historical position and a mathematical viewpoint. **225A.** Principles of Proportion; **225B.** Symmetry; **225C.** Comparison.

Mr. March

**226A. Introduction to Computer-Aided Design.** Lecture, three hours; laboratory, one hour. Introduction to various electronic graphic representations used in design; functionality and structure of modern CAD systems.

**226B. Computer-Aided Design and Visualization.** Lecture, three hours; laboratory, one hour. Prerequisite: course 226A or equivalent. Intermediate course on use of CAD tools in design, concepts of project organization, design development, with emphasis on three-dimensional representations; introduction to computer-based visualization techniques.

Mr. Eastman

**226C. Computer Visualization.** Lecture, three hours. Prerequisite: graduate standing or consent of instructor. Concept and techniques of computer visualization of artifacts, including realistic rendering and animation.

**227A. Programming Computer Applications in Architecture and Urban Planning.** Lecture, three hours. Introductory course in logic of computing, with emphasis on building tools for computer-aided problem solving in architecture and planning.

Ms. Liggett (F)

**227B. Geometric Modeling.** Lecture, three hours. Prerequisite: course 227A or equivalent. Theory and implementation for computer modeling of three-dimensional shapes and volumes; various representations; transformations, surface modeling.

Mr. Eastman

**227C. User Interaction Techniques in Design.** Lecture, three hours. Prerequisite: course 227A or equivalent. Software algorithms and techniques for implementing modern computer-user interfaces; raster operations; cognitive models; window management systems.

Mr. Eastman

**227D. Design and Building Models.** Lecture, three hours. Review of range of information and knowledge potentially used in design. Knowledge representation, abstractions, and constructs. Logical structure of design information. Development of knowledge used in areas of design, how it can be identified, analyzed, and structured.

Mr. Eastman

**228A-228B-228C. Computational Foundations of Architectural Design.** (Formerly numbered 228A-228B.) Lecture, three hours. Prerequisite: consent of instructor. Introduction to composition and description of architectural designs in algorithmic processes; alternative representations of shapes and their corresponding algebras; shape grammars and languages of designs/description schemes.

Mr. Stiny (F,W,Sp)

**242. Climate Responsive Design.** Prerequisite: professional degree in architecture or consent of instructor. Theory and method of design of buildings which specifically respond to local climate; intensive course in building climatology for advanced graduate studies students.

Mr. Milne

**243. Energy Modeling.** Prerequisites: one course in building climatology and one course in environmental controls. Geometric description of a building and computerized modeling of its instantaneous energy flows, using one of the large energy analysis computer programs such as DOE 2.1B.

Mr. Milne

**C247A. Introduction to Sustainable Architecture and Community Planning.** (Formerly numbered 247A.) Lecture, three hours. Energy and alternative resource-conscious design integration into architectural and urban design: passive, active, and photovoltaic solar systems and recycling of water, waste, and building materials at scale of buildings and communities. Concurrently scheduled with course C191.

Mr. Schoen

**247B. Energy/Resource-Conserving Solar Design and Practice.** Lecture, three hours. Prerequisites: course 247A and one climatology course, or consent of instructor. Extension of concepts and sizing of integrated systems introduced in course 247A; stand-alone approaches particularly in developing countries; impacts of global warming, deforestation on architecture; recycling; programming for project studio 403B.

Mr. Schoen

**248A-248B. Passively Integrated Solar Systems.** Prerequisites: courses 242 and 442, or consent of instructor. Analysis of different passively integrated solar systems for heating and cooling buildings, considering their anticipated performance and suitability for different climates and building types. Focus on quantitative aspects, including calculations of performance in terms of energy saving and expected indoor comfort conditions. **248A.** Heating; **248B.** Cooling.

Mr. Givoni (W,Sp)

**255A-255B. Climatic Issues in Urban Design.** Seminar, three hours. In-depth examination of impact of urban design (e.g., urban density, urban profile, public parks) on some aspect of urban climate, such as urban temperature, wind field, solar radiation availability, etc.

Mr. Givoni

**258. Urban Morphology.** Lecture, three hours. Exploration of urban space from structuralist perspective. Primary emphasis on relationships between socioeconomic, experiential, and formal structures of the urban environment.

Mr. Aran

**271. Elements of Urban Design.** Lecture, three hours. Introduction of basic knowledge of elements and methods of urban design. Multidisciplinary approach leading to understanding of political, socioeconomic, and technological framework of urban systems and its dynamic interrelations.

Mr. Lang (F)

**272. Real Estate Development for Planners and Architects.** Introduction to real estate development process specifically geared to students in planning, urban design, and architecture. Financial decision model, market studies, designs, loan package, development plan, and feasibility study. Lectures and projects integrate development process with proposed design solutions which are iteratively modified to meet economic feasibility tests.

Ms. Eizenberg, Mr. Richman (W)

**274. Introduction to Physical Planning.** Lecture, 90 minutes; discussion, 90 minutes. Overview of physical planning, land use, site analysis, and surveys; general plans and community plans; environmental review; zoning and ordinances; social impacts.

Ms. Goldstein (W)

**278. Qualitative Research Methods for Planners and Designers.** Lecture, 90 minutes; discussion, 90 minutes. Emphasis on conceptualizing research projects using grounded theory; relation to survey data. Techniques include content analysis, user needs analysis, participant observation, questionnaire construction, interview techniques. Projects include students' own research.

**279. Housing for Developing Countries.** Discussion, three hours. Considerations of socioeconomic, economic, and political factors, materials, structural systems, shelter accessories, and manufacturing technologies related to priorities of developing countries in housing policies and planning and design of shelter.

**C280. City Studies.** (Formerly numbered 280.) Lecture, three hours. Design of cities from early times to the present, with special emphasis on great 19th- and 20th-century cities of Europe and America. Establishment of basic principles of good city design. Discussion of current theories of city design. Concurrently scheduled with course C193.

Mr. Vreeland

**281A. Introduction to History of the Built Environment in the U.S.** Lecture, two hours; discussion, one hour. Open to advanced undergraduates with consent of instructor. Introduction to history of physical forms of urbanization in America; survey of economic, political, social, and aesthetic forces behind creation of built environments.

Ms. Loukaitou-Sideris (W)

**281B. Advanced Seminar: History of the Built Environment.** Discussion, three hours. Prerequisite: course 281A. Extended discussion of research methods and writing techniques suitable for advanced students working toward completion of some research on history of the built environment in the U.S.

**282A. Roots of Modernism.** Lecture, three hours. Overview of developments in Western architecture during the 18th and 19th centuries, covering Romantic and historicist trends of the 1700s, eclectic preferences of the 1800s, and turn-of-the-century premodern developments including art nouveau.

Mr. Jencks

**C282B. Modern and Postmodern Architecture.** (Formerly numbered 282B.) Lecture, three hours. Examination of 20th-century architecture from revolutionary concepts of modern movement, including manifestations in international style, to current transcendence of that movement with postmodernism and a resurgent new modernism. Concurrently scheduled with course C192.

Mr. Jencks

**283. History of the American Household and American Home.** Lecture, 90 minutes; discussion, 90 minutes. Prerequisite: course 281A or consent of instructor. Introduction to history of housing design in the U.S., emphasizing changing roles of women and men from Colonial times to the present and effects of these social changes on physical form of the dwelling and settlement. Discussion of concerns of professional architects and planners, as well as activity of bankers, builders, and homemakers.

**286A-286B. Ancient Architecture.** Lecture, three hours. Study of architectural developments from archaic Greece to the late Roman Empire. Examination of ancient buildings as functional constructs whose appearance was determined by aesthetic, religious, social, political, urban, and technological factors.

Ms. Favro

**287. Architecture in Europe and the Middle East, 400-1500.** Lecture, three hours. Prerequisite: consent of instructor. Study of East/West relationships, cultural concerns, and social interactions as seen through some major urban and architectural developments in Europe and the Middle East.

Mr. Aran

**288A-288B. Renaissance and Baroque Architecture.** Lecture, three hours. Examination of European architecture from the 15th to 17th century, with primary focus on developments in the Italian peninsula. Examination of Renaissance and baroque structures contextually, exploring changing cultural and theoretical values as well as aesthetic characteristics.

Ms. Favro

**289. Special Topics in Architecture and Urban Design (2 to 4 units).** Prerequisite: consent of instructor. Selected academic topics initiated by students, student teams, or faculty and directed by a faculty member. May be repeated for credit.

**290. History and Theory of Landscape.** Lecture, three hours. Historical introduction to principles of garden and landscape design. Exploration of key issues through case studies of gardens, landscape architecture, and vernacular landscape.

Mr. Phelps

**291. Theory of Architectural Programming.** (Formerly numbered 291A-291B.) Lecture, three hours. Exploration of concepts and methods of architectural programming and its interrelation to design process; planning of design process; various techniques for determination of program contents, basic conditions, resources, and constraints; identification of solution types for given situations.

Mr. Rand (F)

**292. Social Meaning of Space.** Discussion, three hours. Evolution of concept of space from its origins in ritual and primitive social organizations, concentrating on the child's evolving conception of space, literature on perceptual development, and studies of adaptation to spatial order of the human-made environment.

Mr. Rand

**294A-294B. Environmental Psychology.** Lecture, three hours. Introduction to models, concepts, and theories concerning impact of the environment on human behavior, perception, and thought. Review of research results concerning space perception, cognitive mapping, preferences and attitudes toward the environment, effects of crowding and stress, personal space and territoriality. Mr. Rand

**296. Proseminar: Architectural Theory.** Seminar, three hours. Orientation for Ph.D. students to tradition of architectural theory, scholarship, and research and to current research directions and questions, through intensive reading and critical discussion.

**297. Group Process in Design.** Lecture, two hours; discussion, two hours; laboratory, two hours. Prerequisite: consent of instructor. Designed to equip students with knowledge and skills needed to work effectively in design processes with other professionals and with client and user groups in organizational and other settings where interaction is important in determining design outcomes. Mr. Adelson

**298A-298D. Research Practicum in Architecture (2 to 4 units each).** Prerequisite: consent of instructor. In-depth examination of research methods in the various major fields. May be repeated for credit:

**298A.** Research Practicum in Policy, Programming, and Evaluation.

**298B.** Research Practicum in Technology.

**298C.** Research Practicum in Design Theory and Methods.

**298D.** Research Practicum in History, Analysis, and Criticism of Architecture.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**401. Projects in Architecture.** Studio, eight hours. Prerequisite: consent of instructor. Students may choose from a number of different projects in relevant problem areas to be offered by faculty members. May be repeated for credit. (F,W,Sp)

**402. Projects in Urban Design.** Studio, eight hours. Prerequisite: consent of instructor. Students may choose from a number of different projects in relevant problem areas to be offered by faculty members. May be repeated for credit. (F,W,Sp)

**403A-403D. Projects with Specific Topics (2 to 4 units each).** Studio, eight hours. Prerequisites: prior courses of particular sequence or consent of instructor.

**403A.** Projects in Policy, Programming, and Evaluation.

**403B.** Projects in Architectural Technology.

**403C.** Projects in Design and Computation.

**403D.** Projects in History and Theories of Architecture. (F,W,Sp)

**404. Joint Planning/Architecture Studio.** Lecture, one hour; discussion, one hour; studio, four hours. Opportunity to work on joint planning/architecture project for a client. Outside speakers; field trips. Examples of past projects include Third Street Housing, Santa Monica; "New American House" for nontraditional households; guide to setting up shelters for homeless in Los Angeles County; working with resident leaders at Los Angeles City public housing development. Ms. Leavitt (Sp)

**411. Introductory Design Studio.** Studio, 12 hours. Prerequisite: consent of instructor. Architectural composition is initially studied in terms of its separate elements. After each is studied by means of a manipulative exercise which allows for experimentation of its intrinsic possibilities, students then undertake a series of closely controlled exercises dealing with combining the elements. Design of a small building in which previously acquired knowledge is synthesized into a single design in latter part of course. (F)

**412. Building Design Studio.** Studio, 12 hours. Prerequisite: course 411. Design of project starts with exploration of architectural program in relation to design process and, particularly, implications of program on architectural forms and concepts. In second phase, structural elements are introduced to fulfill program requirements and to support and further develop intended forms and concepts. (W)

**413. Building Design with Landscape Studio.** Studio, 12 hours. Prerequisite: course 412. Building design and site planning in relation to water, landforms, and plants in natural landscape, with special attention to natural light, heat, and ventilation. (Sp)

**414. Major Building Design.** Studio, 12 hours. Prerequisite: second-year standing. Design projects which enable students to concentrate specifically on architectural issues, with emphasis either on treatment in breadth of large-scale projects or exploration in depth and detail of smaller-scale projects. Students learn to integrate structure, environmental control, physical context, and cultural environment in design of buildings and to present their ideas in graphic or model form. (F)

**415. Major Building Design II.** Studio, 12 hours. Prerequisite: course 414. Design projects which enable students to concentrate on specific architectural issues, with emphasis either on treatment in breadth of large-scale projects or exploration in depth and detail of smaller-scale projects. Students learn to integrate structure, mechanical systems, physical context, and cultural environment in design of buildings and to present their ideas in graphic or model form. Special emphasis on integration of environmental control systems.

**416. Comprehensive Design Studio.** Studio, 12 hours. Prerequisites: completion of required coursework up to first term of third year, consent of instructor. Course completes regular required sequence of design work, preparing students for third-year thesis preparation. Comprehensive design projects are structured to test students on integration of structural aspects, mechanical systems, site planning, and climatic considerations within their design solutions. (F)

**421. Studio Support (2 units).** Lecture/studio, 90 minutes. Prerequisite: consent of instructor. Studio support course, related to course 411, which introduces sketching, drawing, drafting, perspectives, model building, and computer-aided design through lectures, seminars, and independent or studio-related exercises.

**422. Studio Support (2 units).** Lecture/studio, 90 minutes. Prerequisite: consent of instructor. Studio support course, related to course 412, which introduces sketching, drawing, drafting, perspectives, model building, and computer-aided design through lectures, seminars, and independent or studio-related exercises.

**423. Studio Support (2 units).** Lecture/studio, 90 minutes. Prerequisite: consent of instructor. Studio support course, related to course 413, which introduces theoretical and technical issues such as site planning, urban design, landscape design, design with climate, and building typology, etc., through lectures, seminars, and independent or studio-related exercises.

**424. Studio Support (2 units).** Lecture/studio, 90 minutes. Prerequisite: consent of instructor. Studio support course, related to course 414, which introduces theoretical and technical issues such as programming and program manipulation, site planning, urban design, integration of technical systems, architectural expression, landscaping, and presentation, etc., through lectures, seminars, and independent or studio-related exercises.

**425. Studio Support (2 units).** Lecture/studio, 90 minutes. Prerequisite: consent of instructor. Design development of project initiated in preceding studio (usually course 414). One room or part of building is developed in detail, with integration of a range of technical systems such as structures, mechanical systems, etc.

**426. Studio Support (2 units).** Lecture/studio, 90 minutes. Prerequisite: consent of instructor. Studio support course, related to course 416, which introduces theoretical and technical issues such as programming and program manipulation, site planning, urban design, integration of technical systems, architectural expression, landscaping, and presentation, etc., through lectures, seminars, and independent or studio-related exercises.

**428. Advanced Architectural Drawing.** (Formerly numbered 422). Discussion, three hours; studio, three hours. Prerequisite: consent of instructor. Emphasis on exploration of interrelationship between drawing and design. Development of more advanced design strategies and modes of graphic exploration and presentation. (W)

**431. Structures I.** (Formerly numbered 431A-431B.) Lecture, three hours. Prerequisites: basic algebra, geometry, trigonometry, consent of instructor. Introduction to structural behavior and structural statics. Operations with forces and factors, both algebraically and graphically. Equilibrium of force systems; polygon of forces and funicular polygon. Internal actions: axial force and bending moment. Reactions, stability, and statical determinacy. Determine frames. Plane trusses; analysis and design. Mr. Iyengar (W)

**432. Structures II.** Lecture, three hours. Prerequisites: course 431, consent of instructor. Mechanics of structures and structural elements. Elastic materials: stress, strain, and stress-strain relations. Theory of bending: curvature, stress and strain distributions, centroid, moments of inertia, resisting and plastic moments. Design of beams for bending, shear, and deflections. Torsion members. Instability and design of columns. Design for combined bending and compression. Tensile structures; cables, pneumatic structures. Slabs and plates; shells and folded plates. Mr. Iyengar (Sp)

**433. Structures III.** Lecture, three hours. Prerequisites: course 432, consent of instructor. Introduction to statically indeterminate analysis. Structural materials and loads. Wind loads: distribution with height, design for comfort, structure behavior under lateral loads. Steel construction and concepts for high-rise structures. Structural case studies in timber and steel. Introduction to earthquakes: seismology, magnitude, intensity, history. Seismic instrumentation. Case studies of recent earthquakes and damage. Earthquake design concepts and seismic code requirements. Mr. Iyengar (F)

**434. Structures IV.** Lecture, three hours. Prerequisites: course 433, consent of instructor. Considerations of concrete structures. Materials of construction: cement aggregates, concrete mix design. Construction methods and structural systems. Reinforced concrete theory: elastic and ultimate strength analysis and design of beams, columns, and slabs. Case studies of concrete structures. Economics of high-rise concrete apartment buildings.

**436. Building Construction.** Limited to M.Arch. I students. Principles of structure and enclosure; basic nature, production, classification of primary building materials. Building elements explored for formal and functional properties; production and assembly possibilities in factory and field, application and role within building. Hands-on project. Mr. Schoen (W)

**437. Construction Documents.** Studio, eight hours. Prerequisite: one course in basic building construction (such as 436) or consent of instructor. Office/field communications explored through design of simple structure and creation of key working drawings and outline specifications. Introduction to CADD (computer-aided design and drafting) systems. Mr. Schoen (Sp)

**438. Systems Building.** Prerequisite: consent of instructor. Discussion and survey of past and present developments in Europe, the U.S.S.R., and the U.S. Impacts, demands, socioeconomic and legal constraints, user needs, performance specifications. Systems engineering and design. Measurement regulation, modular coordination, closed systems, open systems, design of systems, subsystems, components, elements, and materials. (W)

**441. Environmental Control Systems.** Prerequisite: consent of instructor. Design of mechanical systems necessary for functioning of large buildings: air handling, fire and life safety, plumbing, vertical and horizontal circulation, communication and electrical power distribution, analysis of interaction of these systems and their integrated effects on architectural form of a building. (W)

**442. Building Climatology.** Prerequisite: basic physics. Design of buildings which specifically respond to local climate; utilization of natural energies, human thermal comfort; sun motion and sun control devices; use of plant materials and landform to modify microclimate. Mr. Milne (Sp)

**444. Light and the Visual Environment.** Prerequisite: one course in building climatology or consent of instructor. Exploration of extent to which physical form of a building controls the luminous environment of its occupants; design of naturally and artificially illuminated interior spaces; parameters of human visual comfort. Mr. Milne

**445. Architectural Acoustics (2 to 4 units).** Lecture, three hours. Prerequisite: consent of instructor. Applied course in acoustical designing in architecture, including design of partitions to provide good sound insulation. Acoustical materials. Acoustical design of auditoriums. Control of noise in HVAC systems.

**448. Communication and Diffusion of Innovation.** Seminar, three hours. Innovation in the building industry and design professions. Successful creation and introduction of innovative products, processes, and technologies. Students expected to contribute to the meager literature of the field through case studies and projects. Visitors and field trips. Mr. Schoen

**461. Architectural Practice.** Seminar, three hours. Historical development of the profession; role of architect in contemporary society, current forms of practice and emerging trends. Contractual relationships, ethical responsibility, office management and promotion. Case studies of practical process.

**490. Urban Innovations Group Workshop (4 to 8 units).** Laboratory. Prerequisite: consent of workshop staff. Applied research and development work in Urban Innovations Group workshop under supervision of workshop staff. Client-oriented projects concerned with significant urban, social, or technical problems of the physical environment. May be repeated for credit.

**496. Special Projects in Architecture (2 to 8 units).** Prerequisite: consent of instructor. Projects initiated either by individual students or student teams and directed by a faculty member. May be repeated for credit.

**497. Special Projects in Urban Design (2 to 8 units).** Prerequisite: consent of instructor. Projects initiated either by individual students or student teams and directed by a faculty member. May be repeated for credit.

**498. Program Development (4 to 8 units).** Studio, six to 10 hours. Prerequisite: consent of instructor. Structural investigation of relationship between verbal description and architectural design. S/U grading.

**596A. Directed Individual Research and Study in Architecture and Urban Design (2 to 8 units).** May be repeated for credit. S/U grading.

**597A. Preparation for Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 8 units).** Prerequisite: consent of instructor. May be repeated for credit. S/U grading.

**598A. Preparation in Architecture/Urban Design for Master's Thesis (2 to 8 units).** Prerequisite: consent of instructor. May be repeated for credit. S/U grading.

**599A. Ph.D. Dissertation Research in Architecture (2 to 8 units).** Prerequisite: doctoral standing. May be repeated for credit. S/U grading.

## Urban Planning

1118A Perloff Hall, (310) 825-8957, 825-7331

### Professors

Leland S. Burns, Ph.D.  
John Friedmann, Ph.D., *Program Head*  
Allan D. Heskin, Ph.D., LL.B.  
Robin Liggett, Ph.D. (*Distinguished Teaching Award*)  
Donald Shoup, B.E.  
Edward W. Soja, Ph.D.  
Michael Storper, Ph.D.  
Martin Wachs, Ph.D. (*Distinguished Teaching Award*)  
Peter Kamnitzer, M.Pl., M.Arch., *Emeritus*

### Associate Professors

Leobardo Estrada, Ph.D.  
Margaret FitzSimmons, Ph.D. (*Distinguished Teaching Award*)  
J. Eugene Grigsby III, Ph.D.  
Susanna B. Hecht, Ph.D.  
Shirley Hune, Ph.D.  
Jacqueline Leavitt, Ph.D.  
Paul Ong, Ph.D.

### Assistant Professors

Raul Hinojosa-Ojeda, Ph.D.  
Anastasia Loukaitou-Sideris, Ph.D.  
Julie Roque, Ph.D.

## Scope and Objectives

The professional urban planner works on the creation and management of the urban environment, including its physical, economic, and social elements. Housing, transportation, air and water quality, the preservation of historic communities, and the development of community-level economic and employment programs are some of the tasks undertaken by recent graduates of the UCLA Urban Planning Program. Graduates have taken positions in local, state, and national governments, and increasingly with private companies whose products and services affect the urban environment. While most UCLA graduates find positions in the U.S., the program offers the opportunity to specialize in development planning abroad, including rural development, and many graduates have found positions in Latin America, Africa, and Asia.

The program offers a two-year Master of Arts degree and a Ph.D. Concurrent degree programs allow students to combine study for an M.A. in Urban Planning with work toward an M.B.A. in the John E. Anderson Graduate School of Management, a J.D. in the School of Law, or an M.A. in Latin American Studies.

The Urban Planning Program at UCLA takes pride in its collegial atmosphere. It features a lively mix of students from diverse academic backgrounds, drawn from many foreign countries and from every avenue of American life. It includes many members of racial and ethnic minority groups, and more than half the stu-

dents are women. A number of student organizations provide an interesting program of extracurricular activities.

## Requirements for Graduate Degrees

### Admission

The Urban Planning Program admits students for Fall Quarter only, and you should begin the application process a year in advance.

Prospective applicants may obtain a detailed program statement and Graduate Division application by writing to Admissions Office, Graduate School of Architecture and Urban Planning, B102 Perloff Hall, UCLA, Los Angeles, CA 90024-1467.

A statement of purpose, letters of recommendation, grade-point averages, and relevant experience are all considered in the review process for admission. Applicants must submit transcripts from each college or university attended and are encouraged to submit Graduate Record Examination (GRE) scores. The Test of English as a Foreign Language (TOEFL) is required of applicants whose native language is not English, unless they have completed at least two years of university-level coursework at an English-language institution. A score of 600 on the TOEFL is expected; applicants with a score below 550 are not considered for admission. Refer to "Proficiency in English" under "Graduate Admission" in Chapter 3 for further information.

Work samples (research papers and/or copy of the master's thesis) are required of doctoral applicants. Work samples (reports, research papers, slides, etc.) for master's applicants are optional. A maximum of two work samples may be submitted and will be returned only to applicants who enclose a self-addressed, stamped envelope.

### Areas of Concentration

You should select an area of concentration by the end of your first term in the program. The areas of concentration distinguish between different kinds of issues and contexts in which planners characteristically become engaged, as a professional career or a field of research. They are not meant to be mutually exclusive. The four areas of concentration are:

*Regional and International Development* — This area of concentration concerns the inter-related problems of territorial or area development in highly industrialized and developing countries. Perspectives on area development include political economy, locational analysis and regional economics, and analysis of institutions. Industrialization, urbanization, rural development, patterns of regional growth and decline, and problems of marginalized populations are major focal points of interest. Within this area, you are expected to select an emphasis on either developing or advanced industrial economies.



*Social Policy and Analysis* — The analysis of social services includes questions of production and distribution — how efficiently are services provided, who pays, and who benefits? These questions lead to more fundamental ones about the functions of planning and social policy. Social policy comprises the whole context of social actions which together determine the distribution of goods, services, and opportunities between rich and poor, men and women, young and old, and people of different ethnic and social origins. You may specialize in transportation, housing and real estate development, social services and social policy, or information decision systems. Work in transportation planning can be taken in conjunction with any of the four areas of concentration.

*Environmental Analysis and Policy* — The natural environment is both the context within which all human activities take place and a social product of those activities. Environmental planning begins as an attempt to mitigate often unforeseen consequences of economic growth and expansion where these seem to threaten social well-being and continuing political consensus. A special feature of this area of concentration is its emphasis on problems arising from the intensive use of environmental resources, viewed from the perspective of political economy.

*The Built Environment* — This area of concentration represents a blending of urban planning, architecture, and the social sciences. It deals with the social and economic forces affecting the three-dimensional built environment on a neighborhood, urban, and regional scale. Within this area, you can select a specialization in community planning and development or physical development and public policy.

*Additional Areas of Concentration* — In special circumstances, you may devise your own area in consultation with appropriate faculty members. Final approval of the proposed additional area of concentration must be obtained from the program head.

## Master of Arts in Urban Planning

The M.A. degree is fully accredited by the Planning Accreditation Board, a joint undertaking of the American Institute of Certified Planners and the Association of Collegiate Schools of Planning.

### Course Requirements

You must complete a minimum of 72 units. Students generally take 12 units per term, completing the program in two years.

**Core Course Requirement** — The core areas comprise knowledge common to all areas of planning, regardless of your specific focus. Six core courses (24 units) are required, including Architecture and Urban Planning 207 and 220A (waivers by examination), 220B, two core courses in theory and context, and one addition-

al course selected from those remaining on the core courses list in methods, theory and context, and/or practice. Substitutions must be approved by the program head.

On entering the program, you must pass examinations indicating competence in basic mathematics and microeconomics before enrolling in courses 220A and 207 respectively. Copies of sample examinations are mailed with admission offers to applicants accepted into the program. An undergraduate course in college algebra or precalculus should provide suitable background to pass the basic mathematics examination. An undergraduate course in microeconomics should be sufficient preparation for the microeconomics examination.

You are strongly encouraged to prepare for the examinations before enrolling so you can take courses 207 and 220A (offered only once per year in Fall Quarter) during your first term of studies.

**Area Course Requirement** — You must select an area of concentration. A list of courses is prepared for each area of concentration, from which you are required to select at least six (24 units); two are generally specified.

**Fieldwork Requirement** — Master's students who come to the Graduate School of Architecture and Urban Planning without substantial prior experience in planning or closely related activity are required to complete eight units (300 total hours) of fieldwork. Fieldwork is defined as an internship or "real world" experience with a planning office, a private organization involved in planning, a community development agency, or applied research within a practical or policy context (excluding conventional university-based research projects). Details on fulfilling this requirement are available in the program office.

You are encouraged to seek waivers for requirements which have been met in your previous education.

### Thesis or Comprehensive Examination Plan

In partial fulfillment of the requirements for the M.A. degree, you are required to complete either a thesis or one of two comprehensive examination plans (Plan A or Plan B) during your second year of study. Each option has its own deadline for selection, and once a deadline has passed, you are limited to options with subsequent deadlines.

**Thesis Plan** — The master's thesis is intended to provide the opportunity for independent scholarly research and should be the length and quality of a publishable journal article. If you select this option, in order to meet established deadlines, you must begin thesis work no later than Fall Quarter of your second year. Academic credit for thesis preparation is given through Architecture and Urban Planning 205 (four units required in Fall Quarter) and 598P (eight units over two terms).

**Comprehensive Examination Plan A (Client-Oriented Project)** — A client-oriented project is recommended for students who are more interested in practical application of what they have learned in their coursework than in scholarly research. The time span and magnitude of the final project approximates that of the thesis. Academic credit for project involvement is given through Architecture and Urban Planning 597P (four units each in Winter and Spring Quarters of your second year of studies).

As an alternative under Plan A, you may take courses 217A-217B (group comprehensive project sequence), offered Winter and Spring Quarters, to fulfill the comprehensive examination requirement.

**Comprehensive Examination Plan B (Two-Week Examination)** — Examinations for all areas of concentration are normally offered during the break between Winter and Spring Quarters. A committee of faculty members (appointed by the area of concentration coordinator) offers, reads, and grades the examination. No course credit is received.

## Concurrent Degree Programs

### J.D./M.A.-Urban Planning

The Graduate School of Architecture and Urban Planning and the School of Law offer a concurrent plan of study providing an integrated curriculum for students planning to specialize in the legal aspects of urban problems. Education in planning offers an overview of theories and methods that permit identification and treatment of urban problems; education in law offers insight into the institutional causes and possibilities for treatment of these problems. Students pursue studies in both schools and receive both the J.D. and M.A. degrees at the end of four years.

Students interested in the program must apply and be admitted to the School of Law, the Urban Planning Program, and the Graduate Division. For additional information, contact the graduate counselor in the Urban Planning Program.

### M.A.-Latin American Studies/M.A.-Urban Planning

The Urban Planning Program and the Latin American Studies Program offer a 2½- to 3-year concurrent plan of study leading to an M.A. degree in each program. Issues related to migration and settlement, comparative urbanization, human resources development and distribution, and rural economics are all of direct concern to planners and other policy-makers working in Latin America. The degree program provides an integrated curriculum through which students can develop professional knowledge and skills while receiving advanced area studies and language training.

Students should apply through the Urban Planning Program. Further details may be obtained from the graduate counselor in the Urban Planning Program.

### M.B.A./M.A.-Urban Planning

The Graduate School of Architecture and Urban Planning and the John E. Anderson Graduate School of Management offer a three-year concurrent degree program designed for students who seek careers which draw on general and specialized skills in urban planning and management. By providing knowledge of the workings of both the private and public sectors, the program enables individuals who have acquired these skills to move easily between careers in private industry and public service.

Students must contact both the M.B.A. Admissions Office, John E. Anderson Graduate School of Management, and the Graduate School of Architecture and Urban Planning Admissions Office. Further details may be obtained from the graduate counselor in the Urban Planning Program.

### Ph.D. in Urban Planning

A more detailed description of the program is available from the graduate counselor.

### Admission

Students admitted to the Ph.D. program must have a master's degree in planning or a closely related field and a minimum 3.5 grade-point average in all graduate work completed. Employment experience in planning or a closely related field is strongly recommended.

In your statement of purpose, you should address the following questions: (1) career plans and how a Ph.D. in planning will contribute to those plans, (2) your intended area of concentration, and (3) specific research interests and dissertation plans. Before you can be accepted into the program, two faculty members must agree to assume responsibility for guiding you in your studies.

### Foreign Language Requirement

A foreign language is not required either for admission to or completion of the doctoral program. However, students who are expecting to do dissertation research abroad are strongly advised to acquire the necessary language skills prior to beginning such research.

### Course Requirements and Qualifying Examinations

You must demonstrate a high level of competence in an area of concentration or major field and in planning theory and history as measured by coursework and doctoral examinations. In addition, you must satisfy certain requirements in research methods and studies outside of urban planning and are required to take Architecture and Urban Planning 208 to aid in preparation of dissertation research and writing.

### Planning Theory and History Requirement

Planning theory is concerned with the ways that philosophers and social scientists have examined the question of how scientific and technical knowledge is to be joined to practice and action, with particular emphasis on the field of urban and regional planning. Planning history looks at how planning has evolved in the U.S., Western Europe, and elsewhere in the world as a form of institutionalized practice.

Two advanced courses, Architecture and Urban Planning 210B and 210C, are required during the first year and must be passed with grades of A- or better. You may waive the two courses by satisfactorily completing a six-hour comprehensive written examination.

### Area of Concentration Requirements/Examination

The area of concentration is defined as a subject in which you are prepared to teach a sequence of courses and to conduct advanced research. The area should be generally recognized by academics in other planning schools and should be substantially broader than a dissertation topic.

You must prepare for an area of concentration examination by submitting for approval a plan of study to your advisory committee and to the coordinator of doctoral studies, preferably no later than the beginning of Winter Quarter of your first year. The plan must include (1) a short description of the area selected for study, (2) an indication of your major focus of research, (3) a short bibliography, (4) a list of courses and research papers through which you propose to prepare for the area examination, and (5) a timetable that indicates your expected completion of examinations and other requirements for the degree. The list of courses must include a minimum of three from *outside* the department and three methods courses (see below). Once approved, the plan is filed with the graduate counselor. The normal time for completion of the area of concentration requirement is two academic years.

The examination has two parts — written and oral. Both examinations must be taken in the same term. You may receive academic credit to prepare for the examination by enrolling in Architecture and Urban Planning 597P.

### Research Methods Requirement

You must first demonstrate competence in statistical methods at the master's level (Architecture and Urban Planning 220B or equivalent) either by completing course 220B with a grade of B+ or better or by submitting a waiver petition with appropriate documentation.

Additionally, as part of your plan of study, you must take a preapproved set of three advanced courses in research methods. These courses must be closely related to your area of concentration and must be completed with

grades of B+ or better. You may petition to waive this requirement on the basis of prior coursework.

### Oral Qualifying Examination

After successful completion of all requirements in planning theory and history, the area of concentration, research methods, and outside coursework, you are required to take the University Oral Qualifying Examination at which you defend your dissertation proposal. The examination is administered by your doctoral committee and should be taken no later than the end of your third year of doctoral study. To assist in the development of the proposal, you are required to complete Architecture and Urban Planning 208, preferably by the end of your first year.

### Dissertation/Final Oral Examination

The doctoral committee guides you in preparing the dissertation, which is to be a monograph representing an original contribution to planning knowledge.

The final oral examination, taken only at the discretion of the doctoral committee, involves a defense of the completed dissertation.

### Upper Division Courses

**CM128. Global Environment: Problems and Issues.** (Same as Geography M128.) Lecture, three hours. Prerequisite: consent of instructor. Analysis of selected environmental problems and issues associated with human-induced ecological disturbances. In-depth evaluation of key problem factors and processes using a multidisciplinary approach. Concurrently scheduled with course C252. P/NP or letter grading. Ms. Hecht

**M149. Transportation Geography.** (Formerly numbered 179.) (Same as Geography M149.) Prerequisite: consent of instructor. Study of geographical aspects of transportation, focusing on characteristics and functions of the various modes and on complexities of intra-urban transport.

**179. Variable Topics in Urban Planning (2 to 8 units).** Lecture, three hours. Variable topics course in selected subjects in social policy and public services, urban and regional development, natural environment and resources, and the built environment. May be repeated for credit.

**187. Planning and Designing Our Cities.** See listing under "Architecture/Urban Design." Mr. Kamnitzer

**CM189. Environmentalism: Past, Present, and Future (4 to 6 units).** (Formerly numbered C189.) (Same as Geography M115.) Discussion, three hours; optional field study, five to 10 hours. Exploration of history, politics, and theories of environmental movements, dynamics of race, class, and gender in relation to environmental agendas, and potential role of environmentalism in reshaping our society. Readings, discussion, and research papers. Offered annually as a graduate research seminar and biannually as an undergraduate upper division lecture and field studies program. Concurrently scheduled with course C265. P/NP or letter grading. Mr. Gottlieb (Sp)

**190. Human Environment: Introduction to Architecture and Urban Planning.** See listing under "Architecture/Urban Design." Mr. Rand (F)

**197. Planning for Minority Communities.** Lecture, three hours. Introduction to inner-city policy issues on three separate levels: (1) each student develops a comprehensive inner-city urban program using materials from Alternatives Inner-City Future Exercise, (2) each student is expected to identify value assumptions and theories of social justice implicit or explicit in alternative intervention programs, and (3) each student is expected to participate in class discussions that emphasize minority issues which affect implementation. Mr. Hinojosa-Ojeda (W)

**199. Special Studies (2 to 8 units).** See listing under "Architecture/Urban Design."

## Graduate Courses

**M202A. Public Control of Land Development (3 to 6 units).** (Same as Law M286.) Lecture, three hours. Analysis of legal and constitutional constraints on land-use planning and development; administrative and environmental regulatory processes, including relationship between law and planning, formulating land-use legislation, zoning, subdivision controls, eminent domain, taxation, urban development, environmental law, and negotiation. Theory and doctrine applied to case studies; research project/paper and/or examination required. Mr. McGee (Sp)

**M202B. Governance: State, Regional, and Local (3 to 6 units).** (Same as Law M285.) Lecture, three hours. Analysis of structure and function of local, regional, and state government in historical and institutional context: organization, finance, intergovernmental relations, role of judiciary, public services, lawmaking, citizen participation through initiatives and referenda, and government tort liability.

**M202C. Seminar: Urban Affairs (3 to 6 units).** (Same as Law M526.) Seminar, two hours; two field trips. Consideration of selected aspects of housing law and policy, including current federal and state housing subsidies; remedies of housing consumers; impacts of market discrimination against children, racial minorities, and women; and local governmental laws influencing cost and supply, such as antispeculation and rent control legislation. Catalytic role of economic and community development in expansion of housing supply also considered.

**205. Research Seminar for Master's Thesis.** Discussion, three hours. Prerequisite: second-year standing in M.A. program. Required course for all second-year M.A. students who select thesis option rather than one of comprehensive examination options, aimed at aiding students in preparation of their theses. Organized as workshop with periodic reports and discussions of proposed research. S/U grading. Mr. Burns (F)

**206A. Urban Data Analysis: Demographic Applications.** Lecture, three hours; laboratory, one hour. Prerequisites: one graduate-level statistics course, familiarity with one of the packaged statistics programs. Development of basic demographic methods of analysis in a policy context, providing parallel development of content, data sources, and applications. Topics include data sources and errors, mortality, fertility, age structure, and their effects on planning policy. Mr. Valenzuela (W)

**206B. Urban Data Analysis: Planning Models.** Lecture, three hours; laboratory, one hour. Prerequisite: course 206A or equivalent. Advanced course in urban data analysis which builds on course 206A. Examination of relationship between demographic and other socioeconomic processes, with emphasis on planning models. Topics include internal and international migration, crime analysis, transportation demand, and economic activity forecasting. Mr. Levine (F)

**207. Public Resource Allocation.** Lecture, three hours. Prerequisite: passing score on microeconomics examination given first day of class. Practical use of economics in analyzing public resource allocation problems. Topics include review of marginal analysis, difference between equity and efficiency, public goods and free rider problem, environmental pricing, public service pricing, and conflicts between individual and collective rationality. Mr. Shoup (F)

**208. Seminar: Advanced Research Methods.** Lecture, three hours. Prerequisites: doctoral standing, consent of instructor. Required of Ph.D. students in or following second year. Process of developing dissertation proposal; introduction to alternative conceptions of science (or rigorous scholarship) now apparent in various social science paradigms. S/U grading. Ms. FitzSimmons (Sp)

**209. Special Topics in Planning Theory (2 to 8 units).** Lecture, three hours. Seminar on topics in planning theory selected by faculty. May be repeated for credit.

**210A. History of Planning Thought since 1800.** Lecture, three hours. Historical introduction to major ideas and theories of planning which have influenced its development from the early 19th century to the present. Ms. Sandercock (F)

**210B. Comparative History of Planning Practice.** (Formerly numbered 212.) Lecture, three hours. Limited to Ph.D. and advanced M.A. students. History of city planning, its critics, and profession of planning through the 19th and 20th centuries. Comparison of evolution of the field in several countries, especially English-speaking countries. Ms. Sandercock (W)

**210C. Colloquium in Planning Theory.** (Formerly numbered 210B.) Lecture, one hour; discussion, two hours. Prerequisite: course 210A. Limited to Ph.D. students. Introduction to some central theoretical issues of contemporary planning. Mr. Friedmann (Sp)

**211. Law and the Quality of Urban Life.** Lecture, three hours. Introduction to law as an urban system, directed primarily toward those interested in intersection of law and policy: broad array of urban issues examined, as is law's role as a partial cause and cure of urban problems. Examination of law as a changing process rather than a collection of principles, so that students develop facility to interact with law and lawyers in a positive and forceful manner. Mr. Heskin (W)

**214. Ethics in Planning.** Examination of ethical dimensions of planning at many levels, including issues of bribery and corruption, aspects of client/sponsor and employer/employee relationships, collection, use, and release of information, and ethical aspects of administrative discretion. Ethical aspects of planning methods, concept of environmental ethics, and evolution of code of ethics in planning profession. Mr. Wachs (Sp)

**M215. Spatial Statistics.** (Formerly numbered M215B.) (Same as Geography M272.) Lecture, two hours; discussion, one hour; laboratory, one hour. Prerequisite: consent of instructor. Specific techniques useful in analysis of spatial data and modeling of spatial distributions. Ms. Fan (Sp)

**217A-217B. Comprehensive Planning Project.** Prerequisite: second-year standing. Comprehensive project brings together students of varying backgrounds and interests in joint solution of an urban planning problem. Each project spans two terms. Successful completion of project meets requirements of Comprehensive Examination Plan A of master's program. (W,Sp)

**218. Graphics and Urban Information.** Lecture, two hours; studio, one hour. Presentation of basic graphic methods and tools for conceptualization, analysis, and documentation of the built environment. Development of fundamental skills of graphic ideation and communication. Ms. Loukaitou-Sideris (F)

**219. Special Topics in the Built Environment (2 to 8 units).** See listing under "Architecture/Urban Design."

**220A. Quantitative Analysis in Urban Planning I.** Lecture, three hours. Prerequisite: passing score on basic mathematics proficiency examination given first day of class. Introduction to mathematical and statistical concepts and methods with applications in urban planning. Review of basic mathematical concepts fundamental to planning methods; linear and nonlinear functions focusing on growth curves and mathematics of finance; data measurement and display; descriptive statistics and probability. Introduction to use of computer as a tool in analysis of planning-related data. Ms. Liggett (F)

**220B. Quantitative Analysis in Urban Planning II.** Lecture, three hours. Prerequisite: course 220A or equivalent (demonstrated by passing score on mathematics proficiency examination given first day of course 220A). Introduction to concepts of statistical inference and modeling, with emphasis on urban planning applications. Topics include sampling, hypothesis testing, analysis of variance, correlation, and simple and multiple regression. Use of computer as a tool in statistical analysis and modeling. Ms. Liggett (W)

**221. Evaluation Methods.** Lecture, three hours. Prerequisites: courses 207, 220A. Examination of methods used to evaluate efficiency and effectiveness of government programs and investment projects. Theory and practice of evaluation, with emphasis on techniques of cost-effectiveness analysis, cost-benefit analysis, discounting, sensitivity analysis, target efficiency, fiscal audits, and evaluation design. Ms. Roque, Mr. Shoup (Sp)

**222. Introduction to the Planning Profession.** Lecture, three hours. Lecture/project course offering introduction to the planning profession and to Urban Planning Program at UCLA. Overview of forces that shaped its practice over time and exploration of various professional roles for planners. Planning education viewed as response to changing needs and as catalyst for emerging roles for professional planners. Generally taken Fall Quarter of first year of M.A. program. Ms. Leavitt (F)

**223. Professional Development Seminar.** Lecture, 90 minutes; discussion, 90 minutes. Recommended (but not prerequisite): course 222. Problems of professional practice. Development of methods which integrate theory and practice through readings and individual and collective analyses of each student's fieldwork experience. Students must be working in a field setting to enroll. Job fair is held at end of Fall Quarter to place students in field settings. Students combine course 223 with one term of course 490 or 496F to meet fieldwork requirement. S/U grading. Ms. Shirazi (W)

**227A. Programming Computer Applications in Architecture and Urban Planning.** See listing under "Architecture/Urban Design." Ms. Liggett (F)

**229. Special Topics in Planning Methods (2 to 8 units).** Seminar on topics in planning methodology selected by faculty. May be repeated for credit.

**M231. Urban Housing and Community Development (3 to 6 units).** (Same as Law M287.) Lecture, three hours; discussion, one hour. Examination of past 40 years of federal and state programs to stem urban decline and improve housing in the U.S.; comparison and contrast of legal and policy initiatives in areas of public housing, housing segregation, mortgage subsidies, landlord/tenant law, urban renewal, and community organizing. Research paper required.

**232A. Introduction to Regional Planning: Evolution of Regional Planning Doctrines.** Lecture, three hours. Critical and historical survey of evolution of regional planning theory and practice, with particular emphasis on relations between regional planning and developments within Western social and political philosophy. Major concepts include regions and regionalism, territorial community, and social production of space. Mr. Soja (F)

**232B. Spatial Planning: Regional and International Development.** Examination of theory and practice of spatial planning at regional, national, and international scales, including evaluation of regional growth strategies, national settlement policy, growth center concepts, and normative-ideological issues involved in international development planning. Generally taken in first year. Mr. Cubelo (W)

**233. Political Economy of Urbanization.** Introduction to basic concepts and analytical approaches of urban political economy, with major emphasis on American urban problems. Topics include historical geography of urbanization, development and transformation of urban spatial structure, suburbanization and metropolitan political fragmentation, urban fiscal crisis, and role of urban social movements. Mr. Soja (Sp)



*UCLA's inverted fountain near Franz Hall.*

**235A-235B. Urbanization and Rural Development in Third World Countries.** Lecture, 90 minutes; discussion, 90 minutes. Prerequisite for course 235A: course 266 or consent of instructor; for course 235B: course 235A or consent of instructor. Questions of urbanization and planning in first term; rural development in second term. Case studies from Latin America, Africa, and Asia. Lectures, student presentations, and policy debates.  
Mr. Friedmann (W,Sp)

**235C. Research Seminar: Alternative Development.** Discussion, three hours. Prerequisites: courses 235A-235B or 267A and 267B. Thesis and dissertation research seminar, consisting of review of major issues in an alternative development, specifically in poor countries, addressing issues in urban and rural development, with focus on one or more of following: inclusive democracy, appropriate economic growth, gender equality, and environmental sustainability; guest lectures and student presentations. S/U grading.  
Mr. Friedmann

**236A. Urban and Regional Economic Development I.** Lecture, three hours. Introduction to industrial change and effect on urban and regional development theory and policy. Major topics include role of industrialization in economic development, explanations of regional industrial growth and decline, rise and fall of Fordism and its regional patterns, new forms of industrialization with particular emphasis on flexible production, and debates regarding political economy of industrialization.  
Mr. Storper (W)

**236B. Urban and Regional Economic Development II.** Lecture, three hours. Prerequisite: course 236A. Examination of local economic development theory and history and issues associated with different public policies. Topics include changing patterns of employment, job creation, job retention, and forms of income redistribution aimed at stabilizing a community's economy, with particular concern for women, minorities, and the poor.  
Mr. Wolff (Sp)

**236C. Urban and Regional Economic Development III.** Discussion, three hours. Prerequisite: course 236B. Advanced seminar in community economic development, involving case study analysis, fieldwork, and individual student projects.  
Ms. Haas (F)

**238. Advanced Seminar: Urban and Regional Development.** Lecture, two hours; discussion, two hours. Prerequisite: doctoral standing or consent of instructor. Advanced research seminar on major issues in urban and regional development theory and/or policy. Topics usually reflect faculty research projects and change from year to year. May be repeated for credit.  
Mr. Soja (W)

**239. Special Topics in Urban and Regional Development Policy (2 to 8 units).** Lecture, three hours. Seminar on topics in urban and regional development policy selected by faculty. May be repeated for credit.

**241A. Urban Transportation Planning I.** Lecture, three hours. Historical development of urban transportation planning and current political and administrative frameworks for planning; relationship between transportation systems and urban form, historical review of automobile and public transit systems; urban highway and transit planning programs; financing of urban transportation; environmental and social impacts of transportation systems; current policy dilemmas; controlling the automobile, promoting mass transit, energy issues.  
Ms. Shirazi, Mr. Wachs (F)

**241B. Urban Transportation Planning II.** Prerequisites: courses 207, 220B, and 241A, or consent of instructor. Economic and social basis for travel; basic data sources for examining urban travel and transportation; techniques of forecasting and analyzing travel; mathematical models of travel; trip generation, trip distribution, modal split, traffic assignment, and route choice; uses of forecasts and approaches to transportation system and project evaluation.  
Mr. Levine, Mr. Wachs (W)

**241C. Urban Transportation Planning III.** Lecture, three hours. Prerequisites: courses 207 and 220B, or consent of instructor. Financing street and highway systems; public transit finance, including fare and subsidy policy; transportation system management and transportation demand management; ridesharing; transportation programs to meet needs of elderly and disabled.  
Ms. Shirazi (Sp)

**M242A. Topics in Asian American Studies: Asian Migration to the U.S.** (Same as Asian American Studies M297B.) Prerequisite: graduate standing or consent of instructor. Emphasis on Asia as main regional source for international migrants. Topics include patterns and theories of international migration and their relevance to the Asian experience, sending and receiving country perspectives, research and policy issues. S/U or letter grading.

**M242B. Topics in Asian American Studies: Urbanization in Asia — Policy Issues and Problems.** (Same as Asian American Studies M297C.) Prerequisite: graduate standing or consent of instructor. Urbanization in less-developed countries in Asia with specific reference to its peculiar features and characteristics, and relationship of urbanization to the development process. Topics include urbanization development, structural and policy determinants of urbanization, urban policy and strategies, and country case studies. S/U or letter grading.

**244. Housing Markets.** Lecture, three hours. Ways that housing markets should but sometimes do not work in developed economies. Interaction of demand factors such as population distribution, household formation, income, and credit, as well as their particular impacts on groups of the population. Topics include filtering, housing search, segregation, pricing, production efficiency, organization of construction industry, market failure, and appropriate policy responses.  
Mr. Burns (F)

**245. Urban Public Finance.** Lecture, three hours. Prerequisites: courses 207 and 220A, or consent of instructor. Theory and practice of urban public finance, with emphasis on methods used to fund public infrastructure. Topics include fiscal impact analysis of real estate development, effects of taxes on land-use decisions, benefit assessments to finance neighborhood public investment, private and intergovernmental contracting as method of supplying urban public services, tax increment finance for urban redevelopment, and municipal bond market.  
Mr. Shoup (W)

**246. Housing in Social and Economic Development Policy.** Lecture, three hours. Seminar on position of housing in national and regional development strategies, with focus on policies for Third World nations. Topics include nature of housing "need," market responses, evolution of housing policy, theory of intervention, alternative policies for increasing housing supply. Numerous case studies.  
Mr. Burns (W)

**249. Special Topics in Social Policy and Analysis (2 to 8 units).** Lecture, three hours. Seminar on topics in social policy and analysis selected by faculty. May be repeated for credit.

**250. Introduction to Social Policy.** Lecture, three hours. Analysis of demographic changes, history, needs, and ideological debates which affect development of social policy in the U.S., compared with Western Europe.  
Mr. Grigsby (Sp)

**251. Planning for Multiple Publics.** Lecture, three hours. Exploration of planning needs of various social groups in urban settings, using existing literature and research studies to determine appropriate mechanisms of planning for multiple publics. Analysis of communities in Los Angeles metropolitan area to gain insights into practical, theoretical, and methodological problems of planning for multiple publics. Generally taken in first year.  
Mr. Grigsby (F)

**C252. Global Environment: Problems and Issues.** (Formerly numbered 269.) Lecture, three hours. Prerequisite: consent of instructor. Analysis of selected environmental problems and issues associated with human-induced ecological disturbances. In-depth evaluation of key problem factors and processes using a multidisciplinary approach. Concurrently scheduled with course CM128. S/U or letter grading.  
Ms. Hecht

**254. Survey Methods in Planning.** Lecture, three hours. Prerequisite: course 220B or equivalent. Use of surveys in planning. Conducting of a small area survey, with emphasis on methods to obtain quality data appropriate for planning: questionnaire development, sample design, interviewing, data processing, and analysis. Presentation of survey to planners or public agencies.  
Mr. Levine (Sp)

**256. Social Impact Analysis.** Lecture, three hours. Exploration of ways of assessing and determining social impacts on communities resulting from large-scale planning projects. Students develop mitigation measures to address identified adverse consequences.  
Mr. Grigsby (W)

**260A. Political Economy and the Environment.** Lecture, three hours. Debate about environmental policy is increasingly couched in economic terms. Environmental issues have become questions of political economy, as they influence international and domestic policy and reflect on functioning of market system. Examination of assumptions and implications of alternative approaches to political economy, as these pertain to questions of environmental policy.  
Ms. FitzSimmons (W)

**260B. Politics, Institutions, and the Environment.** Lecture, three hours. Planners face some important dilemmas in designing institutions and policies intended to correct or prevent disruptions of the environment. Introduction to these problems, focusing on essential theoretical questions that must be addressed in attempts to control environmental problems in our society. Review of recent developments in environmental policy in light of growing environmental movements; evaluation of current approaches to environmental problems, considering their institutional forms and epistemological foundations.  
Ms. Roque (Sp)

**261. Land-Use Control: Economic and Structural Perspectives.** Lecture, two hours; discussion, one hour. Prerequisites: courses 260A and 260B, or consent of instructor. Comparison of regulatory methods of land-use control to command or planning methods. Basics of land use as a commodity in first part: land economics, land markets. Development, historically, of a structuralist perspective on use of land in cities and regions in second part. Land-use regulation (in third part) in light of first two, to see how effective it is in steering course of land development. Regulatory approach compared with real planning.

**M262A. Toxics Reduction: Science, Engineering, and Policy Issues.** (Formerly numbered 262A.) (Same as Chemical Engineering M290U and Environmental Health Sciences M249.) Lecture, three hours. Prerequisites: courses 260A and 260B, or consent of instructor. Public health experts, industrial engineers, and planners are being asked to assess risks biologically active chemicals present and to take such risks into account in planning process. Examination of potential for toxics reduction and current state of government and industry activities in this area.  
Mr. Froines, Ms. Roque (W)

**262B. Urban Environmental Problems: Water Resources.** Lecture, three hours. Water is life and wealth in California, which has world's most extensive long-distance, interbasin water transfer system. To date, water resources planning has been devoted almost exclusively to adding facilities for water delivery. But conflicts over additional developments have basically precluded further extension of this system, despite growing pressures to increase supplies. Examination of environmental impacts, geography, use of water, and consideration of resource planning.  
Mr. Gottlieb (Sp)

**263. Natural Resource Conservation.** Discussion, three hours. Prerequisites: courses 260A and 260B, or consent of instructor. Exploration, through reading, discussion, and student presentations, of meaning of resource conservation, its desirability, and ways of achieving it. Emphasis on integrated management of public lands, though students may attend particularly to a specific resource (minerals, water, timber, wilderness).  
Ms. FitzSimmons (F)

**M264. Environmental Law (3 to 6 units).** (Same as Law M290.) Lecture, three to three and one-half hours. Examination of the field of environmental law through analysis of various legal issues and public policy; legal consequences of public decision-making strategies and allocation of primary responsibility for various environmental decisions. Focus on air pollution and Clean Air Act as a means of illustrating policy issues underlying the field. Mr. Araiza (Sp)

**C265. Environmentalism: Past, Present, and Future (4 to 6 units).** (Formerly numbered 265.) Discussion, three hours; optional field study, five to 10 hours. Exploration of history, politics, and theories of environmental movements, dynamics of race, class, and gender in relation to environmental agendas, and potential role of environmentalism in reshaping our society. Readings, discussion, and research papers. Offered annually as a graduate research seminar and biannually as an undergraduate upper division lecture and field studies program. Concurrently scheduled with course CM189. S/U or letter grading. Mr. Gottlieb (Sp)

**266. City and Countryside in the Third World.** Lecture, three hours. Review of basic literature and schools of thought on development theory through analysis of impact of mercantilism, colonialism, capitalism, and socialism on various urban and rural social and economic structures in the Third World. Presentation, through evaluation of theoretical writings and case studies, of complexity and diversity of developing countries. Emphasis on linkages between policy and rural and urban impacts. Gives students important background for courses 267A, 267B, and many of the other planning courses addressing Third World issues. Ms. Hecht (F)

**267A. Resource-Based Development Planning.** Discussion, three hours. Recommended (but not prerequisite): course 266. Some major issues associated with development of specific natural resources. Topics include nature of particular resource (or region associated with it), its previous management, involvement of the state, corporations, and local groups, and environmental and social impact of its development. Ms. Hecht (W)

**267B. Rural Development Issues.** Lecture, three hours. Recommended (but not prerequisite): course 266. Development more thoroughly of themes raised in earlier courses. Topics may include peasantries, development and rural women, agricultural ecology, comparative land reform, agrarian revolution, and special problems of tropical development. May be repeated for credit with consent of instructor. Ms. Hecht

**268. Advanced Seminar: Environmental Analysis and Policy.** Discussion, three hours. Prerequisite: consent of instructor. Exploration of broad issues related to environmental and resource planning. Generally intended for second-year M.A. and Ph.D. students. May be repeated for credit. Ms. FitzSimmons, Mr. Gottlieb (F)

**269. Special Topics in Environmental Analysis and Policy (2 to 8 units).** Lecture, three hours. Seminar on topics in environmental analysis and policy selected by faculty. May be repeated for credit.

**270. Homelessness: Housing and Social Service Issues.** Lecture, 90 minutes; discussion, 90 minutes; one field trip. Review of current status of homelessness: who homeless are, what social services and housing are available, existing and proposed programs—appropriate architecture, management, and sources of funding. Outside speakers include providers of services to the homeless. Ms. Leavitt

**272. Real Estate Development for Planners and Architects.** See listing under "Architecture/Urban Design." Ms. Eizenberg, Mr. Richman (W)

**273. Site Planning.** Lecture, 90 minutes; laboratory, 90 minutes. Introduction to principles of site planning for urban areas. Mr. Kamnitzer

**274. Introduction to Physical Planning.** See listing under "Architecture/Urban Design." Ms. Goldstein (W)

**275. Inner-City Housing Policies: Old and New Approaches.** Lecture, 90 minutes; discussion, 90 minutes. Study of federal and local housing policy as it affects inner cities, with emphasis on New York and Los Angeles. Examination of research on housing conditions and community development policies, with particular emphasis on alternatives such as resident-controlled housing; analysis of rehabilitation policies; review of new concepts and current legislative proposals. Mr. Heskin, Ms. Leavitt (F)

**276. Planning Workshop (4 to 8 units).** Lecture, one hour; discussion, one hour; laboratory, four hours. Prerequisite: consent of instructor. Planning projects with focus on physical planning.

**277. Historic Preservation: Principles and Practices.** Lecture, 90 minutes; discussion, 90 minutes. Overview of preservation field, including history and theory, current legislation, tax incentives, preservation planning, landmark and district surveys and designations, adaptive reuse, citizen involvement, and social issues. Ms. Goldstein (Sp)

**278. Qualitative Research Methods for Planners and Designers.** See listing under "Architecture/Urban Design."

**281A. Introduction to History of the Built Environment in the U.S.** Lecture, two hours; discussion, one hour. Open to advanced undergraduates with consent of instructor. Introduction to history of physical forms of urbanization in America; survey of economic, political, social, and aesthetic forces behind creation of built environments. Ms. Loukaitou-Sidaris (W)

**281B. Advanced Seminar: History of the Built Environment.** Discussion, three hours. Prerequisite: course 281A. Extended discussion of research methods and writing techniques suitable for advanced students working toward completion of some research on history of the built environment in the U.S.

**283. History of the American Household and American Home.** Lecture, 90 minutes; discussion, 90 minutes. Prerequisite: course 281A or consent of instructor. Introduction to history of housing design in the U.S., emphasizing changing roles of women and men from Colonial times to the present and effects of these social changes on physical form of the dwelling and settlement. Discussion of concerns of professional architects and planners, as well as activity of bankers, builders, and homemakers.

**284. Looking at Los Angeles.** Discussion, three hours. Introduction to physical form and history of Los Angeles, with emphasis on visual observation of the city as a skill for architects and planners. Field trips throughout the city.

**285. Great Planning Debates: Gender.** Lecture, 90 minutes; discussion, 90 minutes. Seminar on substantial literature on complex relationships between gender, race, and class in urban planning. Alternative theories describe an inadequate fit between American households, housing, and services and document environmental inequities women and children face in contemporary cities. Students prepare oral seminar reports on topics such as social service provision, housing, transportation planning, economic development, and safe public spaces. Ms. Sandercock

**375. Teaching Apprentice Practicum (1 to 4 units).** See listing under "Architecture/Urban Design."

**404. Joint Planning/Architecture Studio.** Lecture, one hour; discussion, one hour; studio, four hours. Opportunity to work on joint planning/architecture project for a client. Outside speakers; field trips. Examples of past projects include Third Street Housing, Santa Monica; "New American House" for nontraditional households; guide to setting up shelters for homeless in Los Angeles County; working with resident leaders at Los Angeles City public housing development. Ms. Leavitt (Sp)

**490. Urban Innovations Group Workshop (4 to 8 units).** See listing under "Architecture/Urban Design."

**494. Supervised Independent Teaching (2 to 8 units).** Supervised individual teaching experience. May be repeated for credit. S/U grading.

**496F. Field Projects (2 to 8 units).** May be repeated for credit. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596P. Research in Planning (2 to 8 units).** May be repeated for credit.

**597P. Preparation for M.A. Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 8 units).** May be repeated for credit. S/U grading.

**598P. Preparation for M.A. Thesis in Urban Planning (2 to 8 units).** May be repeated for credit. S/U grading.

**599P. Ph.D. Dissertation Research in Planning (2 to 8 units).** May be repeated for credit. S/U grading.

# Graduate School of Education

Theodore R. Mitchell, Dean



# 10

As the top-ranked public graduate school of education in the nation, the UCLA Graduate School of Education (GSE) is widely recognized for its integration of theory and practice and for its broad commitment to professional education.

Through its scholarship, its graduate training programs, and its partnerships with schools and school professionals, GSE endeavors to improve educational practice, enhance theoretical and applied research, expand the study of educational policy, and advance the education of professional leaders and specialists.

The school attracts prominent scholars and is internationally known for its research centers in evaluation, higher education, history, child development, and urban education. Whether students choose to pursue a Ph.D., an Ed.D., a master's degree, or a services or instructional credential, they will graduate with a broad understanding of educational theory and tested practice.

Together our commitment is to the highest quality professional education and to the application of research to the educational challenges facing a diverse and increasingly urbanized world.

# Graduate School of Education

Office of Student Services:  
1605 Maxxam Building (122 Moore  
Hall in early 1994), (310) 825-8327

## Professors

Marvin C. Alkin, Ed.D., *Chair*  
Alexander W. Astin, Ph.D.  
Helen S. Astin, Ph.D.  
Eva L. Baker, Ed.D.  
Gordon L. Berry, Ed.D.  
Nicholas Blurton Jones, Ph.D.  
James E. Bruno, Ph.D.  
Leigh Burstein, Ph.D.  
Arthur M. Cohen, Ph.D.  
Sol Cohen, Ph.D.  
Aimée Dorr, Ph.D.  
Norma D. Feshbach, Ph.D.  
Ronald Gallimore, Ph.D., *in Residerice*  
Sandra Graham, Ph.D.  
John N. Hawkins, Ph.D.  
Charles C. Healy, Ph.D.  
Carollee Howes, Ph.D.  
Dean T. Jamison, Ph.D.  
Marilyn L. Kourilsky, Ph.D. (*Distinguished Teaching Award*)  
Bengt Muthén, Ph.D.  
Jeannie Oakes, Ph.D., *Vice Chair*  
Val D. Rust, Ph.D.  
Geoffrey B. Saxe, Ph.D.  
Rodney W. Skager, Ph.D.  
Deborah J. Stipek, Ph.D.  
Noreen M. Webb, Ph.D.  
Carl Weinberg, Ed.D.  
Merlin C. Wittrock, Ph.D. (*Distinguished Teaching Award*)

## Professors Emeriti

Charlotte A. Crabtree, Ph.D.  
Burton R. Clark, Ph.D.  
Wilbur H. Dutton, Ed.D.  
Donald A. Erickson, Ph.D.  
Lawrence W. Erickson, Ed.D.  
Claude W. Fawcett, Ph.D.  
Clarence Fielstra, Ph.D.  
Simon González, Ed.D.  
John I. Goodlad, Ph.D., L.H.D., LL.D.  
C. Wayne Gordon, Ph.D.  
Frank M. Hewett, Ph.D.  
B. Lamar Johnson, Ph.D. (*Distinguished Teaching Award*)  
Wendell P. Jones, Ph.D. (*Distinguished Teaching Award*)  
Evan R. Keislar, Ph.D.  
Barbara K. Keogh, Ph.D. (*Distinguished Teaching Award*)  
Frederick C. Kintzer, Ed.D.  
George F. Kneller, Ph.D., Litt.D., LL.D., D.Sc., L.H.D.  
John D. McNeil, Ed.D.  
David O'Shea, Ph.D.  
C. Robert Pace, Ph.D.  
Rosemary Park, Ph.D., LL.D., Litt.D., L.H.D.  
W. James Popham, Ed.D. (*Distinguished Teaching Award*)  
Harry F. Silberman, Ed.D.  
Lewis C. Solmon, Ph.D.  
A. Garth Sorenson, Ph.D.  
Louise L. Tyler, Ph.D.  
Samuel J. Wanous, Ph.D.  
Richard Williams, Ph.D.  
Charles Z. Wilson, Ph.D.

## Associate Professors

James S. Catterall, Ph.D., *Assistant Dean*  
David P. Ericson, Ph.D.  
Harold G. Levine, Ph.D.  
Peter L. McLaren, Ph.D.  
Theodore R. Mitchell, Ph.D., *Dean*  
Don T. Nakanishi, Ph.D.  
Romeria Tidwell, Ph.D.  
Carlos A. Torres, Ph.D., *Assistant Dean*  
James W. Trent, Ph.D.  
Concepción Valadez, Ph.D.  
Wellford Wilms, Ph.D.

## Assistant Professors

Alfredo J. Artiles, Ph.D.  
Lynn G. Beck, Ph.D.  
Megan L. Franke, Ph.D.  
Christine D. Gutierrez, Ph.D.  
Robert M. Hodapp, Ph.D.  
Connie L. Kasari, Ph.D.  
Patricia M. McDonough, Ph.D.  
D. Michael Pavel, Ph.D.  
Michael H. Seltzer, Ph.D.  
Daniel G. Solorzano, Ph.D.  
Zhixin (Justine) Su, Ph.D.  
Amy S. Wells, Ph.D.

## Adjunct Professors

Howard Gadlin, Ph.D.  
Harry Handler, Ph.D., *Assistant Dean*  
Madeline Hunter, Ph.D.  
Leslie Koltai, Ed.D.

## Adjunct Associate Professor

Philip Ender, Ph.D.

## Degrees Offered

Master of Education (M.Ed.)  
Master of Arts (M.A.) in Education  
Doctor of Education (Ed.D.)  
Doctor of Philosophy (Ph.D.) in  
Education

## Requirements for Graduate Degrees

### Admission

Qualifications for admission to a program of study in education, in addition to the University requirements for admission, are:

- (1) Scores on the quantitative and verbal sections of the Graduate Record Examination (GRE). (Note: The Miller Analogies and Doptelt Mathematical Reasoning Test may be substituted for the GRE.)
- (2) At least three letters of recommendation documenting qualifications and/or professional experience.

Acceptance into a particular division is dependent on the availability of openings in that division and the applicant's desired emphasis area; preference is given to applicants with relevant background and experience.

Admission to a degree program occurs simultaneously with admission to graduate standing and to the Graduate School of Education. No screening examination (other than described above) and no specific coursework are required for admission to a degree program.

The Graduate School of Education has an application form for teaching credential, master's, and doctoral degree programs which must be completed in addition to the one used by UCLA Graduate Application Processing.

Application forms and departmental brochures are available from the Office of Student Services, Graduate School of Education, 1605 Maxxam Building (122 Moore Hall in early 1994), UCLA, Los Angeles, CA 90024-1521.

For information on the proficiency in English requirements for international graduate students, refer to "Graduate Admission" in Chapter 3.

## Curricular Divisions

### Administration, Curriculum, and Teaching Studies

M102, C191A, 206A, C206D, 220A, 220B, 223, 224, 229, 240, 241, 242, 246A, 246B, 251D, 260, 262A, 262B, 262F, 262J, 272, 273A, 400, 401, 402, 403, 420A, 422, 423, 424A, 424B, 424C, 424G, 437A, 440C, 441A, 441B, 442B, 443, 444A, 444B, 447, 448A, 448B, 470A, 470B, 490A

### Educational Psychology

125A, 125B, 191F, 197F, 197G, 205, 212A, 212B, 212C, 213A, 213B, 213C, 214A, 214B, 214D, 214E, 214F, M215, 216, M217A through 217D, 217F, M217G-M217H-M217I, 225A, 225B, 227A, 227B, 227C, 232, 236, 256A, 256B, 257, 258A, 258B, 267, 271A, 280A, 280B, M281A, M281B, M281C, 415A, 415B, 421A, 421C, 421D, 421F, 433A, 433B, 501

### Higher Education and Work

M148, 180, 181, 192, 209A, 209C, 209D, 214C, 234, 235, 238, 239, 248, 249A, 249B, 259A, 261E, 261F, 262I, 263, 410A-410B, 431A, 431B, 431C, 432, 437B, 461A, 462



**Social Research Methodology**

200B, 200C, 202, 206C, 210A through 210E, 211A, 211B, 211C, 218A through 218D, 219, 221, M222A, 222B, 222C, 228, 245, 251A, 251C, 251E, 255A-255B-255C, 411A, 411B, 412A, 412B, 460

**Social Sciences and Comparative Education**

M108, 200A, M201C, C203, 204A through 204F, C207, 208A, 208C, C244, 252A, 252B, M252C, 253A through 253I, 254, 300

**Teacher Education**

100, 112, 264, 309A, 309B, 311, 312, 315A-315B, 316A-316B, 318A-318B, 320A-320B, 324A through 324D, 330A through 330D, 360, 409A, 409B, 413A-413B, 481, 489, 491A, 492

**Academic Interinstitutional Programs**

313A-313B, 313C-313D, 314A-314B, 317A, 317B, 317C, 319, 321A through 321D, 322A, 322B, 323, 326, 327, 328, 329, 331, 332

**Special Studies**

296A-296F, 299A-299B-299C, 310, 375, 498A-498B-498C, 499A-499B-499C, 596, 597, 598, 599

**Undergraduate Specialization in Education Program**

91A through 91E, 191B through C191E, 197, 199

Specific degree programs and participating divisions or emphases are indicated below. Contact the Office of Student Services regarding faculty member(s) to be consulted with respect to enrollment and research opportunities and/or course sequencing in each program.

**Master of Education** — Administrative and policy studies in education; bilingual/cross-cultural education; curriculum and the study of schooling; teacher education.

**Master of Arts in Education** — All divisions, except administration, curriculum, and teaching studies.

**Doctor of Education** — All divisions, except social sciences and comparative education.

**Doctor of Philosophy in Education** — All divisions.

**Master of Education**

The Master of Education (M.Ed.) *professional* degree program is designed for individuals preparing for mid-level professional positions in schooling or for advanced professional study; it is the appropriate degree to provide professional foundation study in preparation for the Ed.D. program.

**Admission**

Requirements are applicable in accordance with the selected field of emphasis:

(1) *Administrative and Policy Studies in Education* — Possession of a valid instructional

credential is preferred. Students with a demonstrated commitment to improving American schooling are sought for admission.

(2) *Bilingual/Cross-Cultural Education* — Completion of an approved program of professional preparation leading to a preliminary instructional credential is required, as is classroom experience — as a teacher or aide — for at least two years, at any level of schooling. Evidence of professional competence and conscientiousness, as well as the necessary second-language proficiency, are also required.

(3) *Curriculum and the Study of Schooling* — Persons with above-average capabilities and interest in curriculum and instruction are sought. Experience as a practitioner in the emphasis field is advantageous.

(4) *Teacher Education* — This is a four-term program leading to qualification for a Multiple or Single Subject Instructional Credential and a Master of Education degree. Experience in working with children is advantageous.

**Course Requirements**

A minimum of nine upper division and graduate courses (36 units) must be completed in graduate standing. Check with your respective division to determine specific course requirements. At least five courses (20 units) must be in the professional education (400) series. No 500-series courses may be applied toward the degree. A directed field experience (Education 498A or 498B or 498C) is required of all M.Ed. students. Courses must be completed with grades of C or better and with a cumulative grade-point average of at least 3.0.

Information regarding specific course requirements in a selected M.Ed. program may be obtained from the Office of Student Services.

**Comprehensive Examination Plan**

There is no thesis plan offered in this program. Comprehensive examinations for M.Ed. degrees are offered three times a year, once in Fall, Spring, and Summer Quarters, with the exception of the curriculum and the study of schooling examination which is offered only in Fall and Spring Quarters. They consist of:

(1) A written examination designed to assess (a) comprehension of the professional knowledge basic to the selected field of emphasis, including key concepts and principles, major theoretical positions, and fundamental issues and (b) understanding of the broad educational context in which the selected professional field resides.

(2) For curriculum and the study of schooling students, a performance component designed to assess competency in the solution of problems in the selected professional field; a test of whether knowledge can be applied in a real or simulated professional setting.

Information regarding examination foci for any selected M.Ed. program is available from the

assigned faculty adviser. The comprehensive examination may be repeated a second time with your adviser's consent if failed the first time. If you fail the examination twice, you must obtain approval of your academic adviser and division to take the examination a third time. No fourth sitting is allowed.

**Master of Arts in Education**

The Master of Arts (M.A.) *academic* degree program in Education is designed to meet the needs of individuals preparing for careers in basic research or for advanced graduate study.

**Course Requirements**

A minimum of nine upper division and graduate courses (36 units) must be completed in graduate standing. Check with your respective division to determine specific course requirements. Six courses (24 units) must be taken in the Education 200 and 500 series. No more than two 500-series courses (eight units) may be applied toward the divisional course minimum and toward the graduate course minimum.

Two research methods courses approved by your faculty adviser are required. Additional courses to complete the 36-unit requirement may be selected from offerings in Education and/or other departments with consent of the assigned faculty adviser and division head. Courses must be completed with grades of C or better and with a cumulative grade-point average of at least 3.0.

**Thesis Plan**

Under this plan, you prepare a thesis which is a report of the results of original investigation. Before beginning work on the thesis, you must obtain approval of the subject and general plan from the Graduate School of Education and your thesis committee chair.

The theses and dissertations adviser and the Graduate Division publication, *Regulations for Thesis and Dissertation Preparation*, provide guidance in the final preparation of the manuscript. The department does not require a formal examination in connection with the thesis plan.

**Comprehensive Examination Plan**

The comprehensive examination is concerned with central topics in the selected division and field of emphasis. Questions are comprehensive in nature and are designed to measure the breadth and depth of knowledge, as well as ability to focus that knowledge on specific problems. The examination is offered twice yearly, once in Fall Quarter and once in Spring Quarter, and may be repeated a second time with your adviser's consent if failed the first time. If you fail the examination twice, you must obtain approval of your academic adviser and division to take the examination a third time. No fourth sitting is allowed.

## Doctor of Education

The Doctor of Education (Ed.D.) *professional* degree program is designed to meet the needs of individuals preparing for careers of leadership and applied research in the schools and community educational programs. Major foci include practice, applied studies, and knowledge related to professional skills.

### Admission

To be admitted, you must have a bachelor's degree, at least two years of successful professional experience in education or equivalent (may be completed prior to advancement to candidacy for all divisions except the administration, curriculum, and teaching studies division which requires the experience as a prerequisite to admission), and demonstrated evidence of potential for professional leadership. You are admitted by a division and must formally apply for a change of division.

### Course Requirements

A minimum of 18 courses is required, as follows:

- (1) Three research methods courses, with no more than two introductory (first tier) courses and at least one intermediate/advanced (second tier) course, selected from the departmental list approved for the Ed.D.
- (2) Nine education courses, of which at least six must be from the Education 400 series; all courses must be approved by the faculty adviser.
- (3) Three supplemental courses selected from offerings in the school (outside your field of emphasis) or in another UCLA professional school or academic department.
- (4) A sequential three-term field practicum (Education 499A-499B-499C) in which you engage in field research activities and submit a field research paper or similar product by the end of the sequence.

You may select the remainder of the courses (to complete the required total), which must be in compliance with your division's guidelines and must be approved by your faculty adviser.

Whenever additional academic background is needed, a faculty adviser may require other coursework. Courses must be completed with grades of B- or better and with a cumulative grade-point average of at least 3.0.

### Screening and Qualifying Examinations

The written doctoral screening examination, taken after you complete appropriate coursework determined by your division, is concerned with central topics in your division and field of emphasis. Questions are comprehensive in nature and are designed to measure your breadth and depth of knowledge, as well as to focus that knowledge on specific problems. All students admitted to a doctoral pro-

gram without a master's degree are required to take the doctoral screening examination. If you are required to take this examination, you are ordinarily not allowed to complete more than nine courses prior to taking the examination (to ensure that you demonstrate basic competencies as early as possible in your doctoral training).

After satisfying the above requirements, you are eligible to take the following qualifying examinations:

- (1) A written examination which tests the core knowledge of the division and emphasis you have selected. The questions reflect a professional orientation. The examination may be repeated a second time with your adviser's consent if failed the first time. If you fail the examination twice, you must obtain approval of your academic adviser and division to take the examination a third time. No fourth sitting is allowed.
- (2) The University Oral Qualifying Examination, conducted by the doctoral committee, which employs topics from education that are related to your written research proposal.

At the present time both written examinations are offered twice yearly, once in Fall Quarter and once in Spring Quarter.

For further information on the screening and qualifying examinations, contact the Office of Student Services.

### Dissertation/Final Oral Examination

The dissertation, required of every candidate for the Ed.D. degree, must embody the results of your independent investigation and must contribute to professional knowledge in education and the improvement of school practice.

The decision as to whether a final oral examination is required is at the discretion of the doctoral committee. The final oral examination may be open to faculty, students, and other interested professionals at the discretion of the dissertation chair and the student.

## Ph.D. in Education

The Doctor of Philosophy (Ph.D.) in Education is a strongly research-oriented *academic* degree designed for individuals preparing for careers in basic research or college-level instruction. Major foci include theory, research methodology, basic studies, and in-depth knowledge in education and an approved cognate field.

### Admission

To be admitted, you must have a bachelor's degree and must demonstrate academic excellence and the potential for scholarly research. You are admitted by a division and must formally apply for a change of division.

### Foreign Language Requirement

The school does not have a foreign language requirement for the Ph.D.; however, the social

sciences and comparative education division requires that, once admitted, you must demonstrate reading competence in a language other than English.

### Course Requirements

The program of study is determined by you and the faculty adviser and must conform to division and school requirements. A minimum of 18 courses is required as indicated below; at least 10 must be in the 200 series:

- (1) A sequential three-term research practicum (Education 299A-299B-299C) designed to provide an overview of research in the field of study. You complete a research paper by the end of the sequence.
- (2) Five courses from offerings in your selected division.
- (3) Three upper division or graduate courses from other academic departments of the University related to your proposed area of research (the cognate).
- (4) Three research methods courses, with no more than two introductory (first tier) courses and at least one intermediate/advanced (second tier) course, selected from the departmental list approved for the Ph.D.

You may select the remainder of the courses (to complete the required total), which must be in compliance with your division's guidelines and must be approved by your faculty adviser.

Whenever additional academic background is needed, a faculty adviser may require other coursework. Courses must be completed with grades of B- or better and a cumulative grade-point average of at least 3.0.

### Screening and Qualifying Examinations

The written doctoral screening examination, taken after you complete appropriate coursework determined by your division, is concerned with central topics in your division and field of emphasis. Questions are comprehensive in nature and are designed to measure your breadth and depth of knowledge, as well as to focus that knowledge on specific problems. All students admitted to a doctoral program without a master's degree are required to take the doctoral screening examination. If you are required to take this examination, you are ordinarily not allowed to complete more than nine courses prior to taking the examination (to ensure that you demonstrate basic competencies as early as possible in your doctoral training).

After satisfying the above requirements, you are eligible to take the following qualifying examinations:

- (1) A written examination which tests the core knowledge of the division and emphasis you have selected. The questions reflect a research and theoretical orientation. The examination may be repeated a second time with your advis-

er's consent if failed the first time. If you fail the examination twice, you must obtain approval of your academic adviser and division to take the examination a third time. No fourth sitting is allowed.

(2) The University Oral Qualifying Examination, conducted by the doctoral committee, which employs topics from both education and the cognate discipline(s) that are related to your written research proposal.

At the present time both written examinations are offered twice yearly, once in Fall Quarter and once in Spring Quarter.

For further information on the screening and qualifying examinations, contact the Office of Student Services and the respective divisions.

### Dissertation/Final Oral Examination

The dissertation, required of every candidate for the Ph.D. degree, must embody the results of your independent investigation, must contribute to the body of theoretical knowledge in education, and must draw on interrelations of education and the cognate discipline(s).

The decision as to whether a final oral examination is required is at the discretion of the doctoral committee. The final oral examination may be open to faculty, students, and other interested professionals at the discretion of the dissertation chair and the student.

### Cooperative Degree Programs

General information regarding the following cooperative degree programs is available from the Office of Student Services, 1605 Maxxam Building (122 Moore Hall in early 1994).

#### J.D./Education Program

The Graduate School of Education and the School of Law offer a concurrent plan which allows students to design a program of study leading to the J.D. and any advanced degree in education (M.Ed., M.A., Ed.D., or Ph.D.). If the program meets the degree requirements in both schools, students are awarded both degrees on its completion.

#### M.A.-Latin American Studies/M.Ed.

The Graduate School of Education and the Latin American Studies Program offer an articulated degree program which allows students to combine study for the M.A. in Latin American Studies and the M.Ed., with an emphasis in curriculum. Articulated programs do not allow course credit to be applied toward more than one degree.

#### UCLA/CSULA Joint Ph.D. in Special Education

A joint Ph.D. program in Special Education is offered by UCLA and California State University, Los Angeles. The goal of the joint program

is to prepare teachers and college instructors of high competence in the various fields of special education. Specific information regarding emphases and requirements is available from the joint doctoral adviser at UCLA (1546 Maxxam Building) or the chair of the Department of Special Education at CSULA.

### Certificate (Credential) Programs

The California Commission on Teacher Credentialing has authorized the Graduate School of Education to offer professional programs that lead to (1) the Multiple Subject Instructional Credential, (2) the Single Subject Instructional Credential, (3) the Bilingual Emphasis Instructional Credential, and (4) the Administrative Services Credential.

### Lower Division Courses

**91A. Infant Care and Development.** Using scientific methods to answer questions about how to raise children, educational researchers, psychologists, and anthropologists try to replace myths and anecdotes with a verifiable understanding of children's development and problems and choices that parents face in raising children. Mr. Blurton Jones

**91B. Child Care: Research, Practice, and Policy.** Examination of psychological research on influences of early child care on children's concurrent and subsequent development, with this research linked to basic research in developmental psychology and education. Discussion of influence of research on the policy process. Ms. Howes

**91C. Elementary and Secondary Education.** Prerequisites: consent of department, upper division standing preferred. Social sciences overview of major policy issues in American public education. General introduction to social sciences research in analysis of educational policy issues and to methods for exploring major policy issues. Topics include school finance, equal educational opportunity, testing and evaluation, teacher compensation, and school law. Mr. Bruno

**91D. The Teaching Profession.** Prerequisites: consent of department, upper division standing preferred. Introduction to the field of education. Experts within Graduate School of Education and experienced school personnel present a variety of topics in education and provide opportunity to visit diverse educational settings.

**91E. Perspectives of the American College.** Examination of historical conditions that have shaped American higher education and consequent differential characteristics, trends, and practices that bear on dynamics and impacts of contemporary colleges. Emphasis on interrelated research, academic, social, and policy issues underlying the diverse system of American higher education. Mr. Trent

### Upper Division Courses

**100. Cultural Foundations of Education.** Prerequisite: consent of instructor. Analysis of significant problems and issues in contemporary American education using historical, philosophical, sociological, and organizational perspectives, including those of particular minority groups in the U.S. Patterns of intergroup and school/community relations. (W)

**M102. The Mexican American and the Schools.** (Same as Chicana and Chicano Studies M102.) Prerequisite: consent of instructor. Review of research and teaching strategies. Analysis of school policies and practices and their effect on development of Mexican American and Chicano youth and communities. Mr. Solorzano (W)

**M108. Sociology of Education.** (Same as Sociology M175.) Prerequisite: Sociology 1. Study of social processes and interaction patterns in educational organizations; relationship of such organizations to aspects of society, social class, and power; social relations within school, college, and university; formal and informal groups, subcultures in educational systems; roles of teachers, students, and administrators. Fieldwork may be required.

**112. Psychological Foundations of Education.** Prerequisite: consent of instructor. Analysis of learning processes in school situations. Processes of human motivation, affective, cognitive, social, and personal development of children and adolescents, evaluation of learning, individual differences, and implications of relevant theory and research for instructional practices. (F)

**125A. Education of Exceptional Individuals.** Prerequisite: Psychology 10 or equivalent. Introduction to the field of special education, with emphasis on psychology of individual differences, learning characteristics of exceptional individuals, and application of research and theory to special education problems. Mr. Artilles (F,W,Sp)

**125B. Principles for Teaching Exceptional Individuals.** Prerequisite: consent of instructor. Approaches for teaching exceptional individuals in special and regular education programs. Principles and assumptions underlying alternative approaches. Emphasis on individualizing curriculum and classroom management. (W)

**M148. Women in Higher Education.** (Same as Women's Studies M148.) Prerequisite: upper division standing. Education and career development of women in higher education. Specifically, emphasis on undergraduate and graduate women; women faculty and administrators; curricula, programs, and counseling services designed to enhance women's educational and career development, affirmative action, and other recent legislation. Ms. Astin (W)

**180. Social Psychology of Higher Education.** Overview of significant studies in social psychology of higher education. Focus on institutional characteristics and students' interpersonal and intrapersonal processes, with special emphasis on identifying and explaining effects of college experience on student development and achievement. Mr. Trent and the Staff (F)

**181. Advanced Topics in Social Psychology of Higher Education.** Lecture, three hours; discussion, one hour. Prerequisites: course 180, consent of instructor. Critical analysis of social psychological inquiry into college attendance, preparation, persistence, and outcomes. Examination of intellectual and personal development of individuals vis-à-vis differential college environments and instructional experiences with respect to students' gender, culture, motivation, involvement, and expectations. Mr. Anderson, Mr. Trent (F)

**C191A. Philosophy of Education: Ethics and Values.** Study of ethics and value theory in teaching and learning, educational organization and policy, and curriculum design and validation. Concurrently scheduled with course C206D.

**191B. Issues in Education: Historical Perspective.** (Formerly numbered C191B.) Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Exploration of such controversial issues in American education as access, diversity, parental choice, cultural literacy, teacher empowerment, and role of popular media in historical perspective. Mr. S. Cohen

**C191C. Economics of Education.** Introductory course in microeconomic and macroeconomic techniques applied to education. Methodologies illustrated principally in context of current issues in American education. Concurrently scheduled with course C244. Mr. Bruno, Mr. Jamison (W)

**C191D. Politics of Education.** Political dimensions of education institutions as organizations. Relationships between education institutions and political institutions in society. Political theory as a foundation for public policy analysis; interest groups in education policy formation and implementation. Concurrently scheduled with course C207.

Mr. Hawkins, Mr. Torres (Sp)

**C191E. Educational Anthropology.** Recommended (but not prerequisite): Anthropology 9. Study of education through research and method of the cultural anthropologist. Interdependence of culture and education, with emphasis on cross-cultural studies of enculturation, schooling, values, cognition, language, and cultural change. Concurrently scheduled with course C203. (Sp)

**191F. Educational Psychology.** Broad overview of educational psychology, with examination of relationship of teaching and learning; various perspectives as to how children learn; issues of teaching and learning that arise based on child's social class, ethnic background, gender, age, and level of ability.

Mr. Hodapp (Sp)

**192. Theory and Practice of the Teaching and Learning Function.** Lecture, three hours; practicum placement. Prerequisite: consent of instructor. Analysis of learning theory and teaching practice in light of research on student characteristics, learning environments, student/instructor interaction, and outcomes of instruction. Application of theory and research to practice.

Mr. Barbee, Mr. Trent (Sp)

**197A-197Z. Current Issues in Education.** (Formerly numbered 197.) Lecture, three to four hours. Prerequisite: upper division standing. Variable topics course organized on selected current issues basis, integrating field observations and readings through seminar discussions. Consult *Schedule of Classes* for topics and instructors:

**197F. Laboratory in Education of Exceptional Children.** (Formerly numbered 325A.) Lecture, one hour; laboratory, six to eight hours. Prerequisite: course 125A or consent of instructor. Six to eight hours per week of observation, research, and teaching of children with severe behavioral/emotional disorders and/or mental retardation in UCLA Neuropsychiatric Institute and Hospital School.

**197G. Advanced Laboratory in Education of Exceptional Children.** (Formerly numbered 325B.) Lecture, one hour; laboratory, six to eight hours. Prerequisite: course 197F. Six to eight hours per week of research, teaching, and multidisciplinary team participation with children with severe behavioral/emotional disorders and/or mental retardation in UCLA Neuropsychiatric Institute and Hospital School.

**199. Special Studies.** Prerequisites: senior standing, consent of instructor. To be arranged with faculty member who will direct the study.

## Graduate Courses

**200A. Historical Research and Writing.** Methods of historical research and writing for students who are or who will be engaged in research and in report or paper or thesis writing, regardless of their field of interest.

Mr. S. Cohen

**200B. Survey Research Methods in Education.** Prerequisite: course 210A or equivalent. Problems of conceptualization, organization, and gathering non-experimental and quasi-experimental quantitative and qualitative data.

Mr. O'Shea

**200C. Analysis of Survey Data in Education.** Lecture, three hours; laboratory, two hours. Prerequisite: course 200B. Introduction to techniques of processing and analyzing nonexperimental and quasi-experimental quantitative data.

Mr. O'Shea

**M201C. History of American Education.** (Formerly numbered CM201C.) (Same as History M264.) History of educational thought and of social forces impinging on American education from the 1880s to the present. Analysis of relation, between these ideas and forces, and aims and practices of American education today.

Mr. S. Cohen (Sp)

**202. Evaluation Theory.** Prevalent evaluation theories, systems for categorizing these theories, and process of theory development in educational evaluation.

Mr. Alkin

**C203. Educational Anthropology.** Recommended (but not prerequisite): Anthropology 9. Study of education through research and method of the cultural anthropologist. Interdependence of culture and education, with emphasis on cross-cultural studies of enculturation, schooling, values, cognition, language, and cultural change. Concurrently scheduled with course C191E. (Sp)

**204A. Introduction to Education and the Social Sciences.** Prerequisite: consent of division. Interdisciplinary course intended to introduce students to study of educational issues, texts, and movements of thought through social sciences and comparative perspectives.

Mr. S. Cohen, Mr. Jamison,  
Mr. O'Shea, Mr. Solorzano (F)

**204B. Introduction to Comparative Education.** Examination of conceptual and methodological questions underlying comparative education. Particular attention to development of the field and to styles of social analysis which may be applied to comparative and cross-national studies in education.

Mr. Nakanishi, Mr. Rust, Mr. Torres

**204C. Education and National Development.** Prerequisite: graduate standing or consent of instructor. Analysis of various social sciences perspectives and methodologies (including modernization, dependency, Marxist, neo-Marxist, liberation theology, and world-system theories of change and development) and changing notions of role of education in development of less-industrialized countries of the world.

Mr. Hawkins (W)

**204D. Minority Education in Cross-Cultural Perspective.** Historical and contemporary analyses of educational policies with regard to ethnic, religious, and linguistic minorities through selected national and international case studies. Introduction to cross-cultural education in representative countries in relation to social, political, and economic systems.

Mr. Nakanishi, Mr. Solorzano

**204E. International Efforts in Education.** Prerequisite: graduate standing or consent of instructor. Critical analysis of complex world of "development cooperation," with particular reference to bilateral and multilateral efforts in education.

**204F. Nonformal Education in Comparative Perspective.** Comparative and international study of organized and systematic educational activity for children, youth, and adults carried on outside of schools. Types of programs include, among others, consciousness raising, community action, skills training, literacy, and extension programs.

Mr. Torres (F)

**205. Computers in the Educational Process.** Introduction to theory, experimentation, evaluation, and future of computer systems in education, with emphasis on computer-assisted instruction (CAI), and use of computers to teach programming and to foster development of writing, computational, and filing skills.

Ms. Dorr (F)

**206A. Philosophy of Education: Introduction.** Systematic introduction to the field, indicating ways in which philosophy serves to elucidate educational aims, content, methods, and values.

**206C. Introduction to Conceptual Analysis.** Conceptual analysis of recurrent and contemporary themes in the field. Emphasis on development of logical and linguistic skills used in analysis of educational problems and issues.

**C206D. Philosophy of Education: Ethics and Values.** Study of ethics and value theory in teaching and learning, educational organization and policy, and curriculum design and validation. Concurrently scheduled with course C191A.

**C207. Politics of Education.** Prerequisite: one approved research methods course required for master's or doctoral degree at GSE. Political dimensions of education institutions as organizations. Relationships between education institutions and political institutions in society. Political theory as a foundation for public policy analysis; interest groups in education policy formation and implementation. Concurrently scheduled with course C191D.

Mr. Hawkins, Mr. Torres (Sp)

**208A. Perspectives on the Sociology of Education.** Sociological perspectives on current issues in educational policy and practice, including desegregation, decentralization, equality of educational opportunity, structure of educational organization, teacher/student relationships, reform in education at elementary, secondary, postsecondary levels.

Mr. O'Shea (F)

**208C. Explanation in the Social Sciences and Educational Research.** Lecture, two hours; discussion, two hours. Prerequisite: graduate standing or consent of instructor. Overview of basic strategies and forms of explanation relevant to inquiry in education from vantage point of various social and behavioral sciences disciplines.

Mr. Blurton Jones

**209A. History of Higher Education.** Examination of development of postsecondary education in the U.S., with attention to social context and to scope and variety of institutions.

Mr. A. Cohen

**209C. Problems in Research and Evaluation in Higher Education.** Critical review of research and evaluation studies of higher education, with special attention to need for studies of new programs and problems, and to design and methodology of evaluative research.

Mr. Astin and the Staff

**209D. System of Higher Education.** Analysis of structure and function of American postsecondary education from systems perspective. Emphasis on structure of system and comparative characteristics (faculties, student bodies, finances, outputs) of different types of institutions.

Mr. Astin and the Staff

**210A. Introduction to Research Design and Statistics.** Fundamentals of research design. Language of research. Planning and conduct of research. Interpretation and reporting of research outcomes. Introduction to descriptive statistics: mean, median, mode, variance. Introduction to normal curve.

(F,W)

**210B. Statistical Inference.** Prerequisite: knowledge of research designs and univariate descriptive statistics. Regression, correlation, inference, normal curve tests, t-tests, simple and factorial analysis of variance, and selected nonparametric tests.

Mr. Seltzer, Ms. Webb (F,W,Sp)

**210C. Analysis of Variance.** Prerequisite: course 210B or equivalent. Completely randomized designs, randomized block designs, nested designs, and their combinations into advanced factorial designs using fixed, random, and mixed models. Analysis of covariance, introduction to multiple regression and quasi-experimental designs.

Mr. Ender, Mr. Seltzer (W,Sp)

**210D. Multivariate Analysis.** Prerequisite: course 210C or equivalent. Review of multiple regression analysis, analysis of covariance. Introduction to matrix algebra. Introduction to multivariate normal distribution. Multivariate analysis of variance. Linear discriminant function. Analysis of repeated measurements. Canonical correlation. Principal components.

**210E. Factor Analysis.** Prerequisites: courses 210D, 211B. Exploratory factor analysis, rotations, confirmatory factor analysis, multiple-group analysis.

Mr. Muthén

**211A. Measurement of Educational Achievement and Aptitude.** Prerequisite: course 210A. Critical study of tests of achievement and aptitude, with emphasis on group tests; relation of achievement to aptitude; social implications of measurement of intelligence; elements of validity and reliability.

(F)

**211B. Measurement in Education: Underlying Theory.** Prerequisite: course 211A. Measurement theory as applied to testing, focusing primarily on classical test theory; implications of theories for test construction and selection; current status of validity and reliability theory. Ms. Webb (W)

**211C. Item Response Theory.** Prerequisites: courses 210C, 211B, or equivalent. Item response theory, applications to educational achievement tests, item bias, test information, test equating, computerized adaptive testing. Mr. Muthén (Sum)

**212A. Learning and Education.** Models of learning, modeling, reinforcement, motivation, encoding, memory, transfer, individual differences, and instruction. (F)

**212B. Motivation and Affect in Educational Process.** Prerequisites: courses 210A, 212A. Review of theoretical and empirical literature on motivational factors in school settings and conditions for acquisition of affective outcomes. Ms. Graham (W)

**212C. Cognition and Creativity in Education.** Prerequisite: course 212A. Review of theoretical and empirical literature on cognitive processes in school learning, including knowledge acquisition, comprehension, metacognition, and creativity.

Mr. Wittrock (Sp)

**213A. Counseling Psychology in School and Community.** Analysis and in-class application of student personnel service theory and methods, with emphasis on student assessment and development, task groups, and evaluation. Mr. Healy (F)

**213B. Legal and Ethical Issues in Counseling Psychology.** Prerequisite: course 213A. Ethical and legal codes relevant to psychological services in schools and community; relation of value systems and personality; case studies in implications of personal values in counseling situations.

Mr. Berry (Sp)

**213C. Group Counseling Theory and Process.** Lecture, three hours; discussion, one hour. Prerequisites: courses 213A, 214A, and 214B, or consent of instructor. Group productivity, leadership in groups, social perception, attitude formation, and effect of behavior changes in individuals and groups. Evaluation of social, psychological, and educational principles related to therapeutic experiences of individuals in small groups. Mr. Berry, Ms. Tidwell (W)

**214A. Counseling Theory and Practice.** Alternatives in counseling practice in relation to theories of personality development and functioning, research on effectiveness of counseling, professional issues in counseling, educational aspects of counseling.

Mr. Healy, Mr. Skager (F)

**214B. Advanced Counseling Theory and Practice.** Limited to advanced degree candidates whose major interest is counseling and to selected high school and college counselors. Counseling procedures, educational planning, and methods for helping students handle personal problems that interfere with school progress; critical evaluation of procedures.

Mr. Healy (W)

**214C. Principles of Career Planning.** Examination of nature of careers across ages and ethnic and sexual groups in order to determine implications for career planning in postindustrial society.

Mr. Healy (Sp)

**214D. Career Counseling.** Depth study of current theories, principles, problems, and practices of career counseling. Mr. Berry, Mr. Healy (Sp)

**214E. Substance Abuse and Addiction.** Theory and practice of prevention and intervention in substance abuse and addiction from perspective of counseling and educational practice.

Mr. Skager (W)

**214F. Student Problems: Social Context.** Designed to assist students in understanding the configuration of social forces that lead to student dysfunctions. Consideration of a number of contemporary social problems that are of concern to school counselors, educators in general, and behavioral scientists.

Mr. Skager, Mr. Weinberg (Sp)

**M215. Personality, Motivation, and Attribution.** (Same as Psychology M239.) Current research and theory relating personality variables (e.g., attributional styles, self-esteem) to motivational concerns such as persistence and intensity of behavior. Perceived causes of outcomes in achievement and affiliative domains.

**216. Counseling Models from a Cross-Cultural Perspective.** Prerequisite: course 213A or consent of instructor. Research related to psychological, educational, and sociological characteristics of counseling clients within a cross-cultural perspective and implications for counseling models. Evaluation of counseling practices through analysis of school, community, and mental health settings. Mr. Berry, Ms. Tidwell (F)

**M217A. Social Development and Education.** (Formerly numbered 217A.) (Same as Psychology M242D.) Biological and familial, school, and other influences on the child; development in context of current research and theoretical models; consideration of theoretical and methodological research on family, peer group, and school; application of developmental theory and research to educational practice.

Ms. Howes (W)

**217B. Cognitive Development and Education.** Prerequisite: graduate standing. Critical review of theories and research in cognitive development, focusing on work of Piaget and Vygotsky, and relation of this work to issues in educational practice. Mr. Saxe (F)

**M217C. Personality Development and Education.** (Same as Psychology M245.) Review of research and theory of critical content areas in personality development that bear on school performance: achievement motivation, self-concept, aggression, sex differences, empathy, and other social behaviors; review of status of emotional behavior in personality theory and development. Ms. Dorr (Sp)

**217D. Language Development and Education.** Research and theory on how children develop their first language; sociolinguistic and psycholinguistic issues in preschool and primary years; bilingual and dialectical issues. Ms. Valadez

**217F. Human Development and the Educational Process.** Cognitive and social development; cultural, family, peer, and schooling influences on human development; application of developmental theory and research to educational practice.

Ms. Howes, Mr. Saxe, Ms. Stipek (W)

**M217G-M217H-M217I. Child Abuse and Neglect (2 units, 2 units, 1 unit).** (Same as Community Health Sciences M245A-M245B-M245C, Dentistry M300.5A-M300.5B-M300.5C, Law M281A-M281B, Medicine M290A-M290B, Nursing M290A-M290B-M290C, and Social Welfare M290E-M290F-M290G.) Course M217G is prerequisite to M217H, which is prerequisite to M217I. Intensive interdisciplinary study of child physical and sexual abuse and neglect, with lectures by faculty members of the Schools of Dentistry, Education, Law, Medicine, Nursing, and Public Health and the Department of Psychology, as well as by the relevant public agencies.

**218A. Multiple Regression Analysis.** Prerequisite: course 210B. Regression-based techniques for analyzing quantitative data; multiple regression methods, multiple correlation, partial correlation; introduction to general linear model, with direct application to educational inquiry. Ms. Webb and the Staff (W,Sp)

**218B. Advanced Quantitative Models in Non-experimental Research: Multilevel Analysis.** Prerequisites: course 218A or equivalent, consent of instructor. Examination of conceptual, substantive, and methodological issues in analyzing multilevel data (i.e., on individuals in organizational settings such as schools, corporations, hospitals, communities); consideration of alternative analytical models. (W)

**218C. Structural Equation Modeling.** Prerequisites: courses 210D, 210E, 218B, or equivalent. Extends path analysis (causal modeling) by considering models with measurement errors and multiple indicators of latent variables. Confirmatory factor analysis, covariance structure modeling, and multiple-group analysis. Identification, estimation, testing, and model building considerations. Mr. Muthén (W)

**218D. Analysis of Categorical and Other Nonnormal Data.** Prerequisites: courses 210D, 210E. Regression analysis with dichotomous and polytomous dependent variables, log-linear modeling, coefficients of association for categorical variables, factor analysis, and structural equation modeling.

**219. Laboratory: Advanced Topics in Research Methodology.** Provides assistance in design of research and interpretation of data to advanced students from other divisions. Coverage of special topics not included in other courses on research methods. (F,W,Sp)

**220A. Inquiry into Schooling: Organization and Change.** Critical analysis of issues in reconstruction of schooling; concepts of function and structure of schooling; organization theory; systems approaches in analysis of organization development and change. Ms. Oakes

**220B. Inquiry into Schooling: Curricular Problems and Policy Issues.** Inquiry into curriculum of schooling. Critical analysis of relationship of curricular decision making to social system and contextual variables.

**221. Computer Analyses of Empirical Data in Education.** Lecture, two hours; laboratory, two hours. Prerequisites: courses 209C (section 1), 210A, or equivalent. Designed to develop conceptual and technical skills needed for designing and executing empirical research utilizing statistical packages. Each student conducts two original studies. Equal emphasis on techniques of data analysis and interpretation of results. Mr. Astin (W)

**M222A. Laboratory for Naturalistic Observations: Developing Skills and Techniques.** (Same as Anthropology M236Q, Psychiatry M235, and Psychology M295.) Skill of observing and recording behavior in natural settings, with emphasis on field training and practice in observing behavior. Discussion of some uses of observations and their implications for research in social sciences. Students expected to integrate observational work into their current research interests. Mr. Levine (W)

**222B. Design Issues in Naturalistic Research.** Lecture, three hours; discussion, one hour. Prerequisite: course M222A or consent of instructor. Issues in conceptualization and design of naturalistic research studies, particularly within educational settings. Specific topics include problem definition and focus, units of observation, sampling, controlled comparisons and meaningful variation, and reliability/validity concerns in observational research. Special attention to ethnographic studies.

**222C. Qualitative Data Reduction and Analysis.** Lecture, two hours; discussion, two hours. Prerequisite: course M222A or 222B or consent of instructor. Theory of and practice in qualitative data reduction and analysis. Discussion of data storage and retrieval systems, data manipulation techniques such as typologies and attribute spaces, and specific analytic perspectives. Interfacing qualitative and quantitative data. Mr. Levine (F)

**223. Aesthetics and the Curriculum.** Lecture, two hours; discussion, two hours. Examination of various ideas and theories in aesthetics and application of these in schooling contexts. Mr. Weinberg

**224. Problems and Issues in Bilingual and Multicultural Education.** Introduction to development and implementation of bilingual and multicultural programs in the U.S. Analysis of program goals, models, typologies, and effectiveness. Ms. Valadez

**225A. Issues in Education of Exceptional Individuals.** Prerequisite: graduate standing. Analysis of major research regarding contemporary trends, issues, and programs for the exceptional; consideration of commonalities and differences among exceptional individuals. Ms. Kasari (F)

**225B. Advanced Issues in Education of Exceptional Individuals.** Prerequisite: consent of instructor. Synthesis of developmental and educational theory relevant to study of exceptional individuals, including consideration of historical context of current research and applied issues in special education. Mr. Hodapp (F)

**227A. Research on Learning Characteristics of Exceptional Individuals.** Prerequisite: course 225B. Overview of research and theory regarding learning characteristics of exceptional individuals and discussion of application of this work to educational practice. Mr. Artilles, Ms. Kasari (Sp)

**227B. Research on Cognitive and Language Characteristics of Exceptional Individuals.** Prerequisite: course 227A. Review of empirical and theoretical literature regarding language and cognitive development of exceptional individuals; focus on intervention programs developing language and cognition. (W)

**227C. Research on Behavioral and Social Characteristics of Exceptional Individuals.** Prerequisite: course 227B. Analysis of social and emotional development of exceptional individuals and development of social competence in special education programs. Mr. Hewett (F)

**228. Observation Methods and Longitudinal Studies.** Lecture, two hours; discussion, two hours. Prerequisites: course 210A or equivalent, consent of instructor. Design of observational and longitudinal studies. Formulation of study conclusions concerning influences on children's development. Conduct of observations; processing and analysis of data. Use of portable computers for recording observations. Mr. Blurton Jones

**229. Special Studies on Educational Policy and Planning.** Research on selected topics in fields of administration, policy, curriculum, and teaching studies and on conceptualization of hypotheses and research programs on division topics and issues. Mr. Bruno, Ms. Oakes, Ms. Wells

**232. Instructional Analysis.** Prerequisite: consent of instructor. Theoretical and empirical analysis of instructional variables as they relate to diverse types of instructional strategies. Development of skill in techniques of conducting instructional research. Ms. Baker (W)

**234. Education and Social Stratification.** Relationship between education and components of social stratification, including occupations and earnings. Competing theories used in studying education and social stratification; relevant research. Conclusions regarding individual career decisions, social policies, and theories of society.

**235. Education and Work.** Review of theoretical and empirical literature on issues concerning interface of education and work. Review of alternatives in school-to-work transition of youth and appraisal of present vocational training and manpower development programs.

**236. Human Abilities.** Prerequisite: course 210B or equivalent. Nature, development, and measurement of intellectual abilities and their relations to learning and instruction. Review of research and theory of models of ability and test development. Ms. Webb

**238. Cross-National Analysis of Higher Education.** Comparative study of national systems of higher education: their division of work, basic values, structures of authority, modes of national integration, and types of change. (Sp)

**239. Organization and Governance of Educational Systems.** Academic organizations, precollegiate and postsecondary, are most appropriately studied as complex, professionalized organizations. Emphasis on characteristics of educational institutions and systems as organizations: environmental relations, governance structures, processes, and patterns of decision making and policy-making. Mr. Koltai, Ms. McDonough (Sp)

**240. Cultural Foundations of U.S. Education: Policy and Practice.** Prerequisite: graduate standing or consent of instructor. Cultural foundations of persistent and troubling issues and tensions in American educational policy-making and practice. Ms. Oakes

**241. Research Methodology in School Administration.** Prerequisite: consent of instructor. Examination of research problems and strategies in school administration. Mr. Erickson

**242. Economic Analysis for Educational Policy and Planning.** Prerequisite: graduate standing. Introductory course focusing on concepts and quantitative methods from economics, statistics, and operations research applied to educational policy and planning issues. Instruction in programming microcomputers for instruction (BASIC) and management information systems (dBASE). Mr. Bruno

**C244. Economics of Education.** Introductory course in microeconomic and macroeconomic techniques applied to education. Methodologies illustrated principally in context of current issues in American education. Concurrently scheduled with course C191C. Mr. Bruno, Mr. Jamison (W)

**245. Seminar: Cost-Benefit Analysis in Education.** Conceptual and theoretical underpinnings of cost-benefit analysis, critical analysis of current cost-benefit studies, and procedures for conduct of cost-benefit studies. Mr. Jamison (Sp)

**246A. Seminar: Mathematical Modeling in Educational Policy Analysis.** Prerequisite: course 242 or consent of instructor. Stochastic and deterministic modeling techniques as applied to educational policy and planning issues. Mathematics review and instruction in use of MPS (Mathematical Programming System) and development of software for Monte Carlo computer simulation studies in education. Mr. Bruno

**246B. Seminar: Operations Research — Systems Analysis in Education.** Prerequisite: course 242 or consent of instructor. Application of advanced mathematical modeling techniques of operations research to educational policy and planning. Design of computer-based management information systems in education using dBASE. Mr. Bruno

**248. Seminar: Perspectives on Lifelong Learning.** From interdisciplinary perspective, lifelong learning is studied theoretically and as an area of educational research, policy, and practice. Conceptual distinctions among major proponents of lifelong learning and implications for schooling.

**249A. Seminar: National Evaluations of Postsecondary Education.** Critical review of national evaluation studies of higher education, including programs of general education and professional and graduate school programs; emphasis on design, methodology, and interpretation of large-scale evaluation studies. Mr. Astin

**249B. Seminar: Institutional Research and Program Evaluation.** Critical review of institutional evaluation studies, with consideration of scope of information needed for various purposes and problems of interrelating this information to appraise overall institutional functioning and effectiveness. Mr. Trent

**251A. Seminar: Philosophy of Education, Epistemology.** Prerequisite: consent of instructor. (W)

**251C. Seminar: Philosophy of Education, Social Science Problems — Methodological Perspectives.** Prerequisite: course 206C or consent of instructor. (Sp)

**251D. Seminar: Philosophy of Education, Problems in Ethics and Values.** Prerequisite: course C206D or consent of instructor.

**251E. Seminar: Philosophy of Education, Selected Issues.**

**252A. Seminar: Educational Organizations.** Prerequisite: course 208A or consent of instructor.

**252B. Seminar: Education and Social Change.** Prerequisite: course 208A or consent of instructor. (Sp)

**M252C. Human Resources and Economic Development.** (Formerly numbered 252C.) (Same as Community Health Sciences M236.) Examination, in context of the developing countries, of interactions among economic development, population growth, levels of health and nutritional status, and educational investments. Mr. Jamison (Sp)

**253A. Seminar: Current Problems in Comparative Education.** (Sp)

**253B. Seminar: African Education.** Prerequisite: graduate standing or consent of instructor. Contemporary issues in African educational systems, including questions of access and equity, quality and efficiency, relevance and responsiveness, links between schools and communities, and policy and practice in education.

**253C. Seminar: Asian Education.** Mr. Hawkins (Sp)

**253D. Seminar: Latin American Education.** Mr. Torres (W)

**253E. Seminar: European Education.** Mr. Rust

**253F. Seminar: Education in Revolutionary Societies.** Multidisciplinary and comparative study of socialist educational theory examined through writings of Marx, Lenin, Mao, and others. Implementation of this theory in specific case studies, along with comparative assessments of nonsocialist nations. Mr. Hawkins, Mr. Rust

**253G. Seminar: The Asian American and Education.** Basic issues and topics related to Asian Americans in the field of education. Examples of issues and topics include Asian Americans and the community, socioeconomic status, education-to-work transition, language and culture question. Mr. Nakanishi (F)

**253H. Seminar: The Chicano/Hispanic and Education.** Basic issues and topics related to the Chicano and other Hispanic groups in education. Review of literature on specific educational levels and Chicano/Hispanic student progress (e.g., early childhood, elementary, higher education; specific topics: assessment, access, tracking, segregation; implications for schooling). Mr. Solorzano (Sp)

**235I. Education and Social Change in the Middle East and Islamic World.** Critical and analytic examination of historical and current role of traditional and modern (Western) education in affecting social, political, and economic changes in countries of the Middle East and Islamic world (including Pacific Rim, South and Central Asia). Mr. Rust and the Staff (W,Sp)

**254. Seminar: History of Education.** Prerequisite: course M201C. Study of current movements in historiography of education and critical reading of texts in history of education. Mr. S. Cohen

**255A-255B-255C. Seminar: Special Topics.** Prerequisite: consent of instructor. May be repeated for credit. **255A.** Measurement; **255B.** Design; **255C.** Data Analysis.

**256A. Seminar: Special Topics in School Learning.** Prerequisite: consent of instructor. Ms. Graham, Mr. Wittrock (F)

**256B. Seminar: Special Topics in Development.** Prerequisite: consent of instructor.

**257. Seminar: Research in Counseling Psychology.** Prerequisite: consent of instructor. In-depth analysis of selected research approaches/areas in counseling psychology. Mr. Skager and the Staff

**258A. Seminar: Problems in Instructional Research.** Mr. Levine, Mr. Wittrock (Sp)

**258B. Seminar: Problems in Instructional Development.** (Sp)

**259A. Seminar: Research on Characteristics of Students.** Analysis of concepts, methodology, and conclusions or implications underlying and resulting from major research on student characteristics. Emphasis on differential impact of higher education on student and faculty development.

Mr. Pavel, Mr. Trent (F)

**260. Seminar: Principles of Curriculum and Instruction.**

**261E. Seminar: Education and Work.**

Mr. Wilms (Sp)

**261F. Seminar: Cognitive and Personal Development of College Students.** Examination of cognitive development of college students; issues of personal and social development, including leadership, and interpersonal relations and skills.

Ms. Astin

**262A. Seminar: The Social Studies.**

Ms. Gutierrez

**262B. Seminar: Reading.**

Ms. Gutierrez

**262F. Seminar: Research Topics in Bilingual/Multicultural Education.** Prerequisite: consent of instructor.

Ms. Valadez

**262I. Seminar: Contemporary Issues in Education and Work.**

Mr. Wilms

**262J. Seminar: Economic Education.**

**263. Seminar: Higher Education.**

**264. Seminar: Teacher Education.** Prerequisite: consent of instructor. Research, issues, and practices in preservice and in-service teacher preparation, evaluation, and certification. Social, philosophical, and methodological issues and current trends in America and abroad. Opportunities to observe, participate in, and discuss teacher education programs.

(W)

**267. Seminar: Educational Technology.**

Ms. Baker, Ms. Dorr (F)

**271A. Proseminar: Educational Psychology (2 units).** Introduction to a variety of research issues in the field of educational psychology, including topics related to human development, learning and instruction, counseling, and special education, and to different methodological approaches used to study them.

S/U grading. Ms. Stipek

**272. Case-Study Research in Education Policy and Practice.** Use of case-study methods in education research, providing opportunities for applying methodological skills to actual case-study research projects. Focus on single and multiple case studies that investigate issues in education policy and practice.

Ms. Oakes, Ms. Wells

**273A. Structure and Dynamics of Educational System.** Lecture, two hours; discussion, two hours. Overview of school administration, teaching, curriculum, and policy studies. Focus on American education as an institutional system wherein federal, state, and local policy, school administration, curriculum theory and design, and teaching are inextricably connected in the delivery of education.

Mr. Bruno, Ms. Oakes, Mr. Weinberg

**280A. Seminar: Selected Topics in Special Education (2 to 6 units).** Prerequisite: consent of instructor. Focus on research and clinical problems in special education. Introduction to a range of clinical services and research strategies. Exploration of current topics in the field.

Mr. Artilles, Mr. Hodapp, Ms. Kasari (Sp)

**280B. Seminar: Exceptional Individuals.** Prerequisite: doctoral standing.

Ms. Kasari (F,W,Sp)

**M281A. Seminar: Human Behavioral Ecology.** (Same as Anthropology M229A and Psychiatry M279A.) Lecture, one hour; discussion, three hours. Prerequisite: consent of instructor. Examination of predictive models from animal behavioral ecology used to study human diet and subsistence; settlement patterns and territoriality; sharing and helping; reproduction and mortality. Comparison with other economic and ecological approaches in anthropology.

Mr. Blurton Jones

**M281B. Seminar: Reproduction, Families, and Parenting.** (Same as Anthropology M229B and Psychiatry M279B.) Prerequisite: consent of instructor. Guided forum for graduate students to discuss and broaden their studies of human reproduction and child rearing from varied viewpoints. Representation and debate of theories, questions, and methods from social and biological sciences.

Mr. Blurton Jones

**M281C. Seminar: Selected Topics in Human Ethology.** (Same as Anthropology M229C and Psychiatry M279C.) Lecture, one hour; discussion, three hours. Prerequisite: consent of instructor. Consideration of appropriateness and contributions of using animal behavior methodology in study of human behavior. Analysis: describing and recording behavior; causation; development, especially longitudinal studies; adaptation; evolutionary origins.

Mr. Blurton Jones

**296A-296F. Seminars: Research Topics in Education (2 units each).** Discussion, three hours. Prerequisite: consent of instructor. Advanced study and analysis of current topics in education. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading.

**299A-299B-299C. Research Practicum: Education (4 to 8 units each).** May be repeated for credit.

(F,W,Sp)

**300. Dissertation Writing Workshop: Interdivisional Seminar.** Lecture, one hour; discussion, two hours; laboratory, one hour. Prerequisite: consent of instructor. Limited enrollment. Introduction for doctoral candidates to dissertation writing as a genre that can be analyzed or broken down with its constituent parts and, vice versa, which is constructed out of materials that can be identified and analyzed.

S/U grading. Mr. S. Cohen (W)

**309A. Methodologies in Teaching Bilingual and English Language Development (3 units).** Lecture, two hours; discussion, one hour. Prerequisite: credential program standing. Pedagogy for bilingual and English development instruction. Topics include legal foundations of bilingual programs, educational issues, organizational approaches, and communicative approach; discussion of instructional strategies and activities.

(F,W)

**309B. Language Development in Content (3 units).** Lecture, two hours; discussion, one hour. Prerequisite: credential program standing. Discussion of competencies needed by all content area teachers of limited English-proficient students, including strategies for teaching in and through English. Designed to assist classroom teachers in developing their knowledge and necessary skills to assure English language learners access to core curriculum.

**310. Professional Communication for Graduate Students in Education (2 units).** Prerequisite: consent of instructor. Writing workshop on students' papers in progress to ensure professional standards. Analysis and group discussion of rhetorical and stylistic principles. May be repeated once.

S/U grading.

**311. Principles and Methods of Computer Literacy and Classroom Application — K-12 (2 units).** Lecture, one hour; laboratory, 30 minutes. Prerequisite: consent of department. Introduction to use of computers in educational environment. Discussion of issues on why and how to integrate computers into curriculum and hands-on practice which allows students to demonstrate skills discussed.

S/U grading. (W,Sp)

**312. Basic Principles of Curriculum and Instruction.** Prerequisite: consent of instructor. Analysis and practice of basic principles and concepts for planning, conducting, and evaluating units of curriculum and instruction. Emphasis on study and utilization of a variety of instructional strategies and their application in elementary and secondary schools.

(F)

**313A-313B. Principles and Methods for Teaching Elementary Mathematics (6 to 12 units each).** Prerequisite: consent of instructor. Course 313A is prerequisite to 313B. Problem-solving strategies and geometry for elementary teachers. Use of concrete materials, computers, calculators, cooperative learning, and content for elementary teachers.

S/U grading. Ms. Hakansson (Sum)

**313C-313D. Principles and Methods for Teaching Secondary Mathematics (6 to 12 units each).** Prerequisite: consent of instructor. Course 313C is prerequisite to 313D. Problem-solving strategies in algebra, geometry, and trigonometry for secondary mathematics teachers. Use of concrete materials, computers, calculators, cooperative learning, and content for secondary teachers.

S/U grading. Ms. Hakansson (Sum)

**314A-314B. Principles and Methods for Curriculum, Instruction, and Leadership in Mathematics (6 to 12 units each).** Prerequisite: consent of instructor. Course 314A is prerequisite to 314B. Problem solving, curriculum development, implementation of California Mathematics Framework, strategies for encouraging women and minorities into mathematics, and leadership development.

S/U grading. Mr. Baker, Ms. Priselac (Sum)

**315A-315B. Principles and Methods for Teaching Reading for Multiple Subject Instruction (2 units each).** Prerequisite: consent of instructor. Course 315A is prerequisite to 315B. Reading instruction in elementary schools. Analysis of reading problems and programs; study of relationships between language/culture/cognition and reading. Examination and development of instructional programs; analysis and practice of alternative instructional methods. Observation and participation in schools.

S/U grading. (F,W)

**316A-316B. Principles and Methods for Teaching Reading for Single Subject Instruction (2 units each).** Prerequisite: consent of instructor. Course 316A is prerequisite to 316B. Reading instruction in secondary schools. Analysis of reading problems and programs; study of relationships between language/culture/cognition and reading. Examination and development of instructional programs; analysis and practice of alternative instructional methods. Observation and participation in schools.

S/U grading. (F)

**317A. Principles and Methods for Teaching Elementary Science — K-2 (6 to 12 units).** Prerequisite: consent of instructor. Conceptual teaching of science and incorporation of science process skills for grades K-2. Demonstrations, hands-on experiences, and development of teaching materials.

**317B. Principles and Methods for Teaching Elementary Science — 3-4 (6 to 12 units).** Prerequisite: consent of instructor. Conceptual teaching of science and incorporation of science process skills for grades 3-4. Demonstrations, hands-on experiences, and development of teaching materials.

**317C. Principles and Methods for Teaching Elementary Science — 5-6 (6 to 12 units).** Prerequisite: consent of instructor. Conceptual teaching of science and incorporation of science process skills for grades 5-6. Demonstrations, hands-on experiences, and development of teaching materials.

**318A-318B. Principles and Methods for Multiple Subject Instruction (2 units each).** Prerequisite: consent of instructor. Course 318A is prerequisite to 318B. Examination and development of instructional programs; analysis and practice of alternative instructional methods. Focus on subjects commonly taught in elementary schools. Observation and participation in schools.

S/U grading. (F,W)

**319. Principles and Methods for Teaching Composition — 1-12 (6 to 12 units).** Prerequisite: consent of instructor. Drawing from current research and theory, participating teachers expand their repertoire of techniques for teaching writing and literature. Focus on drawing on expertise of classroom teachers and becoming teacher-writers in addition to writing teachers.

S/U grading. Ms. Peitzman, Ms. Williams (Sum)

**320A-320B. Principles and Methods for Single Subject Instruction (2 units each).** Prerequisite: consent of instructor. Course 320A is prerequisite to 320B. Examination and development of instructional programs; analysis and practice of alternative instructional methods. Focus on subjects commonly taught in secondary schools. Observation and participation in schools.

S/U grading. Ms. Peitzman (F,W)

**321A. Principles and Methods for Teaching Physics — 7-12 (6 to 12 units).** Prerequisite: consent of instructor. Conceptual teaching of physics and incorporation of science process skills for grades 7-12. Demonstrations, hands-on experiences, and development of teaching materials. S/U grading.

**321B. Principles and Methods for Teaching Chemistry — 7-12 (6 to 12 units).** Prerequisite: consent of instructor. Conceptual teaching of chemistry and incorporation of science process skills for grades 7-12. Demonstrations, hands-on experiences, and development of teaching materials. S/U grading.

**321C. Principles and Methods for Teaching Earth and Space Sciences — 7-12 (6 to 12 units).** Prerequisite: consent of instructor. Conceptual teaching of Earth and space sciences and incorporation of science process skills for grades 7-12. Demonstrations, hands-on experiences, and development of teaching materials. S/U grading.

**321D. Principles and Methods for Teaching Life Sciences — 7-12 (6 to 12 units).** Prerequisite: consent of instructor. Conceptual teaching of life sciences and incorporation of science process skills for grades 7-12. Demonstrations, hands-on experiences, and development of teaching materials. S/U grading.

**322A. Principles and Methods for Using Computers in Science Instruction — K-12 (6 to 12 units).** Prerequisites: courses 317A, 317B, and 317C, or 321A, 321B, 321C, and 321D, consent of instructor. Use of computers and current proven computer software to teach science content and process conceptually at all grade levels. Development of teaching units. S/U grading.

**322B. Principles and Methods for Peer Leaders in Science Classrooms — K-12 (6 to 12 units).** Prerequisites: courses 317A, 317B, and 317C, or 321A, 321B, 321C, and 321D, consent of instructor. Develops qualities in teachers necessary for leadership positions in science education at all grade levels. Exploration of leadership roles; leadership behavior practice. S/U grading.

**323. Teacher-Researcher: Principles of Classroom Research (6 to 12 units).** Prerequisite: consent of instructor. Guidance of teachers conducting research in their language arts classroom, K through community college, with emphasis on naturalistic research techniques, research relevant to proposed studies, research conducted by other teacher-researchers, publication of findings. S/U grading.

Ms. Peitzman

**324A. Observation and Participation: Multiple Subject Instruction (2 to 6 units).** Prerequisite: consent of instructor. Six hours per week of observation and participation in classrooms in which multiple subjects are taught, normally in elementary schools. Preparation for supervised teaching. S/U grading. (F)

**324B. Supervised Teaching: Multiple Subject Instruction (2 to 10 units).** Prerequisites: course 324A, consent of instructor. Practice teaching under daily supervision of a teacher in a classroom in which multiple subjects are taught, normally in an elementary school. S/U grading. (W)

**324C. Supervised Teaching: Multiple Subject Instruction (2 to 10 units).** Prerequisites: course 324B, consent of instructor. Advanced practice teaching under daily supervision of a teacher in a classroom in which multiple subjects are taught, normally in an elementary school. S/U grading. (Sp)

**324D. Supervised Teaching: Multiple Subject Instruction (2 to 10 units).** Prerequisites: course 324C, consent of instructor. Advanced practice teaching under daily supervision of a teacher in a classroom in which multiple subjects are taught, normally in an elementary school. S/U grading.

**326. Principles and Methods for Teaching English/Language Arts — K-12 (6 to 12 units).** Prerequisite: consent of instructor. Emphasis on teaching a literature-based language arts program incorporating process skills, modeling, hands-on experiences, and development of teaching and teacher-training materials. S/U grading.

**327. Principles and Methods for Teaching Spanish Effectively (6 to 12 units).** Prerequisite: consent of instructor. Emphasis on proficiency-based foreign language teaching methods incorporating language assessment skills, modeling, hands-on experiences, and development of teaching and teacher-training materials. S/U grading.

**328. Principles and Methods for Integrating Content and Language Instruction (6 to 12 units).** Prerequisite: consent of instructor. Theoretical rationale for integrating language teaching and content instruction for ESL students at intermediate or advanced level in English. Various Sheltered English techniques described, modeled, and used in hands-on workshops involving peer and expert coaching. S/U grading.

**329. Integrating the Elementary School Curriculum — K-6 (6 to 12 units).** Prerequisite: consent of instructor. Open to credentialed teachers. Interdisciplinary strategies emphasizing reading and writing in the content areas, relating science and mathematics, and promoting enrichment follow-up activities in other disciplines such as social studies and art. S/U grading.

**330A. Observation and Participation: Single Subject Instruction (2 to 6 units).** Prerequisite: consent of instructor. Six hours per week of observation and participation in classrooms in which single subjects are taught, normally in secondary schools. Preparation for supervised teaching. S/U grading. (F)

**330B. Supervised Teaching: Single Subject Instruction (2 to 10 units).** Prerequisites: course 330A, consent of instructor. Practice teaching under daily supervision of a teacher in a classroom in which a single subject is taught, normally in a secondary school. S/U grading. (W)

**330C. Supervised Teaching: Single Subject Instruction (2 to 10 units).** Prerequisites: course 330B, consent of instructor. Advanced practice teaching under daily supervision of a teacher in a classroom in which a single subject is taught, normally in a secondary school. S/U grading. (Sp)

**330D. Supervised Teaching: Single Subject Instruction (2 to 10 units).** Prerequisites: course 330C, consent of instructor. Advanced practice teaching under daily supervision of a teacher in a classroom in which a single subject is taught, normally in a secondary school. S/U grading.

**331. History and Geography Themes in U.S. History and World History Courses (6 to 12 units).** Prerequisite: consent of instructor. Emphasis on new curricular reform elements written into the 1987 California Framework. Lectures, seminars, and demonstrations on fundamental issues in history, with examples derived from the History/Social Science Framework. S/U grading.

**332. The Immigrant Experience (6 to 12 units).** Prerequisite: consent of instructor. Readings, films, interviews, and field trips to foster understanding of composition, origins, landscape expression, and ambitions of Los Angeles' new populations, since this city is the destination of many immigrant groups entering the U.S. S/U grading.

**360. Teaching Clinical Practicum.** Discussion, two hours; fieldwork, two hours. Prerequisite: consent of instructor and director of Teacher Education Laboratory. Seminar and directed field experience. Examination and analysis of different methods of subject matter instruction. (F,W,Sp)

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**400. Foundations of Education Policy Analysis.** Prerequisite: consent of instructor. Principles of decision making and policy formation, implementation, and analysis in context of the educational system. Critical perspectives include effectiveness and equity of educational delivery systems and programs, and complex nature of educational governance in contemporary America. Mr. Bruno, Ms. Wells

**401. Structure and Functions of Schools as Complex Organizations.** Prerequisite: consent of instructor. Critical analysis of alternative assumptions about organizations, how they function, and why people in organizations behave as they do. Application to special circumstances of schools and to contemporary issues and problems in school leadership, improvement, and reform. Ms. Beck, Mr. Erickson

**402. Curriculum Principles and Practices.** Prerequisite: consent of instructor. Critical analysis of major concepts, underlying assumptions, policy issues, and processes in development and implementation of curriculum in the educational setting. Problems in formulation of purposes, selection of learning experiences, organization of curriculum, and curriculum evaluation. Ms. Beck, Ms. Oakes, Mr. Weinberg

**403. Teaching: Principles and Problems.** Prerequisite: consent of instructor. Current knowledge concerning good teaching and theoretical/conceptual, empirical, and/or ideological bases for these assertions. Alternative models of classroom teaching, their assumptions, and evidence of worth. Current policy issues and problems in generating and sustaining effective teaching.

**409A. Language Structure, Acquisition, and Development (3 units).** Lecture, two hours; discussion, one hour; ethnographic study. Prerequisite: credential program standing. Theoretical foundations of language structure and first and second language acquisition, with focus on major themes of current research that provide a framework for schooling of limited English-proficient students.

Mr. Ariles, Ms. Gutierrez, Ms. Valadez

**409B. Language Structure and Acquisition (3 units).** Lecture, two hours; discussion, one hour; ethnographic study. Prerequisite: credential program standing. Rationale for bilingual/English language acquisition and development programs. Topics include historical and current theories and models of language programs that have implications for second language development and pedagogy. Consideration of psychological factors affecting first and second language development.

Mr. Ariles, Ms. Gutierrez, Ms. Valadez

**410A-410B. Fundamental Issues in Higher Education, Work, and Adult Development.** Course 410A is prerequisite to 410B. Two-course sequence designed to orient new students to issues, ideas, and literature that constitute the division. Emphasis on underlying social and political issues that shape higher education, work, and adult development.

Ms. McDonough (W,Sp, 410B)

**411A. Introduction to Educational Evaluation.** Introduction to systematic evaluation as it applies to appraising educational programs. Consideration of program evaluation as means of improving quality of educationally relevant decisions. Mr. Alkin

**411B. Procedural Problems in Evaluation.** Assessment methodologies appropriate for evaluation problems. Writing evaluation proposals, developing program monitoring procedures, selecting appropriate evaluation design strategies, coping with ethical considerations in evaluation, framing the decision context, and reporting evaluation results.

Mr. Alkin, Mr. Burstein

**412A. Criterion-Referenced and Norm-Referenced Test Construction.** Prerequisite: course 211A. Construction of criterion- and norm-referenced assessment instruments. Appropriateness of different assessment devices considered in relation to research, development, and evaluation.



**412B. Intersecting Dimensions of Teaching and Testing.** Prerequisite: consent of instructor. Designed to develop acquisition of insights and skills based on symbiotic relationship between assessment and instruction when high-stakes educational achievement tests are used. Ms. Hunter

**413A-413B. Methodology for Primary Language Instruction (3 units each).** Lecture, two hours; discussion, one hour. Prerequisite: credential program standing. Conducted in Spanish. **413A.** Required for BCLAD. Characteristics of bilingual programs, instructional delivery in bilingual classrooms, and factors to consider in selection and use of primary language materials. **413B.** Cultural similarities and differences among Spanish speakers in California. Causes for patterns of immigration into the U.S., manifestations of culture, and contributions of Spanish speakers to the U.S. and California.

Mr. Artilles, Ms. Gutierrez, Ms. Valadez

**415A. Assessment in Counseling Psychology.** Prerequisites: courses 210A, 211A. Overview of rationale for and procedures used by counseling psychologists for assessing individuals in a multicultural society. Emphasis on standardized cognitive assessment instruments and specialized techniques for diagnosis, evaluation, and development of counseling strategies for at-risk populations. Ms. Tidwell

**415B. Advanced Assessment in Counseling Psychology.** Prerequisites: course 415A, consent of instructor. Advanced course in assessment for counseling psychologists. Survey and demonstration of instruments of achievement, affective, and personality appraisal, with emphasis on testing and interplay between assessment and psychological functioning for reducing risks of failure in academic, personal, and social areas. Ms. Tidwell

**420A. Principles of Curriculum.** Critical examination of basic concepts underlying determination of objectives, selection and organization of learning experiences, and evaluation process.

**421A. Programs and Research in Early Childhood Education.** Prerequisite: one course from development series. Examination of child care programs and research in early childhood education, including review of relation of research in developmental psychology and education to goals of early childhood education and day care. Ms. Howes

**421C. Research and Evaluation of Early Childhood Programs.** Prerequisite: course 421A or equivalent or consent of instructor. Critical review of evaluation models (e.g., summative, formative, implementation) and their utility for improving and evaluating quality of child-related programs.

**421D. Parents and Community Agents in Child Development.** Prerequisite: one course from development series. Critical review of theoretical basis and effectiveness of training programs for parents of young and elementary school-aged children; relation of preschool parent programs to family development and role of programs in the community.

Ms. Feshbach

**421F. Issues in Application of Child Development and Educational Research to Social Policy.** Relationships among policymakers and social scientists in development, implementation, and evaluation of policies affecting children and their families. Students learn to design and conduct interviews, analyze legislative documents, and present analyses to policymakers. Ms. Dorr, Ms. Feshbach, Ms. Stipek

**422. Inquiry into Schooling: Basic Issues.** Critical examination of basic issues and problems in organization and reconstruction of precollegiate schooling. Consideration of historical development and changing functions of schooling in American society; school organization; schooling alternatives; problems in management of educational change. Ms. Oakes

**423. The Humanistic Curriculum.** Consideration of philosophical and cultural foundations of humanistic curricular strategies. Review of techniques and procedures of affective education with a view to their place in overall theory of teaching and learning. Mr. Weinberg



**424A. Social Studies in the Curriculum.** Advanced study in social studies curriculum development; problems in defining objectives and organizing single and multidisciplinary programs; critical review of literature on cognitive and affective learning in social science, with emphasis on experimental study of instructional programs.

**424B. Reading in the Curriculum.** Prerequisite: course 210A. Study of reading curricula and instructional procedures, with emphasis on rationale and research underlying their development and research comparing their effectiveness. Ms. Gutierrez

**424C. Language in the Curriculum.** Advanced study in school language curriculum; application to improvement of curriculum in the field.

Ms. Gutierrez

**424G. Curriculum Design for Bilingual Education.** Prerequisite: consent of instructor. Advanced study of curriculum design for bilingual educational programs. Philosophical basis for bilingual programs; theories of learning and instruction applied to bilingual learner; language assessment; development of instructional component; program evaluation. Ms. Valadez

**431A. Administration in Higher Education.** Overview of college and university administration and introduction to policy research and analysis in postsecondary institutions. Case studies of administrative problems, policies, and practices. Management information systems, resource allocation, and issues related to responsibility, authority, and participation in administrative decisions. Mr. Koltai and the Staff

**431B. Curriculum and Instruction in Higher Education.** Principles of curriculum and instruction in postsecondary programs. Theory and practices in goal setting, testing, media selection, and related instructional responsibilities. Preparing to teach college-level students. Mr. A. Cohen

**431C. Innovative Forms and Practices in Higher and Continuing Education.** New institutional forms (e.g., external degree programs and other nontraditional approaches to higher education, neighborhood learning centers, and peoples' colleges). Methodological innovations such as computer-assisted instruction, credit by examination, and independent study. Mr. A. Cohen, Mr. Wilms (W)

**432. Seminar: Professional Topics in Higher Education.** Ms. Astin and the Staff

**433A. Instructional Product Development.** Prerequisite: consent of instructor. Examination of procedures employed in systematic development of instructional products. Students acquire competencies associated with those procedures. Ms. Baker, Ms. Dorr (W)

**433B. Technological Development in Educational Media.** Prerequisite: course 433A. Theory, current problems, and anticipated trends in instrumentation and systems development for instructional applications and research, including computer-aided instruction, communication satellites, and other advanced systems; theory and laboratory practice with instrumentation in educational research.

Ms. Baker, Ms. Dorr (Sp)

**437A. Principles of Curriculum in Economic Education.** Theories, principles, and concepts related to understanding the business and economic system; their application to teaching in secondary school.

**437B. Corporate Educational Programs.** History and scope of corporate training programs; current educational problems in training programs within industry as they are affected by automation and technological change.

**440C. Administration of the Instructional Program.** Examination of current educational problems in society and strategies of their solution through curriculum policy and practice; instructional design and operation; in-service training of teaching staffs.

Mr. Erickson

**441A. Instructional Supervision A.** Analysis of teaching in light of research-substantiated elements of instruction: task analysis, appropriate objectives, principles that increase motivation, rate and degree of learning, retention and transfer, monitoring and adjusting instruction to meet needs and capacities of learners. Ms. Hunter

**441B. Instructional Supervision B.** Prerequisite: course 441A or equivalent. Basic techniques of script-taping instructional episodes, planning teacher conferences through analysis of script-tapes, conducting and analyzing growth-evoking teacher conferences. Conducting mini-lessons to demonstrate elements of good instruction. Ms. Hunter

**442B. Legal Aspects of Educational Management and Practice.** Examination of structures and kinds of law governing educational systems in the U.S.; constitutional dimensions of church/state relations; employees' civil rights and legal aspects of hiring, firing, and negotiating procedures; student attendance, control, and civil rights. Mr. Biegel

**443. Policy Analysis in Education.** Prerequisite: consent of instructor. Overview of political, economic, and legal context of educational policy formation. Included in examination are issues that impact on minorities (e.g., bilingual education, desegregation, affirmative action, role of subdominants in policy-making process).

**444A. Legal Aspects of Access to Public Education.** Prerequisite: course 442B or consent of instructor. Study of access to public education focused on issues of affirmative action, testing, tracking, bilingual/bicultural education, special education, correctional education, and malpractice suits.

**444B. Equality of Educational Opportunity through Desegregation and Finance Case Law.** Prerequisite: course 442B or consent of instructor. Concentrated review of definition of equality of educational opportunity as it is being developed by the courts in cases concerning desegregation and educational finance.

**447. Seminar: Educational Policy and Planning, Special Studies (1 to 4 units).** Prerequisite: consent of instructor.

**448A. Urban School Leadership.** Prerequisite: consent of instructor. Analysis of problems of urban school leadership. Emphasis on changing nature of the urban principalship, with considerable attention to role of other school and community agencies that interact with the urban school leader. Mr. Knox

**448B. Urban Leadership Laboratory.** Prerequisite: consent of instructor. Analysis of and opportunity to practice human and technical skills requisite for success as an urban school leader. Topics include negotiations, conflict resolution, applied computer technology, and effective communication. Activities include gaming, simulation, computer programming, and group dynamics. Mr. Caldwell, Mr. Erickson

**460. Seminar: Special Issues in Evaluation.** Topics and instructors vary each term. Recent emphases included evaluation utilization and cost-effectiveness evaluation. Mr. Alkin

**461A. Seminar: Adult and Continuing Education.** Broad-ranging review of theory and practice in the field, with particular attention to college and university continuing education, but also to programs provided by industry, the professions, public schools, and other institutions. Mr. Freedman (Sum)

**462. Seminar: Community College.** Topics include problems and practices in community college formation, instruction, student flow, administration, and/or evaluation. Mr. A. Cohen, Mr. Koltai

**470A. Seminar: Large Systems and Individual Schools.** Prerequisite: consent of instructor.

Mr. Handler

**470B. Seminar: Educational Government.** Prerequisite: consent of instructor.

Mr. Handler

**481. Knowledge and Inquiry in the Classroom.** Prerequisite: consent of instructor. Logical features of instruction and their application to inquiry techniques in teaching and learning. Various conceptions of truth, belief, and fact and opinion, and their application to classroom learning situations. Mr. Weinberg (W)

**489. Instructional Strategies in Education.** Prerequisite: consent of instructor. Methods for academic instruction, including research and active participation in the adversary approach, forms of debate, role playing, interaction process analysis, and feedback instruments. Practical emphasis on social sciences and humanities instruction, K-12.

**490A. Instructional Decision Making.** Prerequisite: consent of instructor. Analysis of instructional models relevant to public school education. Assumptions, procedures, and constraints of each strategy considered in terms of learner and task variables. Laboratory experiences in classroom settings permit students systematically to apply and evaluate alternative instructional strategies. Mr. Weinberg

**491A. Curricular Decision Making.** Prerequisite: consent of instructor. Examination of alternative solutions for practical problems that classroom teachers face in making curricular decisions. Analysis of the influence of psychological, societal, and institutional factors in curricular decisions.

**492. Evaluation of Teaching and Learning.** Prerequisite: consent of instructor. Relationship between appraisal instruments and information required for making decisions about teachers, pupils, and materials. Recent developments in evaluation of teaching and learning; use of modern appraisal techniques in classroom settings.

**498A-498B-498C. Directed Field Experience (4 to 8 units each).** May be repeated for credit. (F,Sp)

**499A-499B-499C. Advanced Directed Field Experience (4 to 8 units each).** May be repeated for credit.

**501. Cooperative Program in Special Education (2 to 8 units).** Prerequisite: consent of UCLA academic adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Limited to UCLA doctoral students in special education. Used to record enrollment in practicum courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Independent Study (6 to 12 units).** Individual study or research for graduate students. May be repeated for credit.

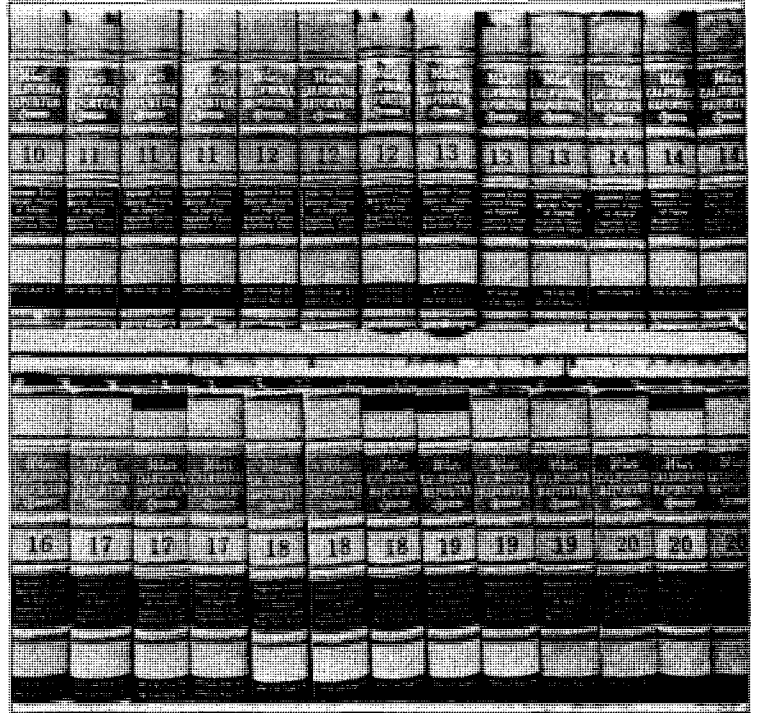
**597. Preparation for Master's Comprehensive Examinations or Doctoral Qualifying Examinations (6 to 12 units).** Individual study for master's comprehensive examinations or for Ph.D. or Ed.D. qualifying examinations. May be repeated for credit. S/U grading.

**598. Thesis Research (6 to 12 units).** Research for and preparation of master's thesis. May be taken for a maximum of 12 units. S/U grading.

**599. Dissertation Research (6 to 12 units).** Research for and preparation of doctoral dissertation. May be repeated for credit. S/U grading.

# School of Law

Susan Westerberg Prager, Dean



# 11

By any standard, the UCLA School of Law is recognized as one of the nation's great law schools. This reputation is based on excellence in scholarship, a rigorous educational program, and the quality of the faculty which includes eminent authorities in all major fields of law.

The educational program at the UCLA School of Law is rigorous and competitive, but it takes place in a humane environment where there is a genuine spirit of community. The student body of the school is intellectually distinguished, interesting, and culturally diverse.

The school's strong clinical program offers courses in lawyering skills such as interviewing, counseling, negotiation, and trial advocacy. UCLA students, alumni, and faculty have collaborated to pioneer clinical legal education. Students see more focus on the attorney/client relationship; they see more of what will ultimately face them as lawyers and policymakers.

An extensive and diversified student extern program, one of the most highly regarded moot court programs in the nation, and a basic philosophy that teaches law students to think clearly and analytically, but with compassion, all contribute to the distinction of the school.

# School of Law

General Information:  
1242 Law, (310) 825-4841

Admissions Office:  
71 Dodd Hall, (310) 825-2080

## Professors

Richard L. Abel, LL.B., Ph.D.  
Norman Abrams, J.D.  
Reginald H. Alleyne, Jr., LL.B., LL.M.  
Alison G. Anderson, J.D. (*Distinguished Teaching Award*)  
Peter Arenella, J.D.  
Michael R. Asimow, LL.B. (*Distinguished Teaching Award*), Associate Dean  
Craig Becker, J.D., Acting  
Paul B. Bergman, J.D. (*Luckman Distinguished Teaching Award*)  
David A. Binder, LL.B.  
Gary Blasi, M.A., Acting  
Grace Ganz Blumberg, J.D., LL.M.  
George H. Brown, J.D., M.B.A., Acting  
Taimie L. Bryant, Ph.D., J.D.  
Daniel J. Bussel, J.D., Acting  
Evan Caminker, J.D., Acting  
Kimberle W. Crenshaw, J.D., LL.M.  
David Dolinko, J.D., Ph.D.  
Julian N. Eule, J.D., LL.M., Associate Dean  
William E. Forbath, M.Phil., J.D., Ph.D.  
Susan Fletcher French, J.D.  
Robert Garcia, J.D., Acting  
Susan Cordell Gillig, J.D., Assistant Dean, Clinical Programs  
Carole E. Goldberg-Ambrose, J.D.  
Robert D. Goldstein, M.Ed., J.D.  
Mark Grady, J.D.  
Kenneth W. Graham, Jr., J.D. (*Distinguished Teaching Award*)  
Joel F. Handler, J.D.  
Kenneth L. Karst, LL.B. (*David G. Price and Dallas P. Price Professor of Law; Distinguished Teaching Award*)  
William A. Klein, LL.B.  
Christine A. Littleton, J.D.  
Daniel H. Lowenstein, LL.B.  
Henry W. McGee, Jr., J.D., LL.M.  
William M. McGovern, Jr., LL.B.  
Carrie J. Menkel-Meadow, J.D.  
Albert J. Moore, J.D.  
Herbert Morris, LL.B., D.Phil.  
Stephen R. Munzer, B.Phil., J.D.  
Grant S. Nelson, J.D.  
Frances E. Olsen, J.D., S.J.D.  
Susan Westerberg Prager, M.A., J.D. (*Arjay and Frances Fearing Miller Professor of Law*), Dean  
Michael D. Rappaport, J.D., Assistant Dean, Admissions  
Cruz Reynoso, LL.B.  
Arthur I. Rosett, LL.B.  
Richard H. Sander, M.A., Ph.D., J.D., Acting  
Gary T. Schwartz, J.D.  
John K. Setear, J.D., Acting  
Clyde S. Spillenger, J.D., M.A., M.Phil., Acting  
Samuel C. Thompson, Jr., M.A., J.D., LL.M.  
Phillip R. Trimble, M.A., LL.B.  
Jonathan D. Varat, J.D.  
William D. Warren, J.D., J.S.D. (*Connell Professor of Law; Distinguished Teaching Award*)  
Lucie E. White, J.D.

John S. Wiley, M.A., J.D. (*Distinguished Teaching Award*)  
Stephen C. Yeazell, M.A., J.D. (*Distinguished Teaching Award*)  
Eric M. Zolt, M.B.A., J.D. (*Distinguished Teaching Award*)

## Professors Emeriti

Benjamin Aaron, LL.B.  
John A. Bauman, LL.B., LL.M., Jur.Sc.D.  
Jesse J. Dukeminier, J.D. (*Richard C. Maxwell Professor Emeritus of Law; Distinguished Teaching Award*)  
Harold W. Horowitz, LL.B., LL.M., S.J.D.  
Edgar A. Jones, Jr., LL.B.  
Robert L. Jordan, LL.B.  
Leon Letwin, LL.B., LL.M.  
Wesley J. Liebeler, J.D.  
Richard C. Maxwell, LL.B. (*Distinguished Teaching Award*)  
David Mellinkoff, Jr., LL.B.  
Murray L. Schwartz, LL.B., LL.D.  
James D. Sumner, Jr., LL.B., LL.M., J.S.D.  
Harold E. Verrall, M.A., LL.B., S.J.D.  
Kenneth H. York, LL.B.

## Assistant Professor

Myra K. Saunders, M.L.S., J.D., in Residence, Law Librarian

## Lecturers

Lynn Alvarez, J.D.  
William Araiza, M.S., J.D.  
Stuart Biegel, J.D.  
Raquelle de la Rocha, J.D.  
Patrick Del Duca, D.E.A., J.D., Ph.D., dott di giur.  
Steven K. Derian, M.A., J.D.  
Elliot Dorff, M.H.L., Ph.D.  
William J. Flanagan, M.Div., J.D.  
Cassandra S. Franklin, J.D.  
Paul L. Gardner, J.D.  
Andrew M. Katzenstein, J.D., LL.M.  
Elizabeth D. Kemper, J.D.  
Kenneth N. Klee, J.D.  
Gordon L. Klein, J.D.  
Kristine S. Knaplund, J.D.  
Marlene Maerowitz, J.D.  
Rod Margo, LL.B., D.C.L.  
Joel Rabinovitz, LL.B.  
Laura Streimer, J.D.  
Carson Taylor, J.D.  
Suzanne Tragert, J.D.  
Kathy Koch Weser, M.A., J.D.  
Pamela Woods, J.D.  
Andrew J. Yamamoto, J.D.

## Visiting Professor

Hugh Scogin, J.D., Ph.D.

The School of Law, one of two academic units at UCLA which operate on a semester (rather than quarter) system, offers a three-year curriculum leading to the J.D. degree. The school is accredited by the California Committee of Bar Examiners, is a member of the Association of American Law Schools, and is on the approved

list of the American Bar Association. Graduates of the school are qualified to apply for admission to practice in any state in the U.S.

The school is designed to produce lawyers who are well-prepared for the various private and public roles which are assigned to members of the legal profession. Students do not undertake a specific major but have the opportunity to enroll in a wide variety of courses dealing with various legal fields.

## Degrees Offered

Juris Doctor (J.D.)  
Master of Laws (LL.M.)

## Juris Doctor Degree

### Admission

Students beginning their professional work are admitted only for the Fall Semester. You must have received a bachelor's degree from a university or college of approved standing before beginning work in the school. You are also required to take the Law School Admission Test (LSAT). The admissions committee considers grades and test scores and, in appropriate cases, such additional factors as ability in languages other than English, work experience or career achievement, previous positions of leadership or other special achievements, ethnic background, prior community or public service, unusual life experiences, overcoming a physical handicap or other disadvantage, career goals, economic disadvantages, and any other characteristic which may indicate that you will contribute to the educational and other benefits of a diversified student body.

For detailed information about the academic programs offered by the School of Law, the fees, and the semester-system calendar by which it operates, obtain the *Announcement of the UCLA School of Law* by contacting the Admissions Office, School of Law, 71 Dodd Hall, UCLA, Los Angeles, CA 90024-1445.

For information on the proficiency in English requirements for international graduate students, refer to "Graduate Admission" in Chapter 3.

### Residence and Unit Requirements

Candidates for the degree of Juris Doctor must pursue resident law school study for six semesters and successfully complete 87 units. The residence requirements may be satisfied as follows: (1) six semesters in regular session

in this school or (2) two semesters in regular session (or equivalent) in a school which is accredited by the American Bar Association, coupled with four semesters in regular session (or equivalent) in this school.

Every first-year student is required to take the full schedule of required courses; second- and third-year students are required to take a minimum of 12 hours and may not take more than 16 hours each semester. The second- and third-year curriculum is elective, except for a required course in professional responsibility. In addition to the courses in the regular law school curriculum, students may take two courses for credit in other disciplines within the University. Graduate students may enroll in upper division law courses on a limited basis. Law courses are not open to non-UCLA students.

**Attendance and Grades** — The right to take examinations and the privilege of continuing as a student in the school are conditioned on regular classroom attendance. Information on the grading system, which is based on a numerical scale of 50 to 100, may be obtained from the Office of the Assistant Dean for Students. Standards for satisfactory performance and for graduation are prescribed by the faculty and are published separately. They may also be obtained from the above office.

## Curriculum

The school offers courses of instruction within the school and supervised educational experiences outside it in an effort to enable its students to think intelligently and to prepare them for careers of practice and public service. To this end the school employs several instructional techniques in a variety of subject areas.

In the first year of their legal education students are exposed to an intensive study of legal reasoning in a series of fields which have historically dominated legal thought. In conjunction with these courses students also receive training in the use of legal bibliography and in effective legal writing and oral advocacy.

In the second and third years students have an opportunity to engage in a number of different fields of law and law-related study.

## Concurrent Degree Programs

The School of Law offers three concurrent degree programs which allow you to fulfill the requirements of the J.D. and another graduate degree simultaneously.

### Education Program/J.D.

The School of Law and the Graduate School of Education offer a concurrent plan which allows students to design a program of study leading to the J.D. and any advanced degree in education (M.Ed., M.A., Ed.D., or Ph.D.). If the program meets the degree requirements in both schools, students are awarded both degrees on its completion.

### M.A.-Urban Planning/J.D.

The School of Law and the Graduate School of Architecture and Urban Planning offer a concurrent plan of study providing an integrated curriculum for students planning to specialize in the legal aspects of urban problems. Education in planning offers an overview of theories and methods that permit identification and treatment of urban problems; education in law offers insight into the institutional causes and possibilities for treatment of these problems. Students pursue studies in both schools and receive both the J.D. and M.A. degrees at the end of four years.

Students interested in the program must apply and be admitted to the School of Law, the Urban Planning Program, and the Graduate Division.

### M.B.A./J.D.

The School of Law and the John E. Anderson Graduate School of Management offer a concurrent program which enables students to prepare for careers where law and management overlap and where understanding of both fields is necessary. Examples of such areas would include public service, international trade, industrial relations, corporate law, and specialized areas of management consulting. The program makes it possible to earn the J.D. and M.B.A. in four academic years. Students interested in such a program should apply to both schools simultaneously.

## Master of Laws Degree

The school offers a graduate law program leading to the Master of Laws (LL.M.) degree to outstanding international students interested in pursuing graduate studies. Law school graduates with outstanding records who may be interested in this program should contact the Admissions Office for further information.

## Other Programs

### Clinical Program

The school permits students to participate in clinical training. These activities consist of fieldwork in a variety of federal and state agencies accompanied by seminars in the school which seek to analyze and expand the agency experience.

### Extern Program

The school offers an extern program which gives students the opportunity to work for judges or in legal agencies away from the school for as long as six months (including the summer), for which they receive academic credit. Extern programs have been offered in Washington, DC, San Francisco, and New York.

## First-Year Courses

The first year of law school is designed to introduce students to legal analysis using a variety of substantive fields. Each of the following courses is required of all first-year students.

**100. Contracts (5 units).** Law governing private agreements. Analysis of criteria for determining whether or not a particular promise or voluntary agreement is legally enforceable and survey of major legal issues affecting enforceable agreements, including when a contract becomes binding, what persons acquire rights under a contract, conditions under which performance is required or excused, what constitutes breach of contract, remedies available for breach of contract. Problems of interpreting contract language, role of contract in a market society, conflict between commercial need for certainty and demands of individual fairness, and relationship between contract law and other areas of law. Ms. Anderson, Mr. Asimow, Mr. Brown, Mr. Bussel, Ms. Littleton, Mr. McGovern, Mr. Rosett, Mr. Setear

**108. Lawyering Skills: Theory and Practice (5 units).** Assignment of students to work in "law firms" where they learn legal principles and lawyering skills while working on various aspects of clients' problems. During the year students interview and counsel clients, and draft legal memoranda, contracts, and "advice letters," while learning to develop legal research strategy. In second semester students prepare a case for trial by developing a discovery plan, interviewing and deposing witnesses, and arguing a motion before a judge. Focus on principles of legal analysis and argumentation as well as lawyering techniques throughout entire year.

**120. Criminal Law I (4 units).** Selected topics in substantive criminal law. Consideration of principles underlying definition of crime such as requirements of *actus reus* and *mens rea* and general doctrines such as ignorance of fact and ignorance of law, causation, attempt, complicity, and conspiracy. Inquiry into principles of justification and excuse, with particular attention to doctrines of necessity, intoxication, insanity, diminished capacity, and automatism. Emphasis on basic theory of criminal law and relationship between doctrines and various justifications for imposition of punishment.

Mr. Arenella, Mr. Dolinko, Mr. Letwin, Mr. Schwartz

**130. Property (5 units).** Analysis of property as a social institution and particularly of dynamics of the system for recognizing and protecting competing claims to resources. Historical development of various kinds of interests in property, housing, landlord and tenant, public and private land-use planning and development, and sale and financing of real estate.

Ms. Blumberg, Ms. Bryant, Mr. Dukeminier, Ms. French, Mr. Lowenstein, Mr. Munzer, Mr. Nelson, Mr. Sander

**140. Torts (5 units).** Personal injury law as it has developed within the Anglo-American legal tradition. Concept of negligence, refinements of negligence law, and doctrine of intentional torts. Contemporary rules of strict liability. Alternatives to the tort system in treating need for victim compensation as a societal problem. Effort to identify basic purposes which tort law system achieves or should achieve.

Mr. Abel, Ms. Anderson, Mr. Grady, Ms. Olsen, Mr. Schwartz

**145. Civil Procedure (5 units).** Processes that courts follow in deciding disputes in noncriminal cases. Way in which conflicts are framed for courts, stages through which litigation goes, division of power among various decision makers in the legal system and between state and federal courts, territorial limitations on exercise of judicial power, principles that define consequences of a decision once a court has finished with a case, and special opportunities and problems of litigations involving multiple disputants. Ways in which our beliefs about fairness (in particular those embodied in U.S. Constitution) and pressure for efficiency shape design of the process.

Mr. Alleyne, Mr. Becker, Mr. Bergman, Mr. Binder, Mr. Caminker, Mr. Forbath, Ms. Goldberg-Ambrose, Mr. Spillenger, Ms. White, Mr. Yeazel

**148. Constitutional Law I (4 units).** Ways in which U.S. Constitution distributes power among various units of government in the American political system and limits exercise of those powers. Structural limitations on government: division of powers between the nation and states in the federal system, and separation of powers among the three branches (legislative, executive, and judicial) of national government. Civil War Amendments (13th, 14th, 15th) as limits on states and as sources of congressional power. Proper role of judiciary in limiting action of other branches of government.

Mr. Caminker, Ms. Crenshaw, Mr. Eule, Mr. Goldstein, Mr. Karst, Mr. Lowenstein, Mr. Varat

## Second- and Third-Year Courses\*

All of the courses in the second- and third-year curriculum are elective with the exception of the legal profession requirement, which is a requisite for graduation. Students may fulfill the requirement either by preparing a paper in consultation with a faculty member or by completing one of the sections of Law 312. The different sections vary in emphasis.

**312. The Legal Profession (2 to 3 units).** Course has two central themes. One is distribution of legal services, including topics such as social structure of the profession, different roles and specialties of law practice, and how the profession is regulated. Second theme is the lawyer's representation of clients, including legal, professional, ethical, moral, and political problems arising out of the lawyer's various roles — representative of client, officer of the court, member of a profession. Various sections may offer different emphases with respect to rules regulating the profession (ABA Model Code of Professional Responsibility and ABA Model Rules of Professional Conduct) and in course requirements. Some sections require a paper in lieu of or in addition to an examination.

Mr. Abel, Ms. Menkel-Meadow, Mr. Reynoso, Mr. Sander

## Elective Courses

**200A. Constitutional Political Economy.** Course 148 is a "zoo" class, with separate cages for each of the different animals (types of cases) where doors of the cages are never open so that the animals can mingle with each other. An attempt to open the cages to see if there is a unified and principled way of thinking about constitutional law and a look at many cases already considered in course 148. Use of some economics (mostly public choice theory), history, rational choice theory, and common sense.

Mr. Liebel

**201. Constitutional Law II.** First Amendment's guarantees of freedoms of speech, press, and assembly, and First Amendment's prohibition of establishment of religion and its guarantee of free exercise of religion. Proper role of judiciary in American system of government.

Mr. Eule, Mr. Forbath, Mr. Goldstein, Mr. Karst, Mr. Lowenstein, Mr. Varat

**202. Constitutional Criminal Procedure.** Study of Fourth-, Fifth-, and Sixth-Amendment constitutional restraints on activities of law enforcement officers during investigatory stage of the criminal process. How Supreme Court has attempted to resolve tension between individual rights and crime control needs in its decisions regulating the following law enforcement practices: investigative detention, arrest, police interrogation, searches and seizure, and eyewitness identification. Possible coverage of rights to counsel and to a jury.

Mr. Abrams, Mr. Arenella, Mr. Dolinko, Mr. Goldstein, Mr. McGee, Mr. Wiley

**205. Wills and Trusts.** Law of intestate succession, wills, will substitutes, trusts, class gifts, powers of appointment, Rule Against Perpetuities, and introduction to estate and gift taxation and law of trust and estate administration.

Mr. Dukeminier, Ms. French, Ms. Knaplund, Mr. McGovern

**207. Community Property.** Detailed examination of California community property system which regulates property relations between husband and wife during marriage and at its termination by divorce or death. Community property raises many questions about nature of marriage and various forms of gainful human activity.

Ms. Anderson, Ms. Blumberg, Ms. Prager

**208. Real Property Secured Transactions.** Examination of operation of California's land security system, tracing the security device from common law mortgage to modern deed of trust and land sale contract. Fundamental problems of land security in realistic context of case and statutory law of a single jurisdiction, with emphasis on planning aspects.

Mr. Warren

**209. Real Estate Finance.** Law governing financing of land transactions from both a national and California perspective, including real estate mortgage, California Deed of Trust, installment land contracts, other mortgage substitutes, receivers, foreclosure, priorities in California antideficiency legislation, secondary mortgage market, construction financing, leasehold mortgages, shopping center developments, and condominiums.

Mr. Nelson

**211. Evidence.** Focus on usual range of evidentiary topics — relevance, hearsay, character evidence, testimonial privileges, documentary evidence, and problems in examination of witnesses. Exploration of various ways of treating these issues, with emphasis on approaches of Federal Rules of Evidence and California Evidence Code.

Mr. Bergman, Mr. Garcia, Mr. Graham, Mr. Letwin

**212. Federal Courts.** Selected problems in jurisdiction of federal courts, including justiciability and federal judicial function; federal habeas corpus; federal-question jurisdiction of federal district courts; intervention by federal courts in state proceedings.

Mr. Caminker, Mr. Varat

**214. Civil Rights Litigation.** Exploration of issues arising in civil rights litigation across a range of substantive areas, including police brutality, race and sex discrimination, and free speech. Focus on Reconstruction-era civil rights acts, in particular on 42 U.S.C. section 1983 and analysis of recurring legal problems arising in suits against state and local governments and their officers for violation of federal constitutional and statutory rights. Topics include relationship between state and federal courts, state action requirement, 11th Amendment, municipal liability, official immunities, damages and injunctive relief, and attorney fees.

Mr. Becker, Mr. Goldstein, Mr. Spillenger

**214. Civil Rights.** Survey course intended to review both the casual and remedial relationship of law to racial discrimination. Brief review of historic development of race as a legal issue; past and current developments in housing, voting, and education. Identification of various competing visions of racial equality reflected in civil rights legislation, in case law, and in the very definition of discrimination. Review of several critiques of antidiscrimination law, with special attention to those questioning effectiveness of seeking racial reforms through law.

Ms. Crenshaw

**215. Law and the Poor.** Major income-maintenance programs in the U.S.: Aid to Families with Dependent Children, Disability, Food Stamps, Supplemental Security Income, Social Security, and General Relief. Emphasis on interactions of moral attitudes toward the poor and structure and implementation of law, policy, and administration. The deserving and underserving poor, moral behavior, race, gender, work, and welfare. Current welfare reform consensus, including California GAIN program and recently enacted Family Support Act. Students required to spend one day working with the public counsel advocating for general relief recipients.

Mr. Handler

**216. Administrative Law.** Much of modern government is administered by agencies of government other than legislatures or courts. Substantive sources of (and limits on) administrative authority. Procedural norms with which agencies must comply in the course of adjudication or rule-making. Judicial review as a technique for correcting administrative error or abuse. Individual's right to procedural due process in individual's interactions with public agencies.

Mr. Asimow, Mr. Schwartz

**M217. Topics in Legal Philosophy.** (Same as Philosophy M256.) Prerequisite: consent of instructor. Examination of topics such as concept of law, nature of justice, problems of punishments, legal reasoning, and obligation to obey the law. May be repeated for credit with consent of instructor.

Mr. Munzer

**220. Federal Taxation I.** Fundamentals of federal income taxation, particularly as they apply to individuals. Gross income, deductions, year in which income is properly reported and deductions properly taken, and various other topics.

Mr. Asimow, Mr. Klein, Mr. Zolt

**221. Federal Taxation II.** Prerequisite: course 220. Course 230 may be taken concurrently. Application and extension of principles in course 220 to shareholder/corporation relationships. Federal income tax consequences of formation, reorganization, and liquidation of corporations. Distributions to shareholders, and sales of shareholder interests.

Mr. Asimow, Mr. Zolt

**221. Federal Taxation II.** Prerequisite: course 220. Examination on a comparative basis of basic principles of federal income taxation affecting corporations, partnerships, and S corporations. C corporations are entities taxed separately and distinctly from their shareholders; partnerships and S corporations are generally not subject to tax. Organization, operation, and sales and liquidation of the three entities.

Mr. Thompson

**222. Federal Taxation III.** Federal taxation of gifts and decedents' estates; federal income taxation of trusts and estates. Emphasis on tax planning techniques. Of considerable importance to anyone who expects to practice in areas of tax planning, estate planning, family law, and probate, among others.

Mr. Katzenstein

**224. U.S. Taxation of International Transactions.** U.S. taxation of (1) international activities of U.S. citizens and corporations and (2) U.S. activities of foreign citizens and corporations. Particular emphasis on impact of federal income taxation on cross-border acquisitions.

Mr. Thompson

**228A. Corporate Securities and Antitrust Aspects of Mergers and Acquisitions.** Prerequisite: course 220. Recommended: course 221. Interdisciplinary approach to study of mergers and acquisitions, looking at antitrust aspects, the Hart/Scott/Rudino premerger notification provisions, corporate law aspects, basic federal securities law considerations, and financial, tax, and accounting aspects.

Mr. Thompson

\*The School of Law maintains its own course numbering system; course numbers as shown here do not correspond to Graduate Division course numbering definitions.

**228B. Tax Aspects of Mergers and Acquisitions.** Prerequisites: courses 220, 230. Recommended: course 221. Various aspects of taxation of mergers and acquisitions, including (1) taxable stock acquisitions, (2) taxable asset acquisitions, (3) leveraged buyouts, (4) tax-free acquisitive reorganizations, and (5) limitations on carryover of losses. Examination of current proposed revisions of the mergers and acquisitions and leveraged buyout provisions of the Code.

Mr. Thompson

**228C. Antitrust Aspects of Mergers and Acquisitions.** Examination of impact of antitrust laws and Hart/Scott/Rudino premerger notification provisions on mergers and acquisitions. Consideration of some international antitrust aspects. Survey of some of the literature dealing with motivations for mergers and acquisitions.

Mr. Thompson

**230. Business Associations.** Focus on how problems of joint economic ventures are resolved in the law of agency, partnership, and corporation. Federal securities laws and their impact on planning business ventures.

Ms. Anderson, Mr. Asimow, Mr. Brown,

Mr. Klein, Mr. Thompson

**234. Law and Accounting.** Prerequisite: consent of instructor (for students with more than two undergraduate or any graduate accounting courses). Recommended for students with no prior accounting training. Basic principles of financial reporting and analysis applied by business enterprises. Examination of how firms record transactions and summarize their economic activities in the form of financial statements. Consideration of various financial concepts of relevance to attorneys, including income measurement, liability determination, and enterprise valuation. Accounting and financial aspects of capital structure decisions involving bonds, equity securities, and leases.

Mr. G. Klein

**236. Securities Regulations I.** Prerequisite: course 230. Basic approach of federal securities law, including disclosure-oriented provisions of Securities Act of 1933 and Securities Exchange Act of 1934, and fraud and civil liability provisions of both acts. Impact of federal securities law on merger and acquisition process, including tender offers and leveraged buyouts.

Mr. Brown, Mr. Thompson

**236A. Securities Regulations II: Securities and Corporate Aspects of Mergers and Acquisitions.** Prerequisite: course 230. Examination of impact of federal securities law and state corporate laws on merger and acquisition process, including tender offers and leverage buyouts.

Mr. Thompson

**239. Elements of Economic Organization.** Examination of structure of business transactions and allocation of control, risk, and return. Topics include venture capital investments, debt and loan agreements, employment agreements, distribution and marketing agreements (including franchising), motion picture production/finance/distribution agreements, and joint ventures. Guest lecturers from law firms and business world. Offered jointly by School of Law and Anderson Graduate School of Management.

Mr. Klein

**240. Antitrust I.** Economic analysis related to price fixing, market division, joint ventures, tying arrangements, reciprocity, requirements contracts, mergers, and monopolization.

Mr. Grady, Mr. Liebeler, Mr. Wiley

**245. Antitrust II.** Prerequisite: course 240. Historic Sherman Act monopolization and merger cases. Economic underpinnings of oligopoly theory, which presumably forms basis for current antitrust policy toward concentrated industries; validity of so-called "Market Concentration Doctrine." Current antitrust efforts aimed at monopoly and "shared monopoly."

Mr. Liebeler

**247. Law and Economics.** Economics background not required. Basic theory of voluntary exchange and conditions necessary for a voluntary exchange system to maximize community welfare, applied to various types of legal problems in attempt to gauge extent to which legal rules contribute to (or hinder) maximization of such welfare.

Mr. Liebeler, Mr. Sander

**248. Bankruptcy.** Examination of Bankruptcy Code and related statutes from viewpoint of what commercial lawyer should know about the field in order to advise clients in planning and carrying out business transactions. Emphasis on liquidation of debtors' estates in bankruptcy, reorganization of business debtors in Chapter 11, rehabilitation of individual debtors in Chapter 13, planning business transactions to withstand trustee's avoiding powers — voidable preferences, fraudulent transfers (including leveraged buyouts and intercorporate guarantees), and equitable subordination of claims.

Mr. Bussel, Mr. Warren

**250. Commercial Law: Chattel Security and Commercial Paper.** Detailed examination of Uniform Commercial Code. Study of Article 9 of the Code, law governing security interests in personal property. Business collateral such as equipment, inventory, accounts receivable, and chattel paper, as well as financing of purchases by nonbusiness consumers. Treatment of secured transactions in bankruptcy and use of letters of credit in commercial transactions, law of negotiable instruments (Article 3 of the Code), bank collection process (Article 4), and wire transfers (Article 4A).

Mr. Jordan, Mr. Warren

**252. Unfair Competition and Business Torts.** Survey of five ways in which law regulates the competitive process, encourages innovation, and governs rights of creators and consumers: patent, copyright, trademark, false advertising, and business tort law. Patent law covered very briefly, primarily for comparative purposes rather than as a complete introduction to that area. "Business torts" includes interference with contracts and business advantage, trade secret theft, right of publicity, and RICO — popular federal racketeering statute.

Mr. Wiley

**255. Tort Law: Tort Crisis, Tort Theory, and Tort Reform.** Modern tort law — recent developments in tort doctrine and tort practice that may have led to a crisis in the 1980s; academic scholarship that has endeavored to explain, at the theoretical level, what happened in the 1980s; and range of reforms that have been enacted by state legislatures or proposed for tort scholars.

Mr. Schwartz

**259. Labor Arbitration.** Practice, procedures, and substantive law of labor arbitration, with emphasis on what labor arbitrators actually do in their interpretation of collective bargaining agreements. Procedural content of labor arbitration: Who are the labor arbitrators? How are they mutually selected by unions and employers? How might the fact that the arbitrator is mutually selected and mutually paid by the union and employer bear on arbitrator's decision-making process? Utility of using the labor arbitration model as a dispute resolution mechanism outside the labor environment: domestic disputes, landlord/tenant disputes, etc.

Mr. Alleyne

**260. Labor Law I.** Fundamental law governing unions and other collective activity among workers in the private sector — the National Labor Relations Act (NLRA). How principles developed under NLRA have been applied in the public sector. Analysis of a series of topics, including organizing, union elections, collective bargaining, picketing, strikes, lockouts, and arbitration. Development of the law and how the law has structured relations between labor and management and contributed to current state of unions in the U.S.

Mr. Alleyne, Mr. Becker

**261. Employment Law.** Prerequisite: course 260 or consent of instructor. Collective bargaining in the public sector (government employment at federal, state, and local levels). Differences and similarities in private and public sectors, and responses of federal and state legislatures and of courts to special problems of collective bargaining in the public sector.

Mr. Alleyne

**261. Employment Law.** Exploration of legal regulation of wage work, with topics from both private and public sector. How law has defined relationship between employee and employer and intervened into that relationship. Topics include constitutional rights of public employees, employment discrimination, unjust discharge, and other statutory regulation of employment.

Mr. Becker

**263. Employment Discrimination.** Title VII of 1964 Civil Rights Act and similar statutes prohibit discrimination based on race, sex, national origin, religion, age, and disability. Examination of substantive and procedural law that has developed under these statutes; consideration of social policy goals and assumptions underlying that development. Specific topics include disparate treatment and disparate impact theories of discrimination, employment testing and test validation, statistical proof, equal pay and comparable worth, affirmative defenses (business necessity, bona fide occupational qualifications, bona fide seniority systems), affirmative action and reverse discrimination, obligations of government contractors, class actions, and administrative and judicial remedies.

Mr. Alleyne, Ms. Littleton

**264. Workers' Compensation and Workers' Injuries.** Study of ways in which law responds to phenomenon of workers' injuries and occupational disease. Labor market and unionization, workers' compensation, federal OSHA job-safety regulation program, and limited but significant number of tort issues that workers' injuries provoke. Workers' compensation considered both as a compensation program and as a tort-like rule of strict liability.

Mr. Schwartz

**267. Indian Law.** Special legal status of American Indians and Indian tribes and tension between moral/legal claims and political forces. Sources and scope of federal, state, and tribal power on Indian reservations; property law concepts unique to Indian tribes and Indians; rights to American Indians in relation to federal, state, and tribal governments and federal trust relationship to Indians.

Ms. Goldberg-Ambrose

**270. International Law.** Role of law and legal institutions in international relations and in government foreign affairs decision making, particularly on the part of the U.S. Effect of public international law on domestic law and private activity. How international law is applied in the world. Essentials of treaty law and customary international law. U.S. Constitutional structures affecting foreign relations and allocation of responsibility for decision making within the international system, and how conflicts in assertion of jurisdiction are resolved. Review of substantive rules of the law of sea and legal regime governing use of airspace. Major limitations on exercise of authority by states (doctrines of sovereign immunity, acts of state and diplomatic immunity) and responsibility of states for fair treatment of aliens, international human rights law, and role of individual in the system. Particular problems of terrorism, international environmental law, international organizations, and rules related to use of force.

Mr. Trimble

**271. International Business Transactions.** Legal framework of international trade, investment, and distribution of goods and services. How legal activities, such as negotiation of a contract, litigation or arbitration of a claim, distribution of goods through agents, distributors, and licensees, or pursuit of a law practice are affected by international dimensions of the work.

Mr. Rosett, Mr. Trimble

**273. Human Rights.** International human rights law from jurisprudential and practical perspectives. Introduction to history and normative content of international human rights law, law-making process, how abuses are spotlighted, and extent to which meaningful sanctions exist. Human rights as an element of U.S. foreign policy and remedies available to victims in U.S. courts. Use of contemporary world events to explore questions such as whether human rights norms are universally applicable, whether certain rights trump other rights, and extent to which conflicting rights can be harmonized.

**274. Trademark and Unfair Competition Law.** Basic principles of trademark and unfair competition law. Topics include philosophical and public policy considerations underlying trademark and unfair competition law; how trademark rights are acquired, maintained, and lost; process for registering trademarks; infringement of trademark rights; dilution of trademarks; false advertising; right of publicity; remedies for violation of trademark rights; and gray market and other international aspects of trademark rights.

Mr. Gardner, Mr. Wiley

**278. Comparative Law: Japanese Law and Society.** Selected topics in Japanese law and society. Introduction to Japanese legal and social context, legal profession, and judicial system. Exploration of four or five case studies of groups in Japan which have sought to improve their situation through use of legal and extralegal avenues, including victims of environmental pollution, Koreans in Japan, Burakumin (minority group subordinated on basis of ancestors' occupation and residence). Ms. Bryant

**280. Aviation Law.** Examination of international and domestic laws applicable to aviation and air transport. Analysis of nature and sources of aviation law, legal regime of airspace and aircraft, and regulation of users of airspace. International and U.S. law related to increasing phenomenon of hijacking, offenses on board aircraft, and acts of terrorism and sabotage committed against aircraft, air carriers, and other entities involved in civil aviation. Economic regulation of air carriers in the U.S. in context of Airline Deregulation Act of 1978. Economic regulation in international sphere examined through traffic conferences of International Air Transport Association and bilateral air transport agreements executed between various states. Liability of aircraft operators, with special emphasis on regime of liability for international air carriers established by Warsaw Convention of 1929 and subsequent instruments. Introduction to field of aircraft leasing and financing. Mr. Margo

**M281A-M281B. Child Abuse and Neglect (2 units each).** (Formerly numbered M282A-M282B.) (Same as Community Health Sciences M245A-M245B-M245C, Dentistry M300.5A-M300.5B-M300.5C, Education M217G-M217H-M217I, Medicine M290A-M290B, Nursing M290A-M290B-M290C, and Social Welfare M290E-M290F-M290G.) Course M281A is prerequisite to M281B. Intensive interdisciplinary study of child physical and sexual abuse and neglect, with lectures by faculty members of the Schools of Dentistry, Education, Law, Medicine, Nursing, and Public Health and the Department of Psychology, as well as by the relevant public agencies. Mr. Goldstein

**282. Education and the Law.** Exploration of recent controversies on student rights at K-12 and college levels. Topics include education malpractice, student drug testing, discriminatory harassment, and parameters of right to receive information and ideas. Examination of efforts to maximize equal educational opportunity by analyzing such volatile areas as standardized testing, bilingual education, rights of disabled (including rights of AIDS-infected students), homogeneous ability grouping, and interscholastic athletics. Mr. Biegel

**M285. Governance: State, Regional, and Local (2 to 4 units).** (Same as Architecture and Urban Planning M202B.) Analysis of structure and function of local, regional, and state government in historical and institutional context: organization, finance, intergovernmental relations, role of judiciary, public services, lawmaking, citizen participation through initiatives and referenda, and government tort liability. Mr. Schwartz

**M286. Public Control of Land Development (2 to 4 units).** (Same as Architecture and Urban Planning M202A.) Analysis of legal and constitutional constraints on land-use planning and development; administrative and environmental regulatory processes, including relationship between law and planning, formulating land-use legislation, zoning, subdivision controls, eminent domain, taxation, urban development, environmental law, and negotiation. Theory and doctrine applied to case studies; research project/paper and/or examination required. Mr. McGee

**M287. Urban Housing and Community Development (2 to 4 units).** (Same as Architecture and Urban Planning M231.) Examination of past 40 years of federal and state programs to stem urban decline and improve housing in the U.S.; comparison and contrast of legal and policy initiatives in areas of public housing, housing segregation, mortgage subsidies, landlord/tenant law, urban renewal, and community organizing. Research paper required. Mr. McGee, Mr. Sander

**M290. Environmental Law (2 to 4 units).** (Same as Architecture and Urban Planning M264.) Examination of the field of environmental law through analysis of various legal issues and public policy: legal consequences of public decision-making strategies and allocation of primary responsibility for various environmental decisions. Focus on air pollution and Clean Air Act as a means of illustrating policy issues underlying the field. Mr. Yamamoto

**290A. International Environmental Law.** Role that international law currently plays, or might play, in determining answers to questions about humankind's impact on the global environment. Skills of interpretation, drafting, negotiation, and transactional design relevant to attorneys practicing law of any sort. Mr. Setear

**292. Water Law.** How society allocates and protects a crucial natural resource — water. Law treats water differently from land and other natural resources, permitting reexamination and critique of many commonly held assumptions about property (such as asserted advantages of exclusive property rights). How law allocates water among competing consumptive and in-stream uses (including recreational use and preservation) and protects water quality under state and federal law. History and politics of water development in U.S.; relevant role of market in reallocating water; constitutional protection of water rights; environmental limits on water development (including Endangered Species Act); Native American water rights; interstate and international disputes over water; institutional influences on water use; and public rights of access to water resources.

**299. Federal Criminal Law Enforcement.** Federal criminal enforcement against white collar crime, organized crime, and political corruption. Emphasis on federal crimes such as RICO (civil RICO also), money laundering, mail fraud, Hobbs Act, and Travel Act. Federal system of penalties, including criminal forfeiture and federal sentencing guidelines. It is essential for lawyers representing business persons to be familiar with federal criminal laws. Gives students a basic understanding of federal criminal system, ways in which federal criminal law differs from its state counterparts, and how federal and state criminal enforcement systems relate to each other. Mr. Abrams, Mr. Wiley

**300. Remedies.** Kinds and nature of relief afforded by courts to litigants in civil litigation. Theory and general principles governing award of compensatory damages, equitable remedies, and restitution. Substantive law of restitution and history of equity jurisdiction. Mr. Bauman, Ms. Littleton, Mr. Nelson, Mr. Reynoso

**M301. Art Law.** (Formerly numbered 301.) (Same as Art History M270.) Prerequisite: consent of instructor. Knowledge of fine arts, arts management, or international law desirable. Limited enrollment; management and art history students may cross-register with consent of instructors. Legal issues related to the fine arts. Consideration of U.S. domestic law as well as international treaties and foreign law in addressing such controversial issues as the international trade in art, art in public places, and moral rights. Distinguished guest speakers and one field trip.

**302. Intellectual Property Law.** Introduction to law of patents, copyrights, and trademarks. Doctrines of patentable subject matter, nonobviousness, and patent infringement. Basic legal concepts, such as copyright distinction between idea and expression, and trademark distinction between valid marks and unprotectable generic words. Readings on theory and history of intellectual property protection, with some readings from law and economics literature. Mr. Bussel, Mr. Gardner, Mr. Grady, Mr. Wiley

**305. Entertainment Law.** Analysis of a variety of legal problems encountered in representing performers, writers, producers, and directors, and companies with which they deal. Ways in which rights are acquired and exploited, as well as ways in which proceeds of such exploitation are allocated. Rights of privacy and publicity. Roles of attorneys, agents, managers, and promoters in representation of creative talents.

**306. Patent Law.** Basic principles of patent law. Topics include philosophical and public policy considerations underlying patent law; what is patentable; requirements for patentability; operation of U.S. Patent Office, including procedures for applying for patents; patent applicants' duties of candor and disclosure to Patent Office and consequences for failing to discharge that duty; infringements of patents, including analytical framework for determining whether a patent is infringed; and remedies for patent infringement. Mr. Gardner, Mr. Wiley

**309. Law and Biology.** Exploration of application of recent research in biology, anthropology, evolutionary theory, neurophysiology, and ethology to legal problems, with specific topics in property, criminal, family, and tort law. Ms. Bryant, Mr. Grady, Mr. McGuire

**313. Conflict of Laws.** Problems arising in multistate transactions in the federal system, including choice law, recognition and enforcement of judgments, and bases of jurisdiction of state courts. Mr. Horowitz, Mr. Trimble

**M315. Asian Americans and Legal Ideology (3 units).** (Formerly numbered 315.) (Same as Asian American Studies M297D.) Exploration of Asian American experience as it relates to American legal system, considering both dominant and oppositional concepts of law. Consideration of primary historical documents to examine ways Asian Americans have been victims of the legal system, as well as astute manipulators of the legal system.

**316. Disability Law.** Examination of federal and state statutory and constitutional rights of persons with disabilities and elderly persons, including review of problems and issues related to employment, education, access, housing, transportation, independent living, and medical treatment — both right to die and right to treatment (Baby Jane Doe). Laws examined include Americans with Disabilities Act, Rehabilitation Act, Education of All Handicapped Children's Act.

**317. Family Law.** Conjugal relationships (i.e., marriage and cohabitation). Legal principles and social policies governing creation, maintenance, and dissolution of conjugal relationships. Consideration of parent/child relationship limited to divorce-related child custody and support and legal status of children born out of wedlock. Ms. Blumberg, Ms. Olsen

**319. Election Law.** Recommended prerequisite or co-requisite: course 201. Ways in which laws governing the political process affect and reflect political power relationships. Right to vote, reapportionment, political parties, bribery, campaign finance, incumbency, and ballot propositions. Mr. Lowenstein

**325. Law and Psychiatry.** Law affecting the many persons identified as seriously mentally ill has rapidly changed in past 30 years, especially with respect to standards for involuntary civil commitment: rights of those committed, including right to treatment and to decline treatment; guardianship; doctor/patient confidentiality; discrimination against the mentally disabled; insanity and related defenses; competence to stand trial; and criminal dispositions. Attitudes concerning psychiatrists, psychotherapy, and mental illness have also changed. Exploration of these changes, with emphasis on impact of constitutional adjudication on the law of civil commitment; different world views of psychiatrists and lawyers regarding dependence and paternalism, and liberty and constraint; whether imposition of legal rules on medical practices has diminished human suffering. Mr. Goldstein



**326. Health Law and Administration.** Major programs in health care financing (Medicare, Medicaid, private insurance, medically indigent) and health care organization (private practice, HMOs, preferred providers, etc.). Effects of cost containment and administration's pro-competitive strategy. Topics include the professions, hospitals, quality control (including malpractice), antitrust, alternative approaches to health care, medical experimentation, special health problems of the poor, the elderly, women, minorities, and the defective newborn. Mr. Handler

**327. Communications Law.** Survey course on laws related to major industries regulated by the Federal Communications Commission (broadcasting, cable, and television). Content and structural regulation of mass media, including fairness doctrine, political speech, and ownership restrictions. Review of policy basis for regulation and proposals for change. Regulation of nonbroadcast video technologies, including cable and satellites. Review of common carrier regulation as applied to examination of telecommunications industry and role of competition.

**329. Women and the Law.** Ways in which court decisions, statutes, and operation of legal system reflect ideas about what women and men are like and what their roles in life should be. "Protective" labor legislation, voting rights, equal protection of the laws, Equal Rights Amendment, control of childbearing, employment discrimination, and either topics in criminal law (rape, prostitution) or topics in family law (marriage obligation and grounds for divorce). Ms. Littleton

**329. Women and the Law: Feminist Jurisprudence.** Critical examination of laws affecting women, including laws related to employment discrimination, sexual harassment, divorce, child custody, incest, abortion, surrogacy, domestic violence, pornography, prostitution, and rape. Challenge to conventional understandings of role of law; how race and class differences influence way law intervenes in lives of women; role of legal discourse in constructing and maintaining gender differences; significance of feminist theory to legal theory. Ms. Olsen

**331. Immigration Law.** Overview of immigration and naturalization process from practitioner's point of view. Nonimmigrant and immigrant visas, consular practice, deportation/exclusion proceedings, naturalization and citizenship, constitutional issues related thereto, and specific remedies available. Ms. Alvarez

**332. Children and the Law.** Judicial and legislative allocation of power and responsibility between parents and the state, child's economic situation within the family, child custody, adoption, medical treatment of minors, status of the fetus, parental right to discipline children, neglect and abuse, state-enforced limitations on the liberty of minors and juvenile delinquency. Ms. Blumberg, Mr. Goldstein

**333. Community Associations and the Law.** Legal nature of mandatory membership community (homeowner) associations and the developing body of law governing their operation. Topics include powers of homeowner associations to levy assessments, to enforce covenants, and to make rules and regulations governing conduct of residents and others within area covered by the homeowner association. Covenants and rules infringing on free speech, personal autonomy, and privacy of the residents, as well as architectural control covenants. Duties of the association and board of directors to owners and residents and various standards applied to determine liability of individual directors. Ms. French

**335. Religious Legal Systems.** Literature and institutions of a religious legal system. Offered from time to time by different instructors in Canon law, Islamic law, and Rabbinic legal tradition. Content varies depending on particular tradition under study; emphasis on concerns common to a legal system based on divine authority. Extent of human authority to interpret and modify the received law to meet new circumstances, relation between law and morality, and interaction between religious and secular law. Mr. Dorff, Mr. Rosett

**337. American Legal History.** Examination of significant episodes and developments in American legal and constitutional history, with emphasis on interplay between legal change and contemporaneous developments in American politics, society, and culture. Topics include constitution-making and creation of judicial review; law and economy in the 19th century; slavery and constitutional crisis; freedom, equality, and Reconstruction Amendments; American legal ideology and rise of industrial capitalism; women, law, and labor in Progressive era; development of an American legal profession; Supreme Court in age of Holmes and Brandeis; legal academy from Langdell to legal realism to legal process. Mr. Forbath, Mr. Spillenger

**348. European Community Law.** For more than thirty years a unique set of legal institutions has been developing to support economic and political integration of Western Europe. In recent years the process has been accelerated with the aim of completing integration of the internal market by 1992 and of achieving greater political and monetary union. Examination of structures and institutions of the communities, law-making processes they use, and their approach to several salient substantive economic problems. Mr. Del Duca, Mr. Rosett

**400. Pretrial Lawyering Process: Civil (Clinical).** Training and practical experience in the full range of skills used by lawyers during pretrial phases of civil litigation process. Interviewing, case planning, investigation, counseling, pleading, formal discovery, negotiation, and lawyer decision-making skills. Subjects presented through demonstration, simulated problems, and videotaped role-play sessions conducted in connection with interviewing, counseling, and depositions. Fieldwork offers opportunity to employ lawyering skills in a law office setting under supervision of experienced legal services attorneys. Mr. Blasi, Ms. Franklin, Ms. Menkel-Meadow, Mr. Moore, Ms. Woods

**400. Pretrial Lawyering Process: Housing Discrimination (Clinical).** Prerequisite: consent of instructor. Limited to 12 students. Use of federal fair housing litigation as vehicle to give students hands-on training in civil lawyering skills, including client interviewing and counseling, case planning, fact investigation, pleading, discovery, motions practice, and structuring of complex remedies. Practice of these skills through lecture/discussion, simulated videotaped exercises, written problems, and group projects. Introduction to federal and California fair housing laws and underlying policy issues that those laws address. Ethical dimensions of adversarial lawyering; uses of litigation to address broad social justice issues; challenges of lawyering across differences of gender, ethnicity, and class. Ms. White

**402. Fact Investigation and Discovery in Complex Litigation (Clinical).** Theoretical and practical aspects of discovery in both civil and criminal cases. Rational and nonrational processes involved in proving facts. Relationship between proof at trial and investigation of a case. Development of proficiency in interviewing witnesses, drafting interrogatories and other discovery requests, and taking depositions in simulated cases. Mr. Binder, Ms. Gillig, Mr. Moore, Ms. Woods

**403. Interviewing, Counseling, and Negotiation (Clinical).** Basic interviewing, counseling, and negotiation concepts in litigation context. Exploration of these concepts through role-plays and analysis of readings that attempt to offer models of what lawyers do or should do. Interviewing, counseling, and negotiation taught by in-depth class critique of videotaped demonstrations of lawyers performing legal skills and tasks. Simulated out-of-class exercises critiqued by instructor. Field experience (eight hours per week) at UCLA Student Legal Services and other legal service organizations. Students interview and counsel clients about landlord/tenant disputes, debt collection matters, general consumer problems, some criminal law issues, and family law matters. Mr. Binder, Ms. Gillig

**404. Clinical Semester (Clinical).** Students spend one term working full time in a small law firm housed in the Law School Clinic. Under faculty supervision, each student appears in court to argue motions and try cases. Students interview and counsel clients, write and argue motions, prepare written discovery, take depositions, and try at least one case in court. Substantive law areas include housing discrimination, denial of unemployment benefits, and consumer fraud. Students also participate in class sessions and simulated videotaped exercises designed to develop lawyering skills. Subjects include interviewing, counseling, motion practice, civil discovery including depositions, negotiation, trial preparation, and trial advocacy. Mr. Binder, Mr. Blasi, Mr. Taylor

**405. Trial Advocacy (Clinical).** Designed to provide training in the full range of skills needed by a trial advocate. Year-long series of classes emphasizing development of courtroom advocacy and other lawyering skills: case planning, direct and cross-examination of witnesses, opening statement and closing argument, client and witness interviewing, case investigation, negotiation, and examination of expert witnesses. In Fall Semester role-play exercises are legal or nonlegal in nature, capped off with a mock trial. During Spring Semester students actually appear in court and represent indigent clients under direct supervision of instructors. Mr. Bergman, Mr. Derian, Mr. Moore

**405. Simulated Trial Advocacy (Clinical).** Prerequisite or corequisite: course 211. Enrollment priority to third-year students. First half of year-long course 405. Theoretical and practical aspects of trial process; training in skills needed to represent clients in pretrial and trial litigation. Principal function of trials — resolution of disputed questions of fact — and trial lawyer's role in presenting persuasive evidence to judges and jurors who perform that function. Development of specific skills in such tasks as interviewing, fact investigation and analysis, conducting direct and cross-examinations, making opening statements and closing arguments, using exhibits, and making and responding to evidentiary objections, presented through combination of lecture, discussion, demonstration, and simulated role-play exercises. Presentation of a videotaped mock trial at end of semester (no fieldwork component). Mr. Bergman, Mr. Derian, Mr. Moore

**406. Public Policy Advocacy (Clinical).** Role of lawyers in public policy advocacy in context of developing and implementing a strategy for dealing with an actual public policy issue that represents real clients or client groups. Students work jointly on at least one public policy issue. Examination of public policy litigation and nonlitigation approaches to achieving client goals; organizational, political, cultural, and public relations contexts in which such advocacy is carried out. Attention to ethical and professional issues unique to such representation. Use of simulated and actual videotaped exercises to teach lawyering skills applicable to advocacy, including working with clients and client groups to develop effective strategies utilizing all available resources and methods, interviewing clients and witnesses, conducting fact investigation and organizing factual information, developing and utilizing experts and expert witnesses, and evaluating merits of both litigation and nonlitigation approaches. Mr. Blasi, Mr. Taylor

**407. Mediation and Alternative Dispute Resolution (Clinical).** Issues, principles, and skills implicated in use of nonadversarial methods of dispute resolution. Theories and various approaches to conflict resolution, including comparisons among and between adjudication, arbitration, mediation, med-arb, mini-trials, and community dispute centers. Some of the difficulties with alternative dispute resolution, including role of law, inequality among the parties, consent, motivation, enforcement, and effects of alternative dispute resolution. Comparative study of dispute institutions in other political and legal systems. Through skills training and role-play exercises students learn and practice skills necessary to conduct mediation and arbitration sessions. Ms. Menkel-Meadow

**408. Legal Negotiation (Clinical).** Theoretical and practical aspects of process of negotiating transactions and disputes in our legal system. Negotiation theory, using both legal and behavioral sciences materials; differences between litigation and transactional negotiations; context in which particular negotiation strategies and tactics are successfully employed; ethical and normative implications of negotiating; role negotiation plays in our legal system, both in dispute resolution and in legal planning; negotiating, both from planning and behavioral perspectives.

Ms. Menkel-Meadow

**409. Negotiation and Mediation (Clinical).** Theoretical and practical aspects of negotiating and mediating transactions and disputes in our legal system. Negotiation and mediation theory, using both legal and behavioral sciences materials; differences between litigation and transactional matters; context in which particular negotiation and mediation strategies and tactics are successfully employed; ethical and normative implications of negotiations and mediations; role negotiation and mediation plays in our legal system, both in dispute resolution and in legal planning; development of proficiency in negotiation and mediation, both from planning and behavioral perspectives.

Ms. Gillig, Ms. Menkel-Meadow

**412. Street Law: American Legal Education (Clinical).** Students teach law in school classrooms under supervision of a high school teacher and develop own individual curriculum. Students do practice teaching, receive instruction in a variety of teaching methods, and use these methods with their high school classes. Seminar discussion focuses on extent to which teaching is similar to practicing law, and students analogize situations that arise in the teaching of law to its practice. Communication difficulties that frequently arise among lawyers, clients, and laypeople.

Mr. Bergman

**416. Sex, Violence, and Law (Clinical).** Prerequisite: course 211, consent of instructor. Examination of intersection of sexuality, violence, and law, including rape (developing concepts of rape, use of rape trauma syndrome to prove that a rape occurred or to defend a woman charged with killing her rapist, and admissibility of character evidence and evidence of prior sexual conduct) and homicide (sexual homicide, battered woman syndrome, postpartum disorders and infanticide, and evolving notions of murder, "diminished capacity," self-defense, and culpability). Theoretical issues and real-life aspects of prosecuting a sex crime, defending a client charged with a sex offense, representing a person who is the victim of sex abuse, and shaping legislation and policy in these areas. Recurring themes include potential tension between lawyer's role as an advocate and personal values; relationships among values, doctrine, facts, and evidence; claimed differences between men and women; significance of race; value of expert testimony; and political and social implications of recent developments in these areas.

Mr. Garcia

**436. Community-Based Advocacy with Poor Women (Clinical).** Prerequisite: consent of instructor. Limited to eight students. Weekly seminar and supervised fieldwork with a community group in south-central Los Angeles. Recent scholarship envisions poverty lawyering as a multidimensional "collaboration" between professional advocates and community groups. These and other recent theories about race, poverty, and advocacy brought into the real world through work with a group of African American and Latina Head Start parents in south-central Los Angeles. Discussion of readings on such topics as life experiences of poor women of color, social welfare law and its impacts on poor women, and potential of law and lawyering to support processes of community building among poor women in south-central Los Angeles. Students work with Head Start group to provide basic legal education, advocacy, and lay advocacy training to women on such issues as housing, welfare, and educational rights and to seek pro-active responses to long-term community needs.

Ms. White

**445. Planning and Drafting Small Estates (Clinical).** Substantive law of estates, wills, trusts, and tax as those laws relate to testamentary disposition of small estates. Interviewing, drafting, and counseling techniques. Students are assigned clients and interview them to determine their estate planning needs. Students discuss with a supervising probate attorney the kind of estate plan needed and then draft an appropriate plan and review it with the attorney.

Mr. Bergman, Mr. Binder, Ms. Gillig

**500. Seminar: Constitutional Law.** Selected topics in constitutional law.

Mr. Karst, Mr. Varat

**501. Seminar: Tax Systems in Transition.** Prerequisite: course 220. Tax policy issues in context of designing tax systems for countries making transition from a planned to market economy. Review of major tax issues facing government officials in countries in Central and Eastern Europe and former Soviet republics.

Mr. Zolt

**503. Seminar: Criminal Law — Moral Culpability Jurisprudence.** Readings from moral philosophy, moral psychology, and criminal law excuse theory. Examination of competing accounts of when it is appropriate to impose moral blame on individuals for breaching norms governing their behavior. Special attention to two constitutive elements of moral culpability analysis: attributes people must possess to qualify as appropriate addressees of moral norms (moral agency) and conditions under which it is fair to attribute their actions to them (moral responsibility for action). Specific criminal law issues that implicate moral culpability analysis, including execution of adolescents and mentally retarded offenders, criminal responsibility of moral psychopaths, and defenses of duress and provocation.

Mr. Arenella

**503. Seminar: Criminal Law — Police Reform.** Prerequisite: consent of instructor. Various avenues for achieving police reform, including litigation under civil rights statutes, control of police under the U.S. Constitution, police rule-making, and political process. Students work on police misconduct litigation.

Mr. Garcia

**503. Seminar: Criminal Law — Rape.** Legal definition of rape, procedural rules applied in administration of rape statutes, and sentences provided for rape offenses. In order to determine and critically evaluate empirical and moral responsibilities of prosecutors and defense attorneys, rape cases are also examined, as are civil alternatives to rape prosecutions.

Ms. Goldberg-Ambrose

**504. Seminar: Property — Human Embodiment and Property Rights in Body Parts.** Examination of such issues as nature of human embodiment and parts; identity and individuation of transplanted organs across time; intelligibility of the idea of property rights in the body; whether body parts should be allowed to either be given away or sold, whether during life or at death, and relatedly, whether there should be a "market" for body parts; and roles of consent and government regulation.

Mr. Munzer

**507. Seminar: Workplace Sexual Harassment.** Examination of a range of legal problems flowing from charges of on-the-job sexual harassment, including distinctive problems of proof in arbitration and judicial proceedings, conflicts between judicial remedies for alleged harassment victims and labor arbitration remedies for accused harassers, and standards of judicial review of labor arbitration awards in sexual harassment disputes.

Mr. Alleyne

**512. Seminar: Selected Problems in Social Welfare and Health Law.** Prerequisite: consent of instructor. Limited enrollment. Year-long research seminar on topics selected by students with consent of instructor, with emphasis on empirical-policy research outside the School of Law and preferably in the community. Joint class meetings to discuss topics, methods of approach, and preliminary findings, but most of work to be independent research.

Mr. Handler

**513. Seminar: Environmental Law — Regulation of Land Use/Environment of Mexico-U.S. Border Zone.** Consideration of institutions of governance in Mexico and the U.S. which control environmental pollution and which shape land use and urbanization in the border area. Attention to asymmetry in role of state and federal government in formulation of policy in both nations, as well as decline in living conditions and social indicators on U.S. side of the border.

Mr. McGee

**514. Seminar: Comparative Family Law.** Prerequisite: consent of instructor. Focus on Japanese family law, with emphasis on problems of comparative legal analysis; interplay between legal norms and historical, religious, sociocultural, and economic factors. Topics include family registration, adoption, selection of marital partner, breach of contract to marry, divorce, abortion, and juvenile delinquency.

Ms. Bryant

**516. Seminar: International Law — Trade Law.** Public international law affecting private economic activity in areas of trade, investment, and monetary affairs. Roles of several international organizations, such as GATT, IMF, World Bank, UNCTAD, and United Nations Center on Transnational Corporations. U.S. law governing negotiation and implementation of international agreements. Trade law; rules and procedures of GATT and U.S. implementation of GATT obligations through its domestic legislation, including Trade Act of 1974. Functions of International Monetary Fund and World Bank in international trade and investment; problems involving the developing world, including GSP (tariff preferences for developing countries), commodity problems, and access to supplies of important products. Proposals to regulate international investment, including work of UNCTAD and the United Nations Center on TNC, and proposed "Codes of Conduct" designed to govern activities of multinational corporations.

Mr. Trimble

**M519. Seminar: Comparative Japanese Law — Selected Readings.** (Formerly numbered 519.) (Same as Japanese M196.) Prerequisite: reading knowledge of Japanese at third-year level. Designed to introduce students to a variety of Japanese-language legal materials. Reading of law review articles and other sources as time permits (e.g., selections from contracts, cases, or treatises); titles vary from term to term. Classroom work may be coordinated with outside research projects with consent of instructor.

**522. Seminar: Private Land-Use Planning.** Constitutional, statutory, and public policy limits on private ordering in the land-use arena. Limits on racial and religious discrimination, gender and life-style discrimination, restraints on trade and competition, restraints on alienation, and limits on interferences with privacy and personal autonomy examined primarily in context of subdivision covenants and homeowner associations.

Ms. French

**M524. Seminar: Philosophy of Law.** (Same as Philosophy M257.) Prerequisite: consent of instructor. Selected topics in philosophy of law. May be repeated for credit with consent of instructor.

**M526. Seminar: Urban Affairs (2 to 4 units).** (Same as Architecture and Urban Planning M202C.) Consideration of selected aspects of housing law and policy, including current federal and state housing subsidies; remedies of housing consumers; impacts of market discrimination against children, racial minorities, and women; and local governmental laws influencing cost and supply, such as antispeculation and rent control legislation. Catalytic role of economic and community development in expansion of housing supply also considered.

Mr. McGee

**528. Seminar: Indian Law — Tribal Legal Systems.** Historical and contemporary study of tribal legal systems. Examination of classic studies by anthropologists and legal historians of traditional tribal governing structures and dispute-settling mechanisms. Comparison with contemporary tribal constitutions, codes, and practices. Consideration of methodological questions posed by comparative legal study.

Ms. Goldberg-Ambrose

**531. Seminar: Law and Development in Latin America.** Role of law in economic, political, and social change in the developing countries of Latin America, compared to function of law and policy in the U.S. in allocation of wealth and natural resources. Consideration of the civil law tradition in Latin America. Examination of nexus between existing socioeconomic relationships and legal institutions; exploration of role of law as an instrument of both reform and counter-revolution.  
Mr. McGee

**535. Seminar: Arbitrated Alcohol and Drug Workplace Disputes.** Study of evolving arbitral and judicial standards in drug and alcohol workplace disputes. Topics include sufficiency of just-cause to test employees for drugs; disputes over accuracy of urine and blood analysis tests for drugs; role of rehabilitation as a factor in the decision to discipline for drug or alcohol abuse; differing (and possibly discriminatory) treatment of drug-abuse offenders vis-à-vis alcohol abuse offenders; appropriate linkage of off-duty ingestion with on-duty impairment; appropriate impact on the arbitrator of drug and alcohol criminal law procedural and proof standards; judicial review standards for drug- and alcohol-abuse arbitral awards, including effect of the public-policy exception to usual insulation of arbitration awards from review on the merits.  
Mr. Alleyne

**536. Seminar: Appellate Advocacy.** Study of appellate advocacy before state and federal courts, including writs and appeals in civil and criminal matters. Role, structure, and practices of appellate courts. Students participate in written and oral advocacy.  
Mr. Eule, Mr. Reynoso

**540. Seminar: Legislative Advocacy.** Designed to acquaint students with theoretical and empirical aspects of legislative process, how that process works and how it might be improved, and roles played and techniques used by legislative advocates. Structured around a semester-long simulation in which students are assigned roles as either legislators or lobbyists. Possible topic is extent to which telephone companies should be permitted to provide customers with information services. Readings of academic writings on legislative process and substantive materials related to the simulation.  
Mr. Lowenstein

**545. Seminar: Civil Rights — Voting Rights.** Exploration of tension between antidiscrimination law and principles of democratic majoritarianism. Examination of voting rights; ways in which judges and legislators have attempted to provide remedies for racially based exclusions from political and social institutions while upholding American concepts of democracy.  
Ms. Crenshaw

**552. Seminar: Bankruptcy.** Prerequisite: course 248 or 250. Examination of business reorganization provisions of Chapter 11 of U.S. Bankruptcy Code, requiring students to become intimately familiar with Chapter 11 business reorganization law in a practical problem-solving format. Review of complex issues of reorganization law. Students prepare briefs in response to problems and advocate their positions.  
Mr. Bussel, Mr. Klee

**553. Seminar: Race, Gender, and the Law.** Interdisciplinary seminar on legal, social, and political implications of intersection of race and gender, focusing on intersectional dilemmas as manifested in case materials on black women. Use of intersection of race and gender as a means for thinking about approaches to other intersections. Discussion of historical and sociological studies and some literary works.  
Ms. Crenshaw

**555. Seminar: Critical Legal Theory.** In last five years a body of legal theory has emerged, here and in Europe, that draws on Marxist and other radical traditions. Survey of that literature, including bourgeois legal form, relation of law and capitalism (especially their historical interdependence), theory of capitalist state, meaning of "rule of law" under capitalism and socialism, and law and ideology. Application of these theoretical insights to concrete issues in contemporary American law (e.g., in torts, contract, labor, family, and criminal law). Questions of role of law in transition to, and under, socialism.  
Mr. Abel



**555. Seminar: Feminist Legal Theory.** Assumes familiarity with basic concepts of sex discrimination law, gender, and feminism. Current scholarship on law and feminism.  
Ms. Littleton

**555. Seminar: Feminist Legal Theory — Toward Feminist Jurisprudence.** Focus on impact that feminist legal theory has on legal philosophy. Reading of works in feminist legal theory and discussion of effects these theoretical formulations have on legal issues of importance to men and women.  
Ms. Olsen

**555. Seminar: Legal Theory — Economic Democracy.** Over the past decade, economic democracy has enjoyed a renaissance. One often hears that U.S. economy needs more democracy — for practical as well as principled reasons. What kinds of economic gains — in terms of efficiency and competitiveness — may result from less hierarchical, more flexible, and participatory ways of allocating power in various sectors? What kinds of human/political/existential gains? What risks and losses? And what part have, and what part might, lawyers, legal doctrine, and law reform play in these endeavors? Examination of a number of areas of past and present experimentation: industrial, housing, and agricultural cooperatives — their champions and critics; workers' control in large enterprises via pension finance, directorships, worker ownership, and public development authorities — and champions and critics of these ideas.  
Mr. Forbath

**559. Seminar: Sports Law.** Legal issues pertaining to professional and amateur sports. Representative issues include federal labor issues (particularly those raised by collective bargaining and arbitration processes); antitrust issues (including those raised by attempt to control franchise movement, player drafts, and other player restraints); issues raised by individual player/club contracts (including contract terminations and remedies); issues raised by player/agent relationships; issues raised by the NCAA's regulation of amateur sports; and sex discrimination.  
Mr. Derian

**565. Seminar: American Legal History, 1776-1986.** Recommended (but not prerequisite): course 337. Designed for students interested in doing original historical research. Reading of historians whose work illuminates important interpretive or methodological problems. Progress reports and presentations.  
Mr. Forbath

**570. Seminar: Graduate Students — Legal Process and Philosophy.** Prerequisite: LL.M. candidate. In Fall Semester, overview of legal system in the U.S. and comparison with other legal traditions, particularly that of civil law. Emphasis on role of lawyer and operation of procedural law in resolution of disputes by the courts. In Spring Semester, presentation of research projects which form basis for thesis.  
Mr. Handler

**571. Seminar: National Security and the Law.** National and international legal considerations and restraints affecting formulation of foreign policy and protection of national security. Decision-making process, including constitutional balance between executive and legislative branches, foreign power of the president, War Powers Resolution and Treaty Power. Role of bureaucratic politics. Congressional regulation of foreign policy and its attempts to subject intelligence activities to the rule of law. Problem of protecting national security information in a free society and other rights issues. Role of international law affecting national security, including United Nations Charter, and multilateral and bilateral arms control obligations.  
Mr. Trimble

**572. Seminar: Teaching Assistants.** Limited to and required of all teaching assistants for course 110. Helps TAs carry out their work as student editors, counselors, and teachers. Teaching techniques and problems of student/teacher relationship, particularly as they relate to evaluating student writing. Focus on writing and critique of writing. Assignments on prose style, organization, and structure of legal analysis.  
Ms. Franklin, Ms. Maerowitz, Ms. Woods

**576. Seminar: Arms Control and Legal Process.** Examination of role of law, lawyers, and legal process in arms control. Topics include nuclear test ban, non-proliferation, SALT/START/Euromissiles, chemical warfare, and space weapons in order to understand policies and assumptions underlying existing and proposed arms control treaties. Explains how U.S. government decision making works and dynamics of an international negotiation. Verification and compliance issues.  
Mr. Trimble

**581A-581B. Seminar: Child Abuse and Neglect.** Prerequisite: consent of instructor. Limited to Fellows of the Interdisciplinary Training Program in Child Abuse. Augments lectures offered in courses M281A-M281B with discussions of lectures, additional readings, presentation of research and field placement experiences, field trips, and interdisciplinary practice.  
Mr. Goldstein

**582. Seminar: Theories of Process.** Exploration of goals of a procedural system. Is litigation about resolving disputes and keeping the peace? About preserving a delicate political compromise? About furthering substantive goals? About finding the truth? Or about the authoritative promulgation of norms? Each has been proposed as a central goal of civil procedure, and the choice among them has consequences for general design of procedure and procedural details. Writers on this topic include Blackstone, Bentham's attack on Blackstone, modern proponents of alternative dispute resolution, economic analysts of litigation, those who argue that civil litigation has replaced religion as a moral oracle, and those who use comparative law as a way of analyzing American procedure. Using both classical and modern writings on procedure, seminar aims to develop a framework for discussing and criticizing existing procedural system and proposed changes in it.  
Mr. Yeazell

**587. Seminar: Asian Americans and Legal Ideology.** Prerequisite: some background in Asian American studies; technical knowledge of law not required. Advanced undergraduates with credit in Asian American studies may enroll. Asian American experience as it relates to American legal system, considering dominant and oppositional concepts of law. Consideration of primary historical documents to examine ways Asian Americans have been victims of the legal system, as well as astute manipulators of the legal system. Liberal legal concepts of property, rights, equality, and due process have held promise for Asian Americans, but some observers argue that recourse to law is ultimately harmful to goal of genuine community empowerment. Power-sharing notions of justice that move beyond liberal concepts of rights suggested as more progressive alternatives. History of Asian American participation in civil rights movement and current debate over affirmative action and multiculturalism.

**588. Seminar: International Law and the New World Order.** The Soviet empire has crumbled. The U.S. has led a United Nations-endorsed, multilateral, military operation in the Persian Gulf against an aggressor state. Western Europe, and much of North America, has traveled far down the road to becoming single economic units. Do these and related events portend a "new world order?" Exploration of these questions by paying attention to questions involving use of force, arms control, global environmental problems, economic integration, North/South problems, and the United Nations.  
Mr. Setear

**589. Seminar: Securities Litigation.** Prerequisite: course 230 or consent of instructor. Recommended: course 236. Civil and criminal enforcement of federal securities law. Liability under Securities Act of 1933 and Securities Exchange Act of 1934, including civil and criminal penalties for insider trading, SEC enforcement actions, and liability arising out of tender offers. Tactical considerations for class-action shareholders, issuer and director defendants, and settlement strategies.  
Mr. Brown

# Graduate School of Library and Information Science

Beverly P. Lynch, Dean

# 12



Our society has become a world of information. Over half of the nation's workforce is now directly engaged in producing, processing, and distributing information in one form or another. Education, scientific and technical development, banking and financial management, government and corporate management — all depend increasingly on accurate, relevant, and readily available information. New technologies have produced a wealth of forms in which we may distribute and transfer information. Printed media have been supplemented by photographic, audiovisual, and computer-processible forms. As a result, libraries and information systems of all kinds have become crucial agencies for the management of the resulting flood of information.

The field of library and information science is concerned with the processes involved in these information agencies and, more generally, in the use of information in our society. How are records with essential information, whatever their form may be, to be acquired, preserved, organized, retrieved, and made available? How is information best used in making decisions and in meeting the goals of society as a whole, as well as those of specific organizations?

Education in the field must provide competence with both old and new methods for the processing of information and old and new approaches to the management of libraries, information centers, and information systems in organizations of all kinds. It is this goal to which UCLA's Graduate School of Library and Information Science is dedicated.

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*Photo: The John Dryden collection at the William Andrews Clark Memorial Library.*

# Graduate School of Library and Information Science

101 Graduate School of Library and Information Science Building,  
(310) 825-8799

## Professors

Marcia J. Bates, Ph.D.  
Christine L. Borgman, Ph.D.  
Beverly P. Lynch, Ph.D., *Dean*  
Elaine Svenonius, Ph.D.

## Professors Emeriti

Page Ackerman, B.A., B.S.L.S.  
Harold Borko, Ph.D.  
Robert M. Hayes, Ph.D.  
Seymour Lubetzky, M.A., LL.D.  
Lawrence Clark Powell, Ph.D., Litt.D., L.H.D., H.H.D.  
Russell Shank, D.L.S.  
Robert Vosper, M.A., LL.D.  
Raymund F. Wood, Ph.D.

## Associate Professors

Donald O. Case, Ph.D.  
Mary Niles Maack, D.L.S.  
John V. Richardson, Ph.D.  
Diana M. Thomas, Ph.D.

## Assistant Professors

Clara Chu, Ph.D.  
Michele Cloonan, Ph.D.  
Daniel P. Dabney, J.D., *Acting*  
Efthimis N. Efthimiadis, Ph.D.  
Ling Hwey Jeng, Ph.D.  
Virginia A. Walter, Ph.D.

## Lecturers

Jenifer Abramson, M.L.S.  
Dorothy J. Anderson, Ph.D.  
John Bidwell, D.Phil.  
Barbara Booth, M.L.S.  
Keri Botello, M.L.S.  
Alison Bunting, M.L.S.  
Susan C. Curzon, Ph.D.  
Kathleen Deeney, M.L.S.  
Zorana Ercegovac, Ph.D.  
Leon Ferder, Ph.D.  
Miki Goral, M.L.S.  
Esther Grassian, M.L.S.  
Bethany Johnson, M.L.S.  
Joan Kaplowitz, Ph.D.  
Ludwig Lauerhass, Ph.D.  
Teresa Omidmalar, M.L.S.  
Mary I. Purucker, M.L.S.  
Marcia Reed, M.L.S.  
Maureen Russell, M.L.S.  
Myra Saunders, J.D., M.L.S.  
Rita Scherrei, Ph.D.  
Lise Snyder, M.L.S.  
Stephanie Sterling, M.L.S.  
Martha Yee, M.L.S., Ph.D.  
Gail A. Yokote, M.L.S.  
Elizabeth R. Baughman, M.L.S., M.A., *Senior Emerita*  
Elizabeth R. Eisenbach, M.L.S., *Senior Emerita*

## Adjunct and Visiting Professors

Nicolas Barker, M.A., *Visiting*  
G. Edward Evans, Ph.D., *Adjunct*

Applicants may write to the Graduate School of Library and Information Science, 101 Graduate School of Library and Information Science Building, UCLA, Los Angeles, CA 90024-1520, for the school's announcement and application materials.

## Degrees Offered

Master of Library Science (M.L.S.)  
Post-M.L.S. Certificate of Specialization  
Doctor of Philosophy (Ph.D.) in Library and Information Science

## Master of Library Science

### Admission

Students are admitted for Fall Quarter only. In addition to Graduate Division requirements and application procedures (see Chapter 3), the school requires:

- (1) A statement of purpose.
- (2) Graduate School of Library and Information Science application materials provided in the school's announcement.
- (3) An official report of a score on the General Test of the Graduate Record Examination (GRE) taken within the past five years (may be waived for holders of a master's or doctoral degree from an accredited U.S. institution).
- (4) For international students whose native language is not English, an official report of scores received on the Test of English as a Foreign Language (TOEFL), including the Test of Written English (TWE).
- (5) Three letters of recommendation.
- (6) Satisfaction of the following entrance requirements: (a) a college-level course in statistics (three semester units or four quarter units) within the last five years with a minimum grade of C. The course must have covered descriptive and inferential statistics. In exceptional circumstances it is possible to meet this requirement by passing a competency examination in statistics administered by GSLIS; (b) a college-level course in computer programming (three semester units or four quarter units) within the last five years with a minimum grade of C. Most standard languages such as BASIC, C, COBOL, FORTRAN, or PASCAL are acceptable, as is a college-level course in the use of data management systems such as dBASE IV, KNOWLEDGEMAN, or SQL. At least one third of the course grade should be based on programming assignments. In ex-

ceptional circumstances it is possible to meet this requirement by passing a competency examination in computer programming administered by GSLIS.

Entrance requirements should be completed before you begin the M.L.S. program. However, one requirement may be satisfied in Fall Quarter of your first year.

Applicants not meeting the required grade-point average of 3.0 may be admitted in exceptional cases if GRE scores, letters of recommendation, or other factors indicate unusual promise. While work experience is not a requirement for admission, consideration is given to such experience in reviewing the total application.

The committee on M.L.S. and certificate admissions may request a report of an interview conducted by a person designated by the dean as qualified to conduct an interview.

For further information on the proficiency in English requirements for international graduate students, refer to "Graduate Admission" in Chapter 3.

### Course Requirements

As a full-time student, you are normally required to enroll in three courses (12 quarter units) per term in order to complete the program in six terms. Part-time enrollment may be permitted, but you must complete the program in 10 terms.

Eighteen courses (72 quarter units) are required for graduation from the M.L.S. program. You take 20 units of core courses, four research methods units, and 48 elective units. Coursework must provide evidence both of basic professional competencies and of knowledge in a field of specialized competence.

*Basic Professional Competence* — The requirement is met by completing five core courses (Library and Information Science 200, 201, 203, 220, 441) and at least one graduate-level research methodology course such as 205, 240, 241, 260, 261, or 290. In certain cases, prior coursework or work experience may justify replacing a course by a validation examination administered by the school, but this is not encouraged and should be used only for the purpose of increasing the extent to which you pursue a specialization.

Only in unusual cases will librarianship coursework taken elsewhere satisfy the basic competency requirements.

*Specialized Competence* — Completion of a course of study is required as evidence of knowledge of a field of specialization in infor-

mation policy, information access, information systems, libraries and other information institutions, or information organization. The field of specialization and the specialized course program must be approved by a faculty adviser. The requirement ordinarily is met by the completion of 12 additional courses, which may include internships. Relevant coursework in other departments or schools is encouraged. You may petition to have prior graduate-level coursework applied to your specialization.

During the second year, you may apply for an internship of one to three terms either on campus or off campus at a library or information center. The internship is a regularly scheduled course and may be applied toward the 18 required courses.

No more than eight units of course 596 may be applied toward the total course requirement; only four units may be applied toward the minimum requirements of the Graduate Division. In order to enroll in any S/U graded course, including 500-series courses, you must be in good academic standing.

### Comprehensive Examination Plan

A comprehensive examination consisting of two components is required. The written test breadth component is offered in Fall, Winter, and Spring Quarters and is designed to demonstrate your understanding of library and information science services as a totality. It does not cover the basic professional competencies individually but deals with the field in a unified form. To be eligible to take the written test component, you must complete one year of academic residency, satisfy all outstanding entrance requirements, complete (or be in the process of completing) all five core courses and the research methods course, and be in good academic standing.

The specialization component of the comprehensive examination requires you to complete an elective course in which a major paper (normally in the area of your specialization) is produced. A grade of B or better must be earned in the course; you may not use the same course to satisfy both the paper and the research methods requirements.

### Cooperative Degree Programs

To participate in a cooperative program, you must make application to and be admitted by both this school and the other UCLA school or department. Fulfilling the combined set of program requirements normally takes three years.

### M.A.-History/M.L.S.

This concurrent degree program of the Graduate School of Library and Information Science and the Department of History allows you to combine historical study with the tools of the information professional and to obtain two de-

grees — the M.L.S. and the M.A. in History. The best sequence of coursework should be discussed with the advisers from this school and the History Department.

### M.A.-Latin American Studies/M.L.S.

This specialization is an articulated degree program of the Graduate School of Library and Information Science and the Latin American Studies Program. You can obtain two degrees — the M.L.S. and the M.A. in Latin American Studies. However, no course may be used for credit toward more than one degree. The program provides broad training in library and information science, as well as the opportunity to explore and analyze on an advanced level the social, political, and cultural issues characteristic of Latin American societies.

### M.B.A./M.L.S.

A concurrent degree program jointly sponsored by the Graduate School of Library and Information Science and the John E. Anderson Graduate School of Management, this specialization is designed to provide an integrated set of courses for students who seek careers which draw on general and specialized skills in the two professional fields. Students should request application materials from both the M.B.A. Admissions Office, John E. Anderson Graduate School of Management, and the Graduate School of Library and Information Science.

### Post-M.L.S. Certificate of Specialization

The Post-M.L.S. Certificate of Specialization Program meets the need for specialized training in various areas of information policy, information access, information systems, libraries and other information institutions, and information organization, as well as research competence. The certificate is designed for holders of the M.L.S. degree who either (1) want to redirect their careers and need the structure of a nine-course program and specialization paper to accomplish this, (2) want to update knowledge and skills across the discipline and require the structure of a nine-course program and specialization paper to accomplish those goals, or (3) recently graduated from a less comprehensive M.L.S. degree program than that offered by UCLA and did not have the opportunity to specialize.

Admission requirements vary slightly for each field of specialization, but the basic requirements are a bachelor's (or higher) degree in letters and science, an M.L.S. degree from an American Library Association-accredited school, and unconditional admission to graduate standing by the UCLA Graduate Division.

Your course program may begin in any term of the academic year. If you are admitted for a preliminary term to complete prerequisite courses, that term is not counted toward the minimum residence requirements.

Part-time enrollment is encouraged to provide flexibility for the working librarian. Opportunities for relevant coursework outside the department and internships, both on and off campus, are available.

Five general areas of specialization have been authorized: information policy, information access, information systems, libraries and other information institutions, and information organization. Further specialization within these fields is possible. A minimum of nine courses (100-, 200-, 400-, and 500-series) must be completed in the Graduate School of Library and Information Science and other departments of the University.

In addition to taking coursework in your area of specialization, you must complete a paper or project in that area, which demonstrates a considerable amount of work and thought and is of publishable quality. The specialization paper or project is required even if you have an advanced academic degree in which a thesis or dissertation was a requirement and must be approved by your faculty adviser.

## Ph.D. Degree

### Admission

Students are admitted for Fall Quarter only. In addition to Graduate Division requirements and application procedures, the school requires:

(1) A master's degree or the equivalent in an academic or professional field of study from an institution of recognized standing.

(2) Evidence of basic professional competence. This would be satisfied by an M.L.S. degree from a program accredited by the American Library Association or by completing Library and Information Science 200, 201, 203, 220, 441.

(3) Satisfaction of the following entrance requirements: (a) reading knowledge of a foreign language, which may be met by completing three quarters or two semesters of college-level study in the language with minimum grades of C or by passing the Graduate School Foreign Language Test (GSFLT) with a minimum score of 500. The school will accept a passing grade on a foreign language test administered by another UCLA department that meets that department's graduate degree requirements or, for languages not covered by the GSFLT, the passing of a reading test supervised by the appropriate UCLA foreign language department; (b) a statistics requirement, satisfied by completing a college-level course with a minimum grade of C; (c) a computer programming requirement, met either by completing a college-level course with a minimum grade of C or by passing a proficiency examination administered by the school (most standard languages such as BASIC, C, COBOL, FORTRAN, and PASCAL are acceptable, as is a college-level course in the use of data management systems such as dBASE IV, KNOWLEDGEMAN, or SQL).

(4) A statement of purpose which identifies your proposed area of specialization, accompanied by appropriate evidence of qualifications for pursuing a doctoral program (in the form of published work, master's thesis, or two research papers, written in English).

(5) An official report of a score on the General Test of the Graduate Record Examination (GRE) taken within the past five years. There is no minimum score, but admitted applicants typically score over 1,100.

(6) For international students, the same scores of tests listed in item 4 under the M.L.S. degree.

(7) Three letters of recommendation.

(8) Graduate School of Library and Information Science application materials provided in the school's announcement.

Favorable consideration may be given to students who have made distinguished contributions to the profession while working as a practicing professional (e.g., in publications and/or work experience).

### Major Fields or Subdisciplines

You are expected to specialize in a subfield in one of three major fields:

- (1) Information storage and retrieval systems.
- (2) Policies and issues in library and information science.
- (3) Information seeking and use.

The school strictly limits the specific subfields which, at any time, are accepted for doctoral work.

### Course Requirements

Courses required in your first year include a doctoral seminar in each area of the written qualifying examinations (Library and Information Science 273, 274, 275) and a research sequence (courses 290 and 276) leading to the completion of a research project. In addition, you take a variety of other courses, both inside and outside the school, relevant to your individual program.

### Qualifying Examinations

You are required to pass written qualifying examinations in each of the three areas of study listed above, including coverage of historical aspects in at least one of the areas as well as technical aspects. These are scheduled during one week in a term. If you fail one of the sections of the three-part examination, it may be repeated. Should you fail two sections, all three must be repeated.

After passing the written examinations, you are required to pass the University Oral Qualifying Examination, which is based on your dissertation proposal.

You are encouraged to start work on your proposal while taking courses in preparation for the written qualifying examinations. The pro-

posal should, in most cases, be completed within one year after passing the written examinations.

The oral examination covers the significance of your selected research topic, the methodology and feasibility of your research, and the depth of your knowledge in the specific field of your proposed dissertation research.

Your doctoral committee decides, after the oral examination, whether the examination has been passed. If the proposal is not accepted, you do not pass the examination.

### Dissertation/Final Oral Examination

The third formal requirement of the program is that you research, write, and defend a dissertation. The final oral examination, required of all Ph.D. students in the school, is administered by members of the doctoral committee, who also evaluate the dissertation.

### Upper Division Courses

Courses 110 and 140 may not be applied toward the M.L.S. degree; courses in the 111 series may be applied toward the M.L.S. degree with approval of faculty advisers.

**100. Perspectives on Literacy.** Lecture, two hours; discussion, two hours. Prerequisite: sophomore standing. Open to M.L.S. students and to graduate students from other schools/departments. Interdisciplinary introduction to literacy as a historical, social, and political issue. Topics include culture and literacy, historical development of literate societies, social definitions of illiteracy, literacy campaigns, literacy as a national and local policy issue.

**110. Information Resources and Libraries.** Prerequisite: sophomore standing or consent of instructor. Not open for credit to M.L.S. students. Introduction to bibliographic and information resources and relevant research methodology, covering both general and specialized materials. Designed to facilitate knowledgeable use of libraries and efficient retrieval of information. Some sections focus on specific subject areas (such as science and technology).

**111A-M111E. Ethnic Groups and Their Bibliographies.** Introduction to bibliographical and research tools and methods for students with interests in ethnic groups. **111A.** American Indian History and Culture; **111B.** African American History and Culture; **111C.** Latino History and Culture; **111D.** Asian American History and Culture; **M111E.** Jewish History and Culture. (Same as Jewish Studies M111E.) Sections on other ethnic groups may be added. Offered in collaboration with the several centers for ethnic studies. May not be repeated for credit.

**124. Information Access Systems.** Exploration of new and established channels for providing information to the general public, including videotex, electronic publishing, data bases, information utilities, computer mail and bulletin boards, and conventional library operations. Each information technology studied on basis of its history, economics, technical characteristics, relation to other media, and potential for social change.

### Graduate Courses

Upper division undergraduate students must obtain consent of the instructor to enroll in 200-series courses and consent of the dean of the school to enroll in 400-series courses.

Graduate students from other schools or departments who wish to take courses in the Graduate School of Library and Information Science also must obtain consent of the instructor prior to enrolling.

The following courses are offered infrequently: 229A, 230, 241, 246, 262, 282, 464, 466, 486, 487C, 487D.

**200. Information in Society.** Lecture, two hours; discussion, two hours. Examination of processes by which information and knowledge are created, integrated, disseminated, organized, used, and preserved. Topics include history of communication technologies, evolution of literacy, development of information professions, and social issues related to information access. S/U grading.

**201. Information Structures.** Required core course. Introduction to various systems and tools used to organize materials and provide access to them, with emphasis on generic concepts of organization, classification, hierarchy, arrangement, and display of records. Provides background for further studies in cataloging, reference, information retrieval, and data base management.

**M202. Folklore Archiving.** (Same as Folklore M202.) Lecture, two hours; laboratory, two hours. Exploration and analysis of alternative data indexing, storage, and retrieval systems and procedures for folklore archival collections, supplemented by firsthand experience in creating and managing data bases, utilizing both manual and computerized techniques.

**203. Design of Library and Information Services.** Lecture, two hours; discussion, two hours. Principles and methods for planning and designing user-driven library and information services. Principles and methods for assessing information needs of designated populations and for designing services that meet those needs.

**205. Historical Methodology of Library and Information Science.** Prerequisite: course 200. Introduction to historical research as it relates to library and information science. Identification of key primary and secondary source material for writing history in the field. Critical analysis of selected histories of various areas in the profession. Problem-oriented approach.

**206A-206Z. Seminars: Historical Topics (2 to 4 units each).** Special studies in a variety of historical problems. Topics and units may vary according to the subject.

**207. International Issues and Comparative Research in Library and Information Science.** History and development of international organizations and programs in library and information science. Identification of key issues in international exchange of information. Introduction to comparative method as procedure for study and research.

**210. Seminar: Descriptive and Bibliographical Cataloging.** Prerequisites: courses 410, 411, or equivalent. Specialized studies in selected areas of descriptive and bibliographical cataloging (e.g., purposes, principles, instructional development, potentialities of automation). May be repeated once.

**211. Seminar: Subject Control of Library Materials.** Prerequisites: courses 410, 411, or equivalent. Study of selected problems in design and use of verbal subject headings and classification systems. Manual and mechanized systems. May be repeated once.

**220. Information Access.** Prerequisites: courses 200, 201. Provides fundamental knowledge and skills enabling information professionals to link users with information. Overview of structure of literature in different fields; information-seeking behavior of user groups; communication with users; development of search strategies using print and electronic sources.



**221. Bibliography of Science and Engineering.** Prerequisite: course 220. Patterns of communication and flow of information among scientists and engineers. Scientific and technical literature, with emphasis on on-line sources, special types of publications, research material, reference and bibliographical aids to the natural sciences and engineering.

**222. Bibliography of the Health and Life Sciences.** Prerequisite: course 220. Literature of the medical and life sciences. Information needs of health professionals. Emphasis on on-line sources, special types of publications, reference and bibliographic aids to the health sciences.

**223. Literature of the Social Sciences.** Prerequisite: course 220. Seminar on literature of the social sciences, including review of classics in the various fields, monumental source collections, periodicals, bibliographies, catalogs, indexes, abstracts, bibliographic and nonbibliographic data bases, etc. Trends in scholarly and popular writing. Interdisciplinary nature of the literature.

**224. Literature of the Humanities and Fine Arts.** Prerequisite: course 220. Seminar on literature of the humanities and fine arts, including review of classics in the various fields, comparisons of editions, periodicals, bibliographical apparatus, and reviewing media. Trends in scholarly and popular writing.

**M225. Latin American Research Resources.** (Same as History M265 and Latin American Studies M200.) Seminar, three hours. General and specialized materials in fields concerned with Latin American studies. Library research techniques provide experience and competency required for future bibliographic and research sophistication as basis for enhanced research results.

**226. General Reference Work.** Prerequisite: course 220. General reference materials (not specific to subject access), with advanced work in reference process and in cognitive and behavioral aspects of inquirers and expert reference librarians.

**228. Legal Bibliography.** Introduction to source materials of the law, with emphasis on primary authority, but covering as well secondary authority and indexes and finding aids which the lawyer and professional law librarian use to gain access to legal information.

**229A. African American Bibliography.** Prerequisite: consent of instructor. Resources for study of African American history, culture, and literature. Problems of identification, description, subject analysis. Bibliographical and reference apparatus.

**M229B. Africana Bibliography and Research Methods.** (Same as African Area Studies M229B.) Problems and techniques of research methodologies related to Africana studies. Emphasis on relevant basic and specialized reference materials, using full range of available information resources, including library collections of books, serials, and computerized data bases.

**M229C. Introduction to Slavic Bibliography (2 units).** (Same as Slavic M229.) Prerequisite: consent of instructor. Introduction to Slavic and East European bibliography for the humanities and social sciences. Emphasis to be determined by requirements and background of enrolled students. Topics include relevant library terminology and concepts; survey of languages and transliteration systems; acquisition of Slavic and East European library materials; Slavic and East European scholarship in the West; relevant reference sources, archival resources, and research methods; survey of on-line data bases; compilation of bibliographies. S/U grading.

**230. History of Publishing and the Book Trade.** Prerequisite: course 200. Publishing and book trade history, with particular reference to libraries and book collecting, changing aspects of book production and distribution within the setting of cultural history.

**231. Contemporary Information Industry and Distribution of Information.** Examination of major institutions and processes of information production and distribution in contemporary society — informational context in which libraries operate. Emphasis on changing market structures; emerging roles of nontraditional information providers such as financial intermediaries, computer and telecommunications companies, and entertainment industry conglomerates; and new media of publication and dissemination.

**240. Principles of Information Systems Analysis and Design.** Theories and principles of special systems development, including determination of requirements, technical design and evaluation, and internal organization.

**241. Measurement and Evaluation of Information Systems and Services.** Prerequisite: one research methods course. Recommended: one library automation course. Information systems and services from points of view of their cost and effectiveness in meeting desired objectives. Review of principles of costing. Study of literature in which measures have been developed to evaluate effectiveness of document collections, reference and information retrieval services, document delivery systems, networking, and technical services, including circulation, acquisitions, and document description.

**242. Information Retrieval Systems.** Prerequisites: courses 201, 220. Survey of methods of file organization, retrieval techniques, and search strategies in control of information in computerized form.

**243. Human/Computer Communication.** Survey of issues related to human/computer communication. Role of the computer in society, psychological aspects of user behavior, and applications of interactive computer systems considered for their significance to systems design and user training. Students perform several on-line assignments and write term paper on one of the topics covered in course.

**245. Data Base Management Systems.** Theories, principles, and practicalities of data base systems, including data models, retrieval mechanisms, evaluation methods, and storage, efficiency, and security considerations.

**246. Social Aspects of Information-Oriented Society.** Analysis of social evolution of information-oriented societies. Historical factors and current trends explored through discussion of selected international and domestic issues. Implications for information policy.

**247. User-Centered Design of Information Retrieval Systems.** Lecture, two hours; discussion, two hours. Prerequisites: courses 201 and 220, or consent of instructor. Design implications of interaction between users and the features of automated information systems and interfaces that are specific to the information-seeking process. Emphasis on search strategy and subject access through use of thesauri and other vocabularies.

**249. Seminar: Special Topics in Information Science.** Prerequisites: courses 200, 201, and at least one from 242, 243, 247, 280, or 405, or consent of instructor. Content varies from term to term to allow emphasis on specialized topics such as vocabulary control, file design, indexing, classification, text processing, measurement of relevance, evaluation of information systems, and social and policy issues related to information technology and services.

**251. Reading and Reading Interests.** Interests of the common reader, excluding children, with special reference to types of library patrons. Fiction and subject categories, popular and standard: philosophy, religion, social sciences, art, music, literature, history, science. Influence of paperbacks, best sellers, and current interest books on reading habits.

**253. Contemporary Children's Literature.** Reading interests and correlative types of literature surveyed with reference to growth and development of children. Emphasis on role of the librarian in responding to needs and abilities of children through individualized reading guidance.

**260. Historical Bibliography.** Prerequisites: courses 200 and 402, or consent of instructor. History of letterpress formats (books, broadsides, magazines, newspapers, some music, etc.) as well as materials and methods of production, distribution, and readership in their social, political, and economic context. Emphasis varies but is usually on developments prior to 1800. Attention to historiography of the field, including antiquarian, Anglo-American, and *histoire du livre* approaches.

**261. Analytical Bibliography.** The book as a physical object and its relationship to transmission of the text. History and methods of analytical bibliography, with particular emphasis on handpress books.

**262. Seminar: Historical Bibliography.** Prerequisite: course 260 or consent of instructor. Special studies in history of books and publishing. Topics vary from term to term to allow emphasis on a particular historical period, geographical area, or other specific aspect, such as a form of publication, genre, or material of production (e.g., paper or type). May be repeated for credit with consent of instructor.

**271. Seminar: Intellectual Freedom and Information Policy Issues.** Investigation of concept of intellectual freedom, information policy issues, civil liberties and civil rights, censorship, and other restraints on access to information. S/U grading.

**272. Research Seminar: Library and Information Science.** Prerequisite: doctoral standing or consent of instructor. Emphasis on recent contributions to theory, research, and methodology. May be repeated for credit. S/U grading.

**273. Doctoral Seminar: Information Storage and Retrieval Systems.** Prerequisite: doctoral standing or consent of instructor. Intellectual principles for organization of information, including principles for design of systems for acquiring, organizing, and retrieving information. Also includes system-specific user studies to extent that design of information systems is predicated on their evaluation and use.

**274. Doctoral Seminar: Policies and Issues in Library and Information Science.** Prerequisite: doctoral standing or consent of instructor. Examination of social, political, and economic influences in development of library and information science and management of information organizations and resources.

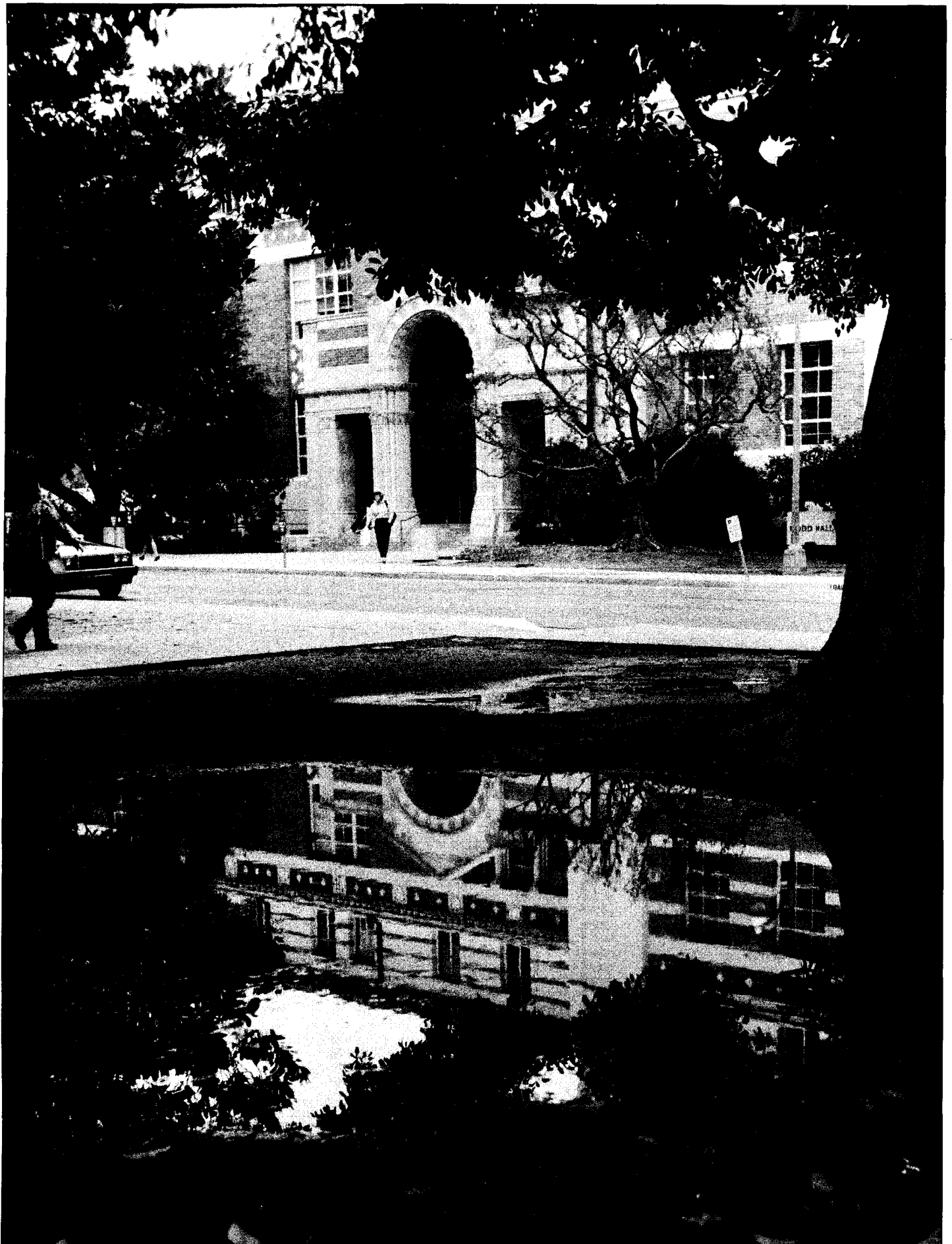
**275. Doctoral Seminar: Information Seeking and Use.** Prerequisite: doctoral standing or consent of instructor. Examination of behavioral and cognitive aspects of inquirer's information needs and uses, including inquirer's characteristics, information problems, psychological needs, and uses of information and information technologies, and aspects of question negotiation.

**276. Doctoral Course: Research Design. Seminar,** three to four hours. Prerequisites: course 290 and doctoral standing, or consent of instructor. Analysis and evaluation of research from library and information science.

**280. Information-Seeking Behavior.** Study of factors and influences, both individual and social, associated with human beings needing, using, and acting on information. Topics include information theory, human information processing, information flow among social and occupational groups, and research on information needs and uses.

**281. Information Resources for Business.** Prerequisite: course 220 or consent of instructor. Introduction to information needs of the business world. Business guides, encyclopedias, directories, yearbooks, indexes, loose-leaf services, government publications, data bases, and other sources of business literature.

**282. Records Management (2 units).** Principles of records control from creation to disposition. Designed as overview of records and information management to make students aware of information processing problems of business and how a coordinated records and information management program can improve information access and utilization.



**286. Seminar: Information Access.** Prerequisites: course 220, one from 221, 223, 224, 226, 228, 281, 425, 473. Discussion of policies and issues related to basic and advanced reference materials, reference process, and psychological aspects of inquirers and expert reference librarians.

**289. Information Services in Culturally Diverse Communities.** Issues in provision of information services in a multiethnic and multilingual society. Understanding role of information institutions in promoting cultural diversity and preserving ethnic heritage.

**290. Research Methodology.** Prerequisite: consent of instructor. Role of research in bibliography, librarianship, and information science. Identification and design of research problems. Historical, statistical, analytical, and descriptive techniques.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

**400. Information Professions.** Historical and comparative overview of information professions and functions of libraries and information centers in society. Unity of librarianship and information science, highlighted through discussions of computer applications to information storage and retrieval systems, natural language text processing, and automation of various library processes. S/U grading.

**402. Fundamentals of Bibliography.** Prerequisite: course 200. Organization, control, and elements of bibliographical apparatus, new techniques and tools, theory, methods, and trends in bibliographical research in relationship to librarianship. Development and fundamentals of several branches of bibliography: enumerative (or systematic), physical (analytical or critical, descriptive).

**405. Automation of Library Processes.** Overview of major components of library automation: circulation control, acquisitions and serials, public access information systems, and data conversion. Relationships among various automation entities, including internal library automation, networks and vendors (such as bibliographic utilities, regional networks, and on-line services), and automation of parent organizations (universities, municipalities, corporations, and government agencies). Developments in standards for information processing and new information technologies.

**410. Descriptive Cataloging.** Entry and description of library materials. Constitution, structure, and form of the library catalog. Cataloging services, tools, and procedures. Cataloging rules and their application.

**411. Introduction to Subject Access: Alphabetic-Subject and Systematic Indexing.** Lecture/discussion. Prerequisite: course 410. Overview of major alphabetic-subject and systematic indexing languages and their use in manual and on-line environments, including theory and application of Library of Congress subject headings and of Dewey decimal and Library of Congress classifications.

**412. Cataloging and Classification of Nonbook Materials.** Prerequisites: courses 410, 411. Problems in cataloging and classification of selected non-book materials (e.g., films, maps, pictorial works, sound recordings) as separate collections and integrated collections.

**413. Thesaurus Construction (2 units).** Overview of major thesauri in use in manual and on-line environments. Emphasis on their construction and evaluation and principles underlying their design.

**414. Principles of Indexing and Abstracting (2 units).** Basic professional techniques, concepts, and methods of indexing monographs, serials, and specialized materials, of preparing informative and indicative abstracts, and of analyzing secondary abstracting and indexing services as library reference tools.

**425. Computer-Based Information Resources (On-Line Searching).** Prerequisite: course 220 or consent of instructor. Emphasis on use of reference and resource data bases and different vendor systems. File structure and hardware requirements. Analyses of information needs and investigation of data bases addressing those needs.

**426. User Education/Bibliographic Instruction: Theory and Technique.** History, theory, methods, and materials of user education/bibliographic instruction in libraries and other information retrieval environments. Examination of a variety of user education/bibliographic instruction theories and methodologies, including overview of planning and administration. Identification of problems in user education/bibliographic instruction. Applications of methods of teaching use of libraries and information resources.

**429. Printing for Bibliographers.** Prerequisites: course 260 or 261, consent of instructor. Printing processes as related to bibliography and librarianship. Discussions, demonstrations, and experiments in design, composition, and presswork, with special emphasis on the 19th-century handpress. S/U grading.

**430. Collection Development and Acquisition of Library Materials.** Background of publishing and the book trade (new and antiquarian) pertinent to collection development in public, school, academic, and special libraries. Theory and practice of collection development and management. Organization and administration of acquisitions departments.

**441. Management Theory and Practice for Information Professionals.** Principles and practice of management in all types of organizations where information professionals work.

**442. Library Personnel Administration.** Basic principles of personnel management. Survey of current personnel practices in libraries; how basic principles apply or need to be modified to fit the library setting.

**446. Library Services and Literature for Youth.** Overview of literature and programs which are of interest to young adults (seventh grade and above). Discussion of special problems in working with young people and psychology of the teenager.

**461. College, University, and Research Libraries.** Organization, administration, collections, facilities, finances, and problems of college and university libraries and their relationships within institutions of which they are a part. Functions of research libraries and work of their staffs in serving scholars.

**463. Public Libraries.** Government, organization, and administration of municipal, county, and regional public libraries; developments in changing patterns of public library service.

**464. School Libraries.** Elementary and secondary school libraries as multimedia instructional materials centers. Relationships of school libraries to school programs and curricula. Emphasis on administration, planning materials, services, and equipment.

**465. Library Services and Programs for Children.** Philosophy and objectives of children's services in public and school libraries. Emphasis on services to groups and techniques of program planning which incorporate storytelling, puppetry, nonprint media, etc.

**466. Storytelling.** Lecture, two hours; demonstration, two hours. Theory and practice of telling stories to children and adults in public and school libraries. S/U grading.

**467. Seminar: Current Topics in Public Library Administration.** Prerequisite: course 463 or consent of instructor. Special studies in public librarianship, with strong emphasis on techniques and problems of public library administration. Topics, which vary to allow in-depth examination of current issues and individually selected concerns, emphasize those aspects of management which are distinctive of public libraries. Particular attention to funding and budgetary matters, impact of new technologies, and marketing of public library services.

**470. Special Libraries and Information Centers.** Organization, administration, collections, facilities, finances, and problems of special libraries and of special collections within general libraries. Methods of handling nonbook materials. Current trends in documentation and mechanization.

**471. Health and Life Sciences Libraries.** Prerequisite or corequisite: course 441. Organization, administration, services, and problems of health and life sciences libraries; relationships with institutions of which they are a part and with the community.

**472. Law Librarianship.** Introduction to profession of law librarianship; organization of professional associations and their activities; character and distribution of law libraries throughout the U.S.; distinctive characteristics of law library problems and their solutions.

**473. Government Information.** Introduction to nature and scope of government information promulgated by the federal government, as well as by state, municipal, international, and foreign governments. Problem-oriented approach.

**485. American Archives and Manuscripts.** Prerequisite: consent of instructor. Identification, description, subject analysis, and organization of records contained in archives and manuscript collections. Administration. User requirements. Problems of acquisition, legal title, literary property, preservation, accessibility, and use.

**486. Issues and Problems in Preservation of Library Materials.** Introduction to fields of library conservation and preservation, with emphasis on preservation administration.

**487A-487Z. Special Studies in Library and Information Science (2 to 4 units each).** Examination of specialized topics of professional interest. Topics and units vary according to subject and may include conservation of materials, business information sources, problems in library management, current issues in cataloging, etc.:

**487A. Scholarly Communication and Bibliometrics.** Prerequisites: graduate or senior undergraduate (by petition) standing, one or more courses in statistics. Recommended: course 280. Survey of current theory, method, and empirical studies at intersection of scholarly communication (study of how scholars in any field use and disseminate information through formal and informal channels) and bibliometrics (application of mathematics and statistical methods to books and other media of communication).

**487B. Expert Systems: Knowledge-Based Computer Programs in Reference Service.** Prerequisite: course 220. Artificial intelligence (AI) is the intersection of several disciplines, including cognitive science, computer science, decision sciences, linguistics, mathematics, neuroscience, philosophy, and psychology.

**487C. Advanced Legal Bibliography.** Examination of legal materials and research techniques not covered in course 228, including current and historical English legal materials, foreign and international law sources, administrative law materials, and special subject areas such as taxation, labor, securities, antitrust. Special emphasis on legislative history sources and research techniques and computer-assisted legal research. New legal research techniques and tools.

**487D. Seminar: Current Issues in Librarianship.** Prerequisite: consent of instructor. Identification, analysis, and discussion of critical issues currently facing the profession. May be repeated once.

**487F. Special Studies in Children's Literature.** Historical perspective that compares and contrasts aspects of children's literature in Britain and the U.S.

**487G. Social Implications of Computer Technology.** Seminar course in which students and instructor study and report on impact of computerization on education, government and politics, library services, medical services, business and finance, arts and humanities, employment, privacy, and other areas of interest.

**491. Interpersonal Communication Issues in Library Systems.** Examination of interpersonal communication patterns in library management and staff relations, in resource sharing, and in providing information services. Emphasis on relationships within an organizational environment and on effective communication styles in decision making, managing conflict, and implementing change. S/U grading.

**495. Training and Supervision of Teaching Assistants (2 units).** Hours to be arranged (20 hours per term). Prerequisite: appointment as a teaching assistant or Extension Division instructor. Orientation, preparation, and supervision of graduate students who are involved in teaching an undergraduate or Extension course. Syllabus revision and materials preparation. Classroom observation. S/U grading.

**497. Fieldwork in Libraries or Information Organizations (4 or 8 units).** Supervised field experience in approved library or information organization. Concentration must be on managerial or other professional problems of the site. Students spend full time in the field for most of the period. S/U grading.

**498. Internship.** Prerequisite: consent of internship coordinator. Supervised professional training in a library or information center approved by internship coordinator. Minimum of 120 hours per term. May be repeated twice. S/U grading.

**596. Directed Individual Study or Research (2 to 8 units).** Prerequisite: consent of instructor. Directed special studies in fields of bibliography, librarianship, and information science. Variable conference time depending on nature of study or complexity of research. S/U grading.

**597. Directed Studies for Ph.D. Qualifying Examinations (2 to 12 units).** S/U grading.

**599. Ph.D. Research and Writing (2 to 12 units).** S/U grading.

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# John E. Anderson Graduate School of Management

William P. Pierskalla, Dean



# 13

Because the world is changing rapidly and unpredictably, today's professional manager must learn the concepts and principles of management that make adjustments to new conditions possible. At UCLA's John E. Anderson Graduate School of Management (AGSM), which is consistently ranked among the best such schools in the nation, students prepare to become first-rate managers with both specialized skills and a broad understanding of the general economic, business, and managerial environment. This background enables them to become effective and efficient directors of organizations and people whether they are in the private, public, or not-for-profit sector.

Specifically, AGSM offers the business community a wide range of continuing education programs that provide state-of-the-art information in a variety of fields. Through its faculty, the school advances the art and science of management by engaging in basic research in all fields of management and by educating scholars who can continue to create this new knowledge.

AGSM students come from diverse professional and educational backgrounds and seek equally diverse personal and professional goals. Whether they choose to pursue the professional M.B.A., the academic M.S., or a Ph.D. in Management, they graduate with a broad understanding of people and organizations and with a sound technical background in the economic and mathematical concepts of management planning and decision making.

# John E. Anderson Graduate School of Management

3250 Anderson Graduate School of Management, (310) 825-7935

## Professors

Robert B. Andrews, Ph.D., *Recalled (Operations and Technology Management)*, Associate Dean  
 Michael J. Brennan, Ph.D. (*Finance; Goldyne and Irwin Hearsh Professor of Money and Banking*)  
 John W. Buckley, Ph.D. (*Ernst and Young Professor of Accounting*)  
 Elwood S. Buffa, Ph.D., *Recalled (Operations and Technology Management; Times Mirror Professor of Management Strategy and Policy)*  
 Lee G. Cooper, Ph.D. (*Marketing*)  
 Bradford Cornell, Ph.D. (*Finance*)  
 Samuel A. Culbert, Ph.D. (*Human Resources/Human Systems Development*)  
 Michael R. Darby, Ph.D. (*Business Economics*), Vice Chair  
 José de la Torre, D.B.A. (*Policy and Organization*)  
 Sebastian Edwards, Ph.D. (*Business Economics; Henry Ford II Professor of International Management*)  
 Donald Erlenkötter, Ph.D. (*Management Science, Operations and Technology Management*)  
 Eric G. Flamholtz, Ph.D. (*Accounting, Human Resources/Human Systems Development*)  
 Arthur M. Geoffrion, Ph.D. (*Management Science*)  
 Glenn W. Graves, Ph.D., *Recalled (Management Science)*  
 Martin Greenberger, Ph.D. (*IBM Professor of Computers and Information Systems*)  
 Dominique M. Hanssens, Ph.D. (*Marketing*), Associate Dean  
 Sanford M. Jacoby, Ph.D. (*Human Resources/Human Systems Development*)  
 Harold H. Kassarijan, Ph.D., *Recalled (Marketing)*  
 Larry J. Kimbell, Ph.D. (*Business Economics*)  
 Archie Kleingartner, Ph.D. (*Human Resources/Human Systems Development*)  
 Edward E. Leamer, Ph.D. (*Business Economics; Chauncey J. Medberry Professor of Management*)  
 David Lewin, Ph.D. (*Human Resources/Human Systems Development*)  
 Bennet P. Lientz, Ph.D. (*Information Systems*)  
 Steven A. Lippman, Ph.D. (*Management Science*)  
 James B. MacQueen, Ph.D. (*Management Science*)  
 Fred Massarik, Ph.D. (*Human Resources/Human Systems Development*)  
 John J. McDonough, D.B.A. (*Human Resources/Human Systems Development, Accounting*)  
 Bill McKelvey, Ph.D. (*Policy and Organization*)  
 Bruce L. Miller, Ph.D. (*Accounting*)  
 Daniel J.B. Mitchell, Ph.D. (*Human Resources/Human Systems Development*)  
 Donald G. Morrison, Ph.D. (*Marketing; William E. Leonard Professor of Management*)  
 William G. Ouchi, D.Litt., Ph.D. (*Policy and Organization; Luckman Distinguished Teaching Award*), Assistant Dean  
 William P. Pierskalla, Ph.D., Dean  
 Anthony P. Raia, Ph.D., *Recalled (Human Resources/Human Systems Development)*  
 Richard W. Roll, Ph.D. (*Allstate Professor of Insurance and Finance*)  
 Richard P. Rumelt, D.B.A. (*Policy and Organization*)  
 Rakesh K. Sarin, Ph.D. (*Operations and Technology Management; Paine Professor of Management*)  
 Eduardo S. Schwartz, Ph.D. (*Finance; California Professor of Real Estate and Land Economics*)

Carol A. Scott, Ph.D. (*Marketing*), Chair  
 E. Burton Swanson, Ph.D. (*Information Systems*)  
 Sheridan D. Titman, Ph.D. (*Finance*)  
 J. Fred Weston, Ph.D., *Recalled (Business Economics, Finance; Warren C. Corder Professor of Money and Financial Markets; Distinguished Teaching Award)*  
 Harold M. Williams, J.D.  
 James Q. Wilson, Ph.D. (*Policy and Organization; James A. Collins Professor of Management*)

## Professors Emeriti

William F. Brown, Ph.D.  
 Joseph D. Carrabino, Ph.D., P.E.  
 Fred E. Case, D.B.A.  
 John C. Clendenin, Ph.D.  
 Louis E. Davis, M.S.  
 David K. Eiteman, Ph.D.  
 Walter A. Fogel, Ph.D.  
 Alfred E. Hofflander, Ph.D.  
 James R. Jackson, Ph.D.  
 Raymond J. Jessen, Ph.D.  
 Paul Kircher, Ph.D., C.P.A.  
 J. Clayburn La Force, Ph.D., *Dean Emeritus*  
 Robert Hal Mason, Ph.D.  
 Frederic Meyers, Ph.D.  
 Frank G. Mittelbach, M.A.  
 Rosser T. Nelson, Ph.D.  
 Alfred Nicols, Ph.D.  
 Frank E. Norton, Ph.D.  
 George W. Robbins, M.B.A., *Dean Emeritus*  
 John P. Shelton, Ph.D.  
 Harry Simons, M.A., C.P.A.  
 R. Clay Sprowls, Ph.D.  
 George A. Steiner, Ph.D., Litt.D.  
 Robert Tannenbaum, Ph.D.  
 Robert M. Williams, Ph.D.

## Associate Professors

Theodore A. Andersen, Ph.D., *Recalled (Finance)*  
 Sushil Bikhchandani, Ph.D. (*Management Science*)  
 Connie Gersick, Ph.D. (*Human Resources/Human Systems Development*)  
 Robert L. Geske, Ph.D. (*Finance*)  
 Richard A. Goodman, D.B.A. (*Policy and Organization*)  
 Michael E. Granfield, Ph.D. (*Business Economics*)  
 Mark S. Grinblatt, Ph.D. (*Finance*)  
 David A. Hirshleifer, Ph.D. (*Finance*)  
 Barbara S. Lawrence, Ph.D. (*Human Resources/Human Systems Development, Policy and Organization*)  
 Marvin B. Lieberman, Ph.D. (*Policy and Organization*)  
 John W. Mamer, Ph.D. (*Management Science*)  
 Alfred E. Osborne, Jr., Ph.D. (*Business Economics*)  
 I.P.L. P'ng, Ph.D. (*Business Economics*)  
 Hans Schöllhammer, D.B.A. (*Policy and Organization*)  
 Siu S. Tang, Ph.D. (*Management Science*)  
 Walter N. Torous, Ph.D. (*Finance*)

## Assistant Professors

Reza H. Ahmadi, Ph.D. (*Operations and Technology Management*)  
 Randolph E. Bucklin, Ph.D. (*Marketing*)  
 Margaret C. Campbell, Ph.D. (*Marketing*)  
 Bhagwan Chowdhry, Ph.D. (*Finance*)  
 Sriram Dasu, Ph.D. (*Operations and Technology Management*)  
 Kirsten M. Ely, Ph.D. (*Accounting*)

Christopher Erickson, Ph.D. (*Human Resources/Human Systems Development*)  
 Ronald C. Goodstein, Ph.D. (*Marketing*)  
 Deborah D. Heisley, Ph.D. (*Marketing*)  
 Narasimhan Jegadeesh, Ph.D. (*Finance*)  
 Oliver Kim, Ph.D. (*Accounting*)  
 Brian T. Pentland, Ph.D. (*Information Systems*)  
 Steven R. Postrel, Ph.D. (*Policy and Organization*)  
 Jagmohan S. Raju (*Marketing*)  
 Gordon V. Shirley, D.B.A. (*Operations and Technology Management*)  
 Mark S. Silver, Ph.D. (*Information Systems*)  
 Atanu R. Sinha, Ph.D. (*Marketing*)  
 Karen A. Stephenson, Ph.D. (*Human Resources/Human Systems Development*)  
 Yoon S. Suh, Ph.D., C.P.A. (*Accounting*)  
 Siew Hong Teoh, Ph.D. (*Accounting*)  
 Ivo I. Welch, Ph.D. (*Finance*)

## Lecturers

Kathleen M. Connell, Ph.D.  
 Gordon L. Klein, J.D.  
 Lewis E. Leeburg, Ph.D.  
 Eric Mokover, M.B.A.  
 Linda F. Newton, M.B.A.  
 David S. Ravetch, M.A.  
 Kendall L. Simmonds, M.B.A.  
 Richard B. Stern, Ph.D.  
 Victor C. Tabbush, Ph.D.

## Adjunct Professors

William M. Cockrum, M.B.A. (*Finance*)  
 John B. Farrell, M.B.A., C.P.A. (*Accounting*)  
 George T. Geis, Ph.D. (*Accounting*)  
 S. William Yost, Ph.D. (*Operations and Technology Management*)

## Adjunct Associate Professors

Ichak Adizes, Ph.D. (*Policy and Organization*)  
 Janis S. Forman, Ph.D. (*Communications Program*)  
 Marvin M. May, Ph.D., *Recalled (Finance)*

## Adjunct Assistant Professors

Jason L. Frand, Ph.D. (*Information Systems*)  
 Ernest J. Scalberg, Ph.D. (*Policy and Organization*)  
 Leonard Weil, B.A. (*Finance*)

The John E. Anderson Graduate School of Management at UCLA offers a variety of programs leading to graduate degrees at the master's and doctoral levels. These include both an academic (M.S.) and professional (M.B.A.) master's, as well as a 21-month Executive M.B.A. Program designed for working managers who are moving from specialized areas into general management and a three-year Fully Employed M.B.A. Program for emerging managers. A Ph.D. in Management is also offered, as are a certificate Executive Program and research conferences and seminars for experienced managers.

The school does not offer an undergraduate major in management; however, several undergraduate courses in management are of-

ferred. Enrollment in Management 120A, 120B, 122, 124, 130A, 130B, 133, and 140 is open only to students in the business economics program (see Chapter 5 for details on this program). Enrollment in other courses, although open to all University students who have completed the prerequisites, is limited, and non-AGSM students are advised not to count on gaining admission to them in order to meet the requirements of other departments or programs.

### Degrees Offered

Master of Business Administration  
(M.B.A.)  
Master of Science (M.S.) in  
Management  
Doctor of Philosophy (Ph.D.) in  
Management

## Master of Business Administration

The two-year, full-time program leading to the Master of Business Administration (M.B.A.) degree is designed to prepare managers for business enterprises and for public/not-for-profit organizations.

The program aims to develop general management perspectives and knowledge while imparting expertise in student-selected fields of specialization. Along with mastery of subject matter, the M.B.A. program stresses integrating the lessons of various academic disciplines and functional fields, translating theory into practice, questioning the past and planning for the future, and self-guided learning as a continuing basis for effective managerial work.

### Admission

Although no specific undergraduate major is required for entrance, you must complete matrix algebra and differential calculus before entering the M.B.A. program and be familiar with the basic operations of a Macintosh or MS/DOS-based microcomputer. You are required to take the Graduate Management Admission Test (GMAT). Any questions about the GMAT should be addressed to Educational Testing Service, Box 966, Princeton, NJ 08541, (609) 771-7590. The local phone number in Los Angeles is (818) 578-1971.

International applicants who hold degrees from universities or colleges where English is not the primary language are required to take the Test of English as a Foreign Language (TOEFL). Refer to "Proficiency in English" under "Graduate Admission" in Chapter 3 for further information.

You must complete the M.B.A. Application and all accompanying documents and requests for information. Admission is for Fall Quarter only; completed applications, with full documentation, must be filed with AGSM by March 25.

Consideration is given to your academic record; score on the GMAT and, for applicants whose native language is not English, score on the TOEFL; potential for management as evidenced by work experience and community, extracurricular, or other experience; and letters of recommendation. Preference is given to applicants who have had full-time management-related work experience since completing their bachelors' degrees. Those few students admitted directly from baccalaureate programs who choose to work before entering graduate school will have their admission honored for three years.

Small group information sessions are offered by the M.B.A. Admissions Office several days a week throughout most of the year on an appointment basis. Call (310) 825-6944 to arrange attendance.

Applications and information about the M.B.A. program are available in the M.B.A. Program Office, 3371 Anderson Graduate School of Management, UCLA, Los Angeles, CA 90024-1448.

### Areas of Study

Accounting; business economics; finance; human resources/human systems development; information systems; management science; marketing; operations and technology management; policy and organization. Interdisciplinary studies are offered in arts management, entertainment management, entrepreneurial studies, finance and real estate, international business and comparative management, and public/not-for-profit management.

### Course Requirements

The three required elements of the M.B.A. program are the management core, advanced (area and free) electives, and the management field study, totaling 24 courses (96 units). Management core subjects cover the fundamentals of disciplines which underlie the practice of management. Advanced electives provide specialized knowledge and skills for a particular field of management work.

**Management Core** — The management core consists of 11 courses on subjects basic to the practice of management, including Management 402, 403, 405, 408, 409, 410, 411, 412, 420, and two courses from 404, 406, 407.

**Advanced Electives** — These focus on one or more fields of specialization within the broad realm of management. Students design programs of study to meet their specific academic needs and professional goals. Eight electives must be selected from regular AGSM courses, and you are encouraged to emphasize two or more areas of study.

You must also select at least three additional free electives, subject only to general University regulations. These electives normally must be taken while enrolled in the program. They may support or complement the remainder of your program of study.

A maximum of two four-unit 596 courses and one 454 course may be applied toward the 96-unit requirement. These are considered free electives.

**Management Field Study** — The two-term management field study project (courses 444A-444B) consists of teams of three to five students who serve as management consultants to business firms or other organizations. Conclusions are summarized in a report which serves in lieu of a comprehensive final examination for members of the team. The field study is judged by standards applicable to professional management consulting.

### Extracurricular Activities

A variety of student organizations promotes both professional competence in many areas and the development of contacts among students, alumni, faculty, and business executives. Many opportunities are presented for students to become involved in planning events with executives in both the public and private sectors, to participate in day-long programs at various organizations, and to meet with company representatives and alumni. Extracurricular activities are an integral part of life at AGSM, and all students are encouraged to participate.

## Concurrent Degree Programs

### J.D./M.B.A.

The John E. Anderson Graduate School of Management and the School of Law offer a concurrent program which enables students to prepare for careers where law and management overlap and where understanding of both fields is necessary. Examples of such areas would include public service, international trade, industrial relations, corporate law, and specialized areas of management consulting. The program makes it possible to earn the J.D. and M.B.A. in four academic years. Students interested in such a program should apply to both schools simultaneously.

### M.A.-Latin American Studies/M.B.A.

The John E. Anderson Graduate School of Management and the Latin American Studies Program jointly sponsor a three-year concurrent degree program designed for individuals preparing for careers in international management with a special focus on the Latin American region. Establishment of the program was predicated on the belief that individuals employed in the area of international business and management are better equipped to meet the challenges of their employment with complementary preparation in language and regional studies. Students should request application materials from the M.B.A. Admissions Office and the Latin American Studies Program.

**M.A.-Urban Planning/M.B.A.**

The John E. Anderson Graduate School of Management and the Graduate School of Architecture and Urban Planning offer a three-year concurrent degree program designed for students who seek careers which draw on general and specialized skills in urban planning and management. By providing knowledge of the workings of both the private and public sectors, the program enables individuals who have acquired these skills to move easily between careers in private industry and public service. Students must contact both the M.B.A. Admissions Office, John E. Anderson Graduate School of Management, and the Graduate School of Architecture and Urban Planning Admissions Office.

**M.L.S./M.B.A.**

A concurrent degree program jointly sponsored by the John E. Anderson Graduate School of Management and the Graduate School of Library and Information Science, this specialization is designed to provide an integrated set of courses for students who seek careers which draw on general and specialized skills in the two professional fields. Students should request application materials from both the M.B.A. Admissions Office, John E. Anderson Graduate School of Management, and the Graduate School of Library and Information Science.

**M.N./M.B.A.**

The John E. Anderson Graduate School of Management and the School of Nursing offer a concurrent degree program designed for students interested in employment in all sectors of the health care delivery system, including hospitals, corporate health care headquarters, home health care agencies, and long-term care facilities, as well as policy-making bodies and consulting firms. Students must request application materials from both the M.B.A. Admissions Office, John E. Anderson Graduate School of Management, and the School of Nursing Student Affairs Office.

**M.P.H./M.B.A.**

The John E. Anderson Graduate School of Management and the School of Public Health, Department of Health Services, offer a three-year concurrent degree program designed for students who desire a management career in health care and related fields. The program reflects the combined interest of employers, faculty, and students who recognize the increasing challenges facing managers in the health care industry and the need for highly skilled and sensitive individuals who can creatively take on these challenges. Students should request application materials from both the M.B.A. Admissions Office, John E. Anderson Graduate School of Management, and the Health Services Management Program, UCLA School of Public Health. GMAT scores are required for admission.

**M.S.-Computer Science/M.B.A.**

The John E. Anderson Graduate School of Management and the Department of Computer Science in the School of Engineering and Applied Science offer a concurrent degree program which enables students to complete requirements for the M.S. in Computer Science and the M.B.A. in three academic years. Students should request application materials from both the M.B.A. Admissions Office, John E. Anderson Graduate School of Management, and the Department of Computer Science.

**Executive M.B.A. Program**

Designed for mid-career managers with strong records of achievement, the Executive M.B.A. Program enables executives to obtain high quality advanced management education while continuing in their full professional roles. The program has a class size of approximately 60 participants with superior academic records and a minimum of eight years of work experience and five years of managerial experience.

The intensive two-year course of study leads to a regular M.B.A. degree. The emphasis is on general management training, increased competence in management specialties, organizational and interpersonal skills, and sophisticated understanding of the integration of businesses and their environments.

Classes are held at AGSM on Fridays and Saturdays every other week, with three- to five-day residential sessions held at conference sites at the beginning and end of the program. Further information and application materials may be obtained by writing to Executive M.B.A. Program, 4383 Anderson Graduate School of Management, UCLA, Los Angeles, CA 90024-1481.

**Fully Employed M.B.A. Program**

Designed for the emerging manager, this three-year part-time program offers students the opportunity to focus on finance, marketing, or general management. A typical student has four to seven years of work experience and is either in a managerial position or shows strong potential for assuming a position in management.

The curriculum has three main components — management core, elective tracks, and management field study — all designed to equip the emerging manager with the skills and knowledge necessary to accept the challenges of today's complex and dynamic business world. The management core focuses on functional skills as well as the organization's internal and external environments. Three broad elective tracks are offered in finance, marketing, and general management; you can tailor elective courses to meet your personal career needs. A management field study takes place during your third year, providing you with the opportunity to put concepts and skills to work

through a consulting study of an actual client organization.

The program has a class size of approximately 65 students. Classes meet weekly one weekday afternoon and Saturday mornings. Courses available through the regular M.B.A. program during the elective track phase meet at various times. Classes are scheduled to begin in September and end three years later in June. Two weekend residentials are held, one at the beginning of both the first and second years of the program. Further information and application materials may be obtained by writing to Fully Employed M.B.A. Program, 4383 Anderson Graduate School of Management, UCLA, Los Angeles, CA 90024-1481.

**M.S./Ph.D. Programs****Admission**

All applicants are required to take the Graduate Management Admission Test (GMAT) or the Graduate Record Examination (GRE). International applicants who hold a degree from a non-English-speaking university are required to take the Test of English as a Foreign Language (TOEFL). Refer to "Proficiency in English" under "Graduate Admission" in Chapter 3 for further information. Three letters of recommendation must be submitted with the completed application. All application materials, including transcripts, should be sent directly to the M.S./Ph.D. Programs Office, 3379 Anderson Graduate School of Management, UCLA, Los Angeles, CA 90024-1481.

Applications are accepted for Fall Quarter admission only; the deadline for submission of applications and complete documentation is January 10.

Program information and application materials may be obtained from the M.S./Ph.D. Programs Office.

All applicants to the M.S. or Ph.D. program are strongly urged to arrange an interview with at least one faculty member in their proposed area of concentration or major field area. The interview should take place before December 1. Interviews are informational only and have no bearing on admissions decisions.

**Master of Science Degree**

The academic master's program is a full-time program which leads to the Master of Science degree in Management. Some students enter the program with the goal of eventual acceptance into the doctoral program; for others, the M.S. is a terminal degree. In either case, the program's emphasis is on advanced specialized training and the development of research capability.



## Major Field

Management science.

## Course Requirements

A maximum of 16 courses may be required. The four prerequisite courses and three managerial core course requirements may be waived on the basis of prior coursework. Nine graduate courses (methodological core, depth field, and four units of Management 598) are required and cannot be waived.

(1) Prerequisites (four courses): Mathematics 32B, Statistics M152A, 152B, and two terms of computer programming.

(2) Managerial Core (three courses): Management 403, 405, 408.

(3) Methodological Core (five courses; deviations may be approved by the chair of the management science academic unit): Management 203A, 210A, 210B, 210C, 216A.

(4) Depth Field: Three courses which support your thesis research.

(5) Master's Thesis (one course): Four units of Management 598.

Four units of course 596 may be applied toward the minimum graduate course requirement.

## Thesis Plan

A thesis is required for the Master of Science degree. Students generally establish a thesis committee during their fifth term. Plans for the thesis should be presented to the committee for approval at the beginning of the sixth term.

## Ph.D. Degree

The doctoral program is a research-oriented degree program which leads to the Ph.D. in Management. The program includes intensive training in research methods applicable to problems of organizations in the public and private sectors. It prepares students for careers in university teaching and research or as staff specialists in business firms and other organizations. The program offers students substantial opportunities to discover their own, unique scholarly focus and competence.

## Major Fields

Accounting; business economics; finance; human resources/human systems development; information systems; international business and comparative management; management science; marketing; operations and technology management; policy and organization.

## Course Requirements

The research preparation requirement consists of two parts: (1) a course requirement and (2) a research paper. You are required to take five research courses which are not part of the major field area. These courses must be completed before taking the oral qualifying examination and may not be waived by prior graduate work. The research paper must be submitted to and accepted by the research paper committee no later than Spring Quarter of your third year of study.

The breadth requirement consists of eight courses which are clearly outside your major field area. You should use these courses to become more knowledgeable about the basic elements of several other management disciplines and functional areas or to define a minor field or research and teaching proficiency. Three of these courses may be waived by prior coursework. They must be completed before you take the oral qualifying examination.

Students, in consultation with a major field adviser, design a course of study which prepares them to pass the major field examination.

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## Qualifying Examinations

Proficiency in the major field area is determined by a written examination, supplemented in some areas by an oral examination. The major field examination must be passed by the end of Spring Quarter of your third year of study.

You are required to present the substance of your dissertation proposal in a formal seminar to which all Ph.D. students and faculty are invited.

When all the preliminary requirements have been fulfilled (coursework, research paper, major field examination, seminar), the University Oral Qualifying Examination can be held; if passed, you are advanced to candidacy. The oral qualifying examination must be passed within four and one-half years of the date of entrance into the program.

## Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

## Doctoral Dissertation/Final Oral Examination

You are expected to present a dissertation of substantial magnitude which makes a significant contribution to the advancement of knowledge in your selected field of study. The dissertation must be completed and accepted within seven and one-half years from your date of entry into the program.

The school requires that you defend your dissertation at a final oral examination.

## Lower Division Courses

**1A-1B. Elementary Accounting.** Prerequisite: sophomore standing. Course 1A is prerequisite to 1B. Introduction to accounting theory and practice. Recording, analyzing, and summarizing procedures used in preparing balance sheets and income statements in first term. Payroll and tax accounting, partnership and corporation accounts, manufacturing and cost accounting, and supplementary statements in second term.

## Upper Division Courses

**108. Business Law.** Essentials of contracts. Examination of legal forms of business organizations, especially partnerships and corporations. Introduction to federal securities law and antitrust.

**120A. Intermediate Financial Accounting I.** Prerequisite: course 1B. Intermediate-level course in theory and practice of financial accounting. Underlying concepts of asset valuation and income measurement. Measurement and reporting of current and long-term assets, including cash and marketable securities, inventories, plant assets and depreciation, and intangibles.

**120B. Intermediate Financial Accounting II.** Prerequisite: course 120A. Intermediate-level course in theory and practice of financial accounting. Underlying concepts of liability recognition and expense, including leases, bonds, and pensions. Shareholder's equity, including earnings per share. Accounting for changing prices.

**122. Cost Accounting.** Prerequisites: course 1B, Economics 40, or equivalent. Nature, objectives, and procedures of cost accounting and control; job costing and process costing; accounting for manufacturing overhead; cost budgeting; cost reports; joint-product costing; distribution cost; standard costs; differential cost analysis; profit-volume relationships and break-even analysis.

**123. Auditing.** Prerequisite: course 120B. Concepts and problems in verification of financial and related information, including ethical, legal, and other professional issues. Historical developments and current concerns.

**124. Advanced Accounting.** Prerequisites: courses 120A, 120B. Partnerships and joint ventures; installment sales and consignment sales; home office and branch relationships; corporate combinations; preparation of consolidated statements; foreign branches and subsidiaries; receiverships; estates and trusts; governmental units; actuarial science.

**127. Federal Income Taxation.** Prerequisite: course 1B. Recommended: course 120A. Basic concepts of federal income taxation pertaining to individuals; income and deductions, areas of special tax procedures pertaining to gains and losses from sales and exchanges. Tax considerations in business and investment decisions.

**128. Special Topics in Accounting.** Lecture, three hours. Prerequisite: consent of instructor. Selected topics in public accounting, including mergers and acquisitions, public-company status and the going-public process, role of the partner, serving an entrepreneurial client, fund accounting, and filing and accounting of payroll and quarterly tax returns. Discussion of a case study of current interest in the accounting profession. Mr. Miller

**130A. Basic Managerial Finance.** Lecture, three hours. Prerequisites: course 120A or 120B, Economics 40 or equivalent. Study of financial decision making by business firms, with emphasis on applications of economic and accounting principles in financial analysis, planning, and control. Extensive use of problems and cases to illustrate varied analytical techniques employed in decision making.

**130B. Advanced Managerial Finance.** Lecture, three hours. Prerequisite: course 130A. Analysis of capital budgeting and working capital management. Review of long-term financing through security markets and lease contracts. Management of financial risk using options, futures, and forward contracts. Study of merger and acquisition processes and reorganization under bankruptcy laws.

**133. Investment Principles and Policies.** Lecture, three hours. Prerequisite: course 130A. Principles underlying investment analysis and policy; salient characteristics of governmental and corporate securities; policies of investment companies and investing institutions; relation of investment policy to money markets and business fluctuations; security price-making forces; construction of personal investment programs. Mr. Shelton

**140. Elements of Production and Operations Research.** Prerequisites: Mathematics 3A, 3B, 3C, 31E, Economics 40, or equivalent. Principles and decision analysis related to effective utilization of factors of production in manufacturing and nonmanufacturing activities. Analytical models and methods for allocation, transportation, inventories, replacement, scheduling, and facilities design. Mr. Erlenkotter and the Staff

**150. Elements of Industrial Relations.** Principles and methods of effectively utilizing human resources in organizations. Relationship between social, economic, and other environmental factors and current problems in industrial relations. Mr. Hutchinson

**175. Elements of Real Estate and Urban Land Economics.** Examination of business decision making as related to logical forces shaping cities and influencing real estate market functions and land uses. Emphasis on decision making as it relates to appraising, building, financing, managing, marketing, and using urban property. Mr. Mittelbach

**182. Leadership Principles and Practice.** Knowledge and skills leading to effectiveness in interpersonal relations. Understanding oneself as a leader and others as individuals and as members of working groups. Understanding of group process, including group leadership. Lectures and "sensitivity training" laboratory.

**190. Management Theory and Policy.** Prerequisite: course 130. Study of basic concepts and theory of management. Emphasis on operational analysis of manager's role in all types of organizations. Management issues in areas of planning, organizing, staffing, directing, and controlling. Mr. Carrabino and the Staff

**197. Special Topics in Management.** Topics of special interest to undergraduate students. Specific subjects may vary each term depending on particular interest of instructors or students. May be repeated for credit.

## Graduate Courses

Graduate courses are ordinarily open to students admitted in graduate standing. As a condition for enrollment, you must submit to the instructor in charge of the course evidence of satisfactory preparation for the work proposed.

**200. Advanced Microeconomics.** Seminar, three hours. Prerequisite: course 405 or consent of instructor. Economist's approach to organization and competitive interaction. Topics include game theory, threat credibility, incentive contracts, information advantages, and entry deterrence.

**201A. Business Forecasting.** Seminar, three hours. Prerequisites: courses 402, 406. Role of business forecasting in managerial planning. Principles and methods of forecasting. Evaluation of reliability of existing forecasting techniques. Coverage of both short- and long-term forecasting of industry, regional, and national business trends.

**201B. Econometrics and Business Forecasting.** Lecture, three hours. Prerequisite: consent of instructor. Development of standard topics in applied econometric modeling. Emphasis on assumptions underlying classical normal linear regression model, special problems in application, and interpretation of results. Practical applications extensively developed in student projects.

**202A. Regulation.** Lecture, three hours. Prerequisite: course 405 or consent of instructor. Reasons for government intervention in theory and practice. Effect of regulation on business. How regulation and deregulation occur. Areas include public utilities, banking, pollution, and the political process.

**202B. Analytics of Competitive Strategy.** Discussion, three hours. Prerequisites: courses 402 and 405, or consent of instructor. Development and analysis of strategies to maximize value in competitive and cooperative situations. Problems include competitive bidding, tacit collusion, and strategies in repeated settings. Mr. P'ng

**202C. Empirical Studies in Industrial Organization.** Prerequisite: course 202B. Investigation of factors influencing size of industries, their size distribution, and conditions of entry and exit. Implications of such industry characteristics, derived for decisions having to do with firm output, prices, advertising, and research/development. Mr. Weston

**203A. Economics of Decision.** Prerequisites: rudiments of economic theory, calculus, probability, and statistics. Basics of single-person decision theory from a normative viewpoint. Expected utility theory with objective and subjective probability. Departures from expected utility behavior. Introduction to multi-person decision theory. Mr. Bikhchandani, Mr. Erlenkotter

**203B. Economics of Information.** Discussion, three hours. Prerequisites: rudiments of economic theory of the firm, calculus, probability, and statistics; course 203A or consent of instructor. Optimal decision and information rules. Amount, cost, and value of information. Risk aversion, stochastic dominance, and their impact on economic decisions in a stochastic environment. Mr. Lippman

**205A. International Business Economics.** Prerequisites: courses 405 and 406, or consent of instructor. International business environment, international economic institutions, national and regional trade policies and developments, trends in foreign markets, and international monetary problems, studied for their influence on organization and operation of the international corporation. Mr. Mitchell

**205B. Comparative Market Structure and Competition.** Prerequisite: course 205A or consent of instructor. Comparative study of public policies toward competition, market structures, and competitive practices in key industries in selected countries.

**205C. Business Forecasting for Foreign Economies.** Prerequisite: course 201A or consent of instructor. Forecasting changes in business activity, population, industrial structure, productivity, Gross National Product and its components for selected countries.

**207. Resource Administration of Nonmarket Activities.** Seminar, three hours. Prerequisite: course 405 or consent of instructor. Examination of behavior of managers in profit vs. not-for-profit sectors to determine critical variables that explain observed differences in behavior. Use of methodology of microeconomics, particularly utility maximization.

**208. Public Services and Private Functions.** Prerequisites: courses 405 and 406, or consent of instructor. Sources and uses of federal, state, and local revenues and their impact on public and private resource allocation. Examination of proper roles of government and private sector in financing and provision of public goods and services.

**209. Selected Topics in Business Economics.** Prerequisite: consent of instructor. Special topics in business economics. Current developments in theory or practice in business economics. May be repeated for credit.

**210A. Mathematical Programming.** Discussion, three hours. Prerequisite: linear algebra. Comprehensive development of theory and computational methods of linear programming, with applications to a variety of areas. Mr. Graves

**210B. Applied Stochastic Processes.** Discussion, three hours. Prerequisite: Mathematics M150A or Electrical Engineering 131A. Fundamentals of stochastic processes, including Poisson processes, renewal theory, and Markov chains. Sequential stochastic (usually Markovian) decision processes in discrete and continuous time. Emphasis on problem formulation and characterization and computations of optimal policies, often via dynamic programming; applications to inventory, queueing, maintenance, reliability, and replacement problems. Mr. Lippman, Mr. Mamer

**210C. Network Flows and Integer Programming.** Prerequisite: linear programming. Theory and techniques of discrete and network-related mathematical programming models in management science. Applications to various allocation, coordination, operating, and planning problems. Emphasis on fundamentals, efficient computational methods, and keys to successful practical applications. Mr. Geoffrion

**211A. Nonlinear Mathematical Programming.** Prerequisites: course 210A, Mathematics 32A, or equivalent. Theory, methods, and application of optimization of nonlinear systems. Review of classical optimization methods; optimality and duality theory for convex programs; main computational approaches to convex programming; survey of current computer codes and computational experience. Mr. Graves

**211B. Large-Scale Mathematical Programming.** Prerequisite: course 210A or equivalent. Theory and computational methods for optimizing large-scale linear and nonlinear programs. Exploitation of special structures with combinatorial, dynamic, multidivisional, and stochastic aspects to obtain practical solution procedures in spite of large numbers of variables and/or constraints. Mr. Graves

**212A. Management Science Models I.** Prerequisites: course 407, Mathematics 31B. Broad survey of deterministic models of management science, including solution methods and applications management. Solution methods include linear programming, network optimization, integer programming, nonlinear programming, and dynamic programming. Application areas include corporate planning, finance, marketing, production and operations management, distribution, and project management. Mr. Erlenkotter, Mr. Geoffrion

**212B. Management Science Models II.** Prerequisites: course 212A, Mathematics 32A, or equivalent. Broad survey of nonlinear, time-staged, and probabilistic models for managerial decision making. Application areas include finance, marketing, production, facilities design, and energy systems. Mr. Erlenkotter, Mr. Mamer

**212C. Management Science Models III.** Prerequisites: courses 212A, 212B. In-depth reviews of actual management science applications. Emphasis on professional skills needed for successful practical applications.

**213A. Intermediate Probability and Statistics.** Prerequisite: course 402 or equivalent. Introduction to probability theory and hypothesis testing as applied to management. SAS programs used in this course and its sequels. Mr. Mamer, Mr. Morrison, Mr. Tang

**213B. Statistical Methods in Management.** Prerequisite: course 213A or consent of instructor. Introduction to parameter and interval estimation, simple and multiple linear regression and correlation, fixed, random, and mixed effects analysis of variance models and nonparametric statistics, all as they apply to management studies. Mr. Cooper, Mr. Hanssens, Mr. MacQueen

**213C. Introduction to Multivariate Analysis.** Prerequisite: course 213B or consent of instructor. Introduction to use of multivariate models in management research to organize and represent information; interpretation of coefficients from multivariate exploratory models (e.g., principal axes and factor analysis models); survey of multivariate statistical procedures (e.g., multiple discriminant analysis, multivariate analysis of variance, canonical correlation, and confirmatory factor models). Mr. Cooper, Mr. Hanssens, Mr. Morrison

**214B. Behavioral Science Models.** Prerequisite: consent of instructor. Formulation, analysis, and interpretation of mathematical models in behavioral sciences. Emphasis on stochastic process models for aspects of individual and group behavior such as learning, problem solving, classification, communication, bargaining, and social exchange systems. Mr. MacQueen

**215D. Time-Series Analysis.** Prerequisite: course 213B or consent of instructor. Univariate Box/Jenkins analysis, transfer functions, and intervention analysis. Relationship between econometric and time-series models, Granger causality, multiple time-series analysis. Numerous computer applications in modeling and forecasting. Mr. Hanssens

**216A. Simulation of Operational Systems.** Discussion, three hours. Prerequisite: background in FORTRAN, PL/1, PL/C, or other batch computing language available on campus and in basic statistics (course 402 or equivalent) and modeling (course 407 or equivalent). Computer simulation methodology, including design, validation, operating procedures, and analysis of results of simulation experiments. Applications of simulation to management problems.

**217A. Statistical Decision Theory.** Prerequisite: course 213A or equivalent. Relationships among statistical decision theory, game theory, and classical statistical inference, with emphasis on sequential analysis and dynamic decision processes; axiomatic foundations, Bayes and minimax solutions, applications to selected models of dynamic decision problems in business. Mr. MacQueen

**217B. Game Theory.** Prerequisite: course 213A or equivalent. Nature of models for rational behavior in presence of conflicts of interests, zero-sum and nonzero-sum games, two-person and many-person games, state of the art, philosophical and computational limitations, relations with individual and group decision making. Mr. MacQueen

**218A. Selected Topics in Management Science (1 to 4 units).** Prerequisite: consent of instructor. Newly developing topics and viewpoints. Topics have included reliability and optimal maintenance theory, large-scale distribution/inventory systems, and Markovian decision processes under uncertainty. May be repeated for credit.

**218C. Selected Topics in Business Statistics (1 to 4 units).** Prerequisite: consent of instructor. Special topics in statistical methods. Current developments in statistical theory and practice. Analysis of recent literature. Topics and instructors announced in advance. May be repeated for credit.

**218X-218Y-218Z. Current Issues in Management Science (1 to 4 units each).** Lecture, one hour; discussion, three hours. Prerequisite: consent of instructor. Current issues and research on a variety of topics in general area of management science. May be repeated for credit. S/U grading.

**220A. Intermediate Financial Accounting I.** Prerequisite: course 403 or consent of instructor. Concepts and principles of financial accounting. Intended to enhance students' understanding of published corporate financial statements. Emphasis on assets and revenue recognition. Mr. Miller

**220B. Intermediate Financial Accounting II.** Prerequisite: course 220A or consent of instructor. Concepts and principles of financial accounting. Intended to enhance students' understanding of published corporate financial statements. Emphasis on liabilities and owners' equity. Ms. Ely, Mr. Miller

**220C. Advanced Financial Accounting.** Prerequisites: courses 220A and 220B, or consent of instructor. Continuation of courses 220A and 220B, with emphasis on a range of topics, including accounting for partnerships, mergers, combinations, and parent/subsidiary relationships. Review of litigation procedures, including reorganizations, receiverships, and bankruptcy. Mr. Farrell

**221. Current Issues in Accounting.** Prerequisite: consent of instructor. Forum for discussion of contemporary issues in accounting and information systems, in colloquium format. Drawing on prominent speakers in the field, course requires students to formulate a position paper on each topic presented. Mr. Buckley

**222. Cost Accounting.** Prerequisite: course 403. Nature, objectives, and procedure of cost accounting and control; job costing and process costing; joint product costing, standard costs; theories of cost allocation and absorption; uses of cost accounting data for management decision making. Mr. Suh

**223. Auditing.** Prerequisite: course 403. Theory and practice underlying auditors' examination and reporting on financial statements, including professional ethics, internal control, and selection and application of auditing procedures, with emphasis on generally accepted auditing standards. Mr. Miller

**226. International Accounting.** Prerequisite: course 403. Comparative analysis of accounting concepts and practices in other countries; study of contrasts between various systems; problems of accounting for international corporations, including transfers of funds and income measurement; accounting influences on economic development. Mr. Farrell

**227A. Taxation Principles and Policy.** Discussion, three hours. Prerequisite: course 403. Study of fundamental income tax problems encountered in business, investment, employment, and personal decisions. Special emphasis on structuring real estate and securities transactions. Current trends in law and policy. Mr. Klein

**227B. Taxation and Business Planning.** Discussion, three hours. Prerequisite: course 403. Study of tax issues arising in formation, operation, and termination of a corporation. Specific emphasis on structuring shareholders' transactions involving dividends, redemptions, liquidations, acquisitions, and capital structure.

**228. Evaluating Financial Statement Information.** Lecture, three hours. Prerequisites: courses 220A or 220B, 230, 402. Issues of accounting information evaluation, with special emphasis on uses of financial statements by decision makers external to the firm (e.g., investors, creditors). Topics include load decisions, bankruptcy prediction, and interpreting earnings.

**229A. Special Topics in Accounting.** Lecture, three hours. Prerequisite: doctoral standing or consent of instructor. Examination in depth of problems or issues of current concern in accounting, such as application of information economics and principal-agent model to accounting.

**229B. Empirical Research in Accounting.** Lecture, three hours. Prerequisites: training in econometrics and doctoral standing, or consent of instructor. Introduction to empirical accounting literature, focusing on role that accounting information plays in formation of capital market prices.

**229X-229Y-229Z. Accounting Workshops (1 unit, 1 unit, 2 units).** Discussion, two hours. Prerequisite: doctoral standing. Designed to develop ability to critically evaluate research in fields relevant to study of accounting. Papers presented in colloquium format by leading scholars in accounting. Active participation and intellectual interchange encouraged through discussion of papers during colloquium. May be repeated for credit. S/U grading.

**230. Theory of Finance.** Prerequisite: course 408. Decision making under uncertainty, theory of asset prices, and efficiency of capital markets. Development of most recent theoretical constructs and application to fundamental issues in corporate financial management (such as capital budgeting, capital structure, and dividend policy). Mr. Titman

**231A. Profit Sector Financial Policy.** Prerequisite: course 230. Identifying and solving financial problems through use of cases. Application of financial theory and financial techniques to business problems, using written reports and classroom discussion. Mr. May, Mr. Titman, Mr. Weston

**231B. Nonprofit Sector Financial Policy.** Discussion, three hours. Prerequisite: course 408. Identifying and solving financial problems for all types of nonprofit organizations, with attention to funds accounting, budgeting and control, investment decision making when market valuation cannot be used as a criterion, and sources of funds for nonprofit organizations. Use of cases. Mr. Eiteman

**231C. Working Capital Management.** Lecture, three hours. Prerequisite: course 230. More detailed advanced coverage of short-range problems of financial management. Coverage of current assets, current liabilities, and their interrelationships.

**231E. Managing Finance and Financing the Emerging Enterprise.** Prerequisites: courses 230, 403, 408, second-year standing. Emphasis on financial, control, and investment issues confronting rapidly growing companies in entrepreneurial settings. Consideration and selection of financing vehicles which may be appropriate to securing organizations' money requirements. Mr. Cockrum

**232A. Investment Management.** Lecture, three hours. Prerequisite: course 230. Behavior of investment markets and pricing of securities. Topics include security analysis, management of fixed income securities, portfolio management, and equity investment strategies. Material on operation of securities markets and institutional details of trading also included. Mr. Roll

**232D. Option Markets.** Prerequisite: course 230. Organization and role of organized put and call markets, arbitrage and hedging relationships, valuation of options, implementation of option trading strategies, perspective of corporate securities as options, function of options in securities markets, and innovations in option markets. Students learn fundamentals of hedging and spreading by playing an option trading game and writing a term paper analyzing their trading strategies. Mr. Geske

**233A. Money and Capital Markets.** Prerequisite: course 230. Application of interest theory and flow funds analysis to price determination process in markets for bonds, mortgages, stocks, and other financial instruments. Study of funds flow from credit markets. Analysis of costs of capital in individual industries. Mr. Cornell, Mr. Roll

**233B. Financial Institutions.** Lecture, three hours. Prerequisites: courses 230, 408. Study of financial policies and practices of commercial banks, savings and loan associations, pension funds, insurance companies, and other major financial institutions. Review of current major problems facing senior managers of these financial institutions. Mr. Andersen, Mr. Roll

**233C. Speculative Markets.** Prerequisite: course 230. Study of theory and evidence of capital market efficiency, including stock market, bond market, commodity future markets, options market, money markets, and foreign exchange markets. Mr. Hirshleifer

**234A. International Financial Markets.** Lecture, three hours. Prerequisites: courses 230, 408. Conceptual understanding of foreign exchange market, Eurocurrency market, international bond market, and equity markets in various countries. Emphasis on underlying economic principles, although where relevant, institutional features helpful in understanding structure and operations of the markets to be dealt with in detail. Mr. Eiteman

**234B. Financial Management of Multinational Corporations.** Lecture, three hours. Prerequisite: course 230. Financial management of multinational firms from perspective of a financial vice president or other financial officer within the company. Topics include measuring foreign exchange risk, managing that risk with both contractual and operating strategies, foreign investment decisions, capital budgeting and cost of capital in an international perspective, political risk, working capital management, and performance evaluation and control. Mr. Chowdhry

**235A. Problems in Insurance Management.** Discussion, three hours. Prerequisite: consent of instructor. Advanced consideration of problems of insurance management. Actuarial, underwriting, investment, marketing, and regulatory problems related to insurance activities. Mr. Hofflander

**238. Special Topics in Finance.** Prerequisites: course 230, consent of instructor. Intended for master's students. Selected topics in finance theory, empirical studies, and financial policy. May be repeated for credit with instructor change.

**239A. Theory of Exchanges under Uncertainty.** Prerequisites: course 230, consent of instructor. Foundations of theory of exchange developed as introduction to theoretical literature on pricing of capital assets. Primarily intended for Ph.D. students, but well-prepared master's students may find course useful in their career preparation. Mr. Geske

**239B. Theory of Investment under Uncertainty.** Prerequisites: courses 230 and 239A, or consent of instructor. Foundations of theory of firm capitalization and investment decisions, with special attention to questions of exchange and allocative efficiency. Primarily intended for Ph.D. students, but well-prepared master's students may find course useful in their career preparation.

**239C. Empirical Research in Finance.** Prerequisites: course 230, training in econometrics, consent of instructor. In-depth study of empirical research in the field of finance, with emphasis on market efficiency, capital asset pricing, and option pricing. Primarily intended for Ph.D. students, but well-prepared master's students may find course useful in their career preparation. Mr. Roll

**239D. Ph.D. Seminar: Finance.** Prerequisites: course 230, courses in the 239 series. Intended for Ph.D. students. Advanced topics in finance theory and empirical research. May be repeated for credit with instructor change.

**239X-239Y-239Z. Finance Workshops (1 unit, 1 unit, 2 units).** Discussion, 90 minutes. Prerequisite: doctoral standing. Designed to develop ability to critically evaluate finance research. Papers presented in colloquium format by leading scholars in finance. Active participation and intellectual interchange encouraged through discussion of papers in sessions prior to workshop, as well as during colloquium. May be repeated for credit. S/U grading.

**240A. The Operating Manager.** Definition and analysis of problems of production planning, inventory management, quality control, system design, and implementation from operating manager's perspective, primarily through case studies. Course is integrative in nature, rather than one of developing new methodologies and techniques. Mr. Buffa

**240B. Operations Planning, Scheduling, and Control.** Prerequisite: course 407 or consent of instructor. Forecasting, inventory planning, aggregate planning, job-shop scheduling models, and automated manufacturing systems, with emphasis on managerial relevance and usefulness of models in solving or providing insights into real-world problems.

**240C. Design of Operational Systems.** Prerequisite: course 407. Issues, concepts, objectives, and criteria in determination of capabilities, characteristics, and configurations of manufacturing and service systems. Examination of analytic and synthesizing methodologies for selection of capacity, location, technology, processes, material movement and storage systems, facilities, work group structures, and jobs. Mr. Andrews

**240D. Operations Strategy and Policy.** Discussion, three hours. Definition and scope of operations strategy and its relation to corporate strategy, importance of productivity and its amplification in global competition, positioning the system to match market requirements, capacity decisions, product and process technology, work force and job design, strategic implications of operating decisions, suppliers and vertical integration. Case analyses involving strategic issues in manufacturing and nonmanufacturing situations. Mr. Buffa

**240E. Managing Entrepreneurial Operations.** (Formerly numbered 245.) Lecture, three hours. Prerequisite: second-year standing or consent of instructor. Exploration of operating issues involved in managing entrepreneurial enterprises. Integrative course, building on methodologies, principles, and concepts provided in prerequisite functional and strategic core courses. Use of extensive readings and case studies to develop skills and philosophical basis for applying managerial concepts to entrepreneurial operations.

**241A. Managing Technology for Competitive Advantage.** Advanced technologies such as robotics, computer-integrated manufacturing, computer-aided design and manufacturing (CAD/CAM), and flexible manufacturing systems. Effects of technological innovation on operations managers at both strategic and operational levels. Course is integrative in nature. Mr. Shirley

**241B. Project Management.** Prerequisite: course 407 or equivalent. Management of development projects. Decision-making environment, economic analysis, network analysis, scheduling, and control of development projects. Sequential and aggregate development decisions. Mr. Yost

**242A. Models for Operations Planning, Scheduling, and Control.** Prerequisite: doctoral standing or consent of instructor. Survey of research studies and recent literature in operations planning, scheduling, and control. Emphasis throughout on formal models and their applications. Aggregate planning, work force scheduling, inventory management, and detailed operations scheduling and control.

**242B. Models for Operations Systems Design.** Prerequisite: doctoral standing. Survey of research literature on models for design of manufacturing and service systems, including long-range forecasting, operational economies, capacity, location, facilities, processes/technology, work, and work structures. Mr. Andrews, Mr. Erlenkotter

**243A. Planning for Facilities Systems.** Prerequisite: course 212A or equivalent. Planning of location, expansion, and replacement for interdependent systems of facilities. Examination of spatial and dynamic economic considerations. Applications in selected industries and public systems. Mr. Erlenkotter

**243B. Inventory Theory.** Prerequisite: course 210B or consent of instructor. General discussion of inventory models, with emphasis on characterizing the form of optimal policies and efficient computational methods. Consideration of deterministic, stochastic, discrete-time, and continuous-time models. Mr. Tang

**243C. Scheduling Models for Intermittent Systems.** Prerequisite: course 407. Scheduling models and results for single machine, flow shop, job shop, and resource-constrained project networks. Approaches include classical models, recent heuristic approaches, current research in coordinated interaction of computer models, and man/machine interaction.

**243X-243Y-243Z. Operations and Technology Management Seminars (1 unit, 1 unit, 2 units).** Discussion, 90 minutes to three hours. Prerequisite: doctoral standing. Required of all students in operations and technology management concentration during first two years of their Ph.D. work. Student and faculty presentations of ongoing research. May be repeated for credit. Mr. Buffa

**244X-244Y-244Z. Research in Operations and Technology Management (1 unit, 1 unit, 2 units).** (Formerly numbered 244.) Prerequisite: doctoral standing. Normally taken in first and second years of doctoral study. Survey of research literature in operations and technology management. Seminar reports dealing with special topics. May be repeated for credit with topic change.

**245. Special Topics in Operations and Technology Management.** Lecture, three hours. Studies of advanced subjects of current interest in operational management. Emphasis on recent developments and application of specialized knowledge to operational problems. Topics vary each term. May be repeated for credit with topic change.

**246A. Strategy/Policy Analysis and Formulation in Public and Private Nonprofit Sectors.** Prerequisite: completion of management analysis requirement for M.B.A. program. Application of several techniques for strategy/policy analysis and formulation. Specific topics include forecasting/scenario writing, multiple objective decision making, cost analysis, risk/benefit analysis, and social experimentation. Limitations of methodologies examined and concepts illustrated through current applications and case studies.

**246B. Budgeting and Resource Allocations in Public Sector.** Prerequisites: courses 403 and 408, or consent of instructor. Resource allocation objectives/techniques used in federal, state, and local government. Budget analyzed as a planning device, vehicle for allocational decision making, financial control mechanism, crucible for political choice. Provides some insight into staff functions performed by those responsible for resource allocation.

**246C. Management in Public and Private Nonprofit Sectors.** Prerequisite: graduate standing. Examination of roles and management systems of the three sectors of U.S. society; unique aspects and managerial issues of public and private nonprofit organizations and of their political, social, and technical environments. Financial, marketing, and operational considerations and evaluation, control, and ethical issues of service delivery systems. Mr. Andrews

**247A. Environment of the Art World.** Prerequisite: consent of instructor. Consideration and analysis of political, social, economic, and environmental forces in American society as they affect existence and development of arts institutions in the U.S. Exploration of present policies and trends and potential future developments.

**247B. Role of Management in Artistic Decision Making.** Prerequisite: consent of instructor. Descriptive study of criteria for decision making in artistic institutions, including role of the institution in society, economic environment of the arts, and artistic value systems of arts organizations.

**247C. Legal Environment of Arts Management.** Prerequisite: consent of instructor. Exploration of way in which law and the arts relate, role of the lawyer vis-à-vis artist and arts manager, policy underpinnings of the law and effect on the arts, and unsolved problems and issues in areas of interaction.

**248A. Strategic Management in the Entertainment Industry.** Discussion, three hours. Prerequisites: courses 403, 405, 406, 408, and 420, or consent of instructor. Examination of financial and strategic aspects of transactions and company management in the entertainment industry. Cases and topics include organizational behavior and decision making in creative companies; trends in industry structure and competitive economics; accounting issues; institutional and private investment in motion pictures; theatrical distribution, international and ancillary markets (pay TV, videocassettes, syndication).

**249A. Special Topics in Public and Private Nonprofit Management.** Prerequisite: consent of instructor. Studies of advanced subjects of current interest in public/not-for-profit management. Emphasis on recent developments and application of specialized knowledge to public/not-for-profit problems. Topics vary each term. May be repeated for credit with topic change.

**249B. Special Topics in Arts Management.** Prerequisite: consent of instructor. Examination of current issues in management of artistic organizations. Relevant combinations of lectures, discussions, case studies, and team research projects.

**250A. Labor Relations: Process and Law.** Prerequisite: graduate standing. Consideration, at advanced level, of collective bargaining process, labor/management agreement, administration of the contract, law of labor/management relations, union structure and goals, and influence of external labor markets on labor relations. Mr. Fogel, Mr. Jacoby, Mr. Mitchell

**250B. Human Resource Management: Process and Law.** Prerequisite: course 250A. Systematic exposure to theoretical and empirical literature concerning administrative and legal aspects of human resource management. Topics include processes of managing human resources and impact of governmental policies on employer/employee relations. Mr. Fogel, Mr. Jacoby

**250C. Behavioral Foundations of Human Resource Management.** Prerequisite: course 250B or consent of instructor. Topics include development and training; human resource accounting; behavioral foundations of participating management; motivation, productivity, and satisfaction; designing reward systems; and evaluation of organization effectiveness. Emphasis on understanding, predicting, and influencing human behavior in organizations. Mr. Flamholtz, Mr. Massarik

**251. Managing Human Resources.** Management of people in organizations, intended for managers as well as personnel specialists. Organized at three related but distinct levels of analysis: (1) day-to-day utilization of people as organizational resources to achieve optimal productivity, satisfaction, retention, and development; (2) personnel management function or system that performs specialized human resource functions; and (3) issues facing top management which involve management of human resources, including strategic planning for human resources, union/management relations, and design of corporate culture. Mr. Flamholtz

**252. Systems of Employee/Management Participation.** Prerequisite: consent of instructor. Designed to provide understanding of systems of employee/management participation around the world (apart from traditional collective bargaining systems). Specific concepts such as worker participation in decision making, industrial democracy, joint consultation, workers' councils, profit sharing. Mr. Kleingartner

**253. Employee Discipline, Discharge, and Grievance/Appeal Settlement.** Prerequisite: graduate standing. Analysis of conflict in the employment relationship; theoretical and empirical findings. Principles and philosophies that underlie resolution of labor/management impasses, with emphasis on grievance procedures, arbitration, mediation, and fact-finding. Mr. Fogel

**255. Comparative Industrial Relations.** Prerequisite: course 409 or elementary knowledge of labor economics. At national and international levels, historical and contemporary analytical comparison of industrial relations systems within their political, social, and economic environments. Institutions, philosophies, and ideologies of labor, management, and government, and interaction of their power relationships; substance and manner of determination of "web of rules" governing rights and obligations of the parties; and resolution of conflicts. Mr. Hutchinson

**256. Seminar: Human Resource Management and Industrial Relations.** Discussion, three hours. Prerequisites: courses 250A, 250B, 250C. Capstone seminar for students interested in human resource management and industrial relations. Visiting lecturers emphasize recent developments in the field; students prepare seminar papers.

**257. Labor/Management Relations in Public and Nonprofit Sectors.** Prerequisite: graduate standing. Analysis of labor/management relations in government, including public education, and in nonprofit institutions (i.e., artistic, cultural, recreational, and health care). Emphasis on negotiations and group relationships rather than on public personnel administration. Mr. Kleingartner

**258. Selected Topics in Industrial Relations (1 to 4 units).** Prerequisite: doctoral standing or consent of instructor. Examination in depth of problems or issues of current concern in industrial relations. Emphasis on recent contributions to theory, research, and methodology. Of special interest to advanced Ph.D. candidates, academic staff, or distinguished visiting faculty. May be repeated for credit.

**259A. Individuals and Groups in Human Systems.** Lecture, three hours. Introduction for doctoral students to classic and current research in human behavior. Exploration of determinants of human behavior, including influence of culture and developmental change, interpersonal dynamics of power and leadership, group formation and change, intergroup relations, and human systems development. Mr. Fogel

**259B. Advanced Studies in Human Resource Management.** Lecture, three hours. Introduction for doctoral students to leading theories, concepts, and empirical evidence about management of human resources. Main conceptual frameworks grounded in several social sciences and generally presented in certain "classics" included in course reading list.

**259C. Labor Markets and Public Policy.** (Formerly numbered 254.) Lecture, three hours. Prerequisite: one microeconomics course. Survey of major topics in economic analysis of labor markets and public policy, including labor force trends and measurement, compensation determination, productivity, internal labor markets, human capital, unions, collective bargaining, unemployment, and minority and female labor market experience. Mr. Jacoby, Mr. Mitchell

**260A. Advanced Marketing Management.** Prerequisite: course 411 or consent of instructor. Decision-oriented course concerned with solution of product, price, promotion, and distribution channel problems. Extensive use of case studies. Ms. Scott

**260B. Marketing Strategy and Planning.** Lecture, three hours. Prerequisite: course 411 or consent of instructor. Development of a framework for strategic marketing planning based on customer behavior, market segmentation, product positioning, product life cycle, market responsiveness, and competitive reaction. Within this framework, development of key elements in annual marketing process. Mr. Raju

**261A. Management in the Distribution Channel.** Lecture, three hours. Prerequisite: course 411 or consent of instructor. Examination of decisions in the distribution channel. Issues of power in the distribution channel and trade-offs between alternative channel systems.

**261B. Global Marketing Management.** Lecture, three hours. Prerequisite: course 411 or consent of instructor. Analysis of opportunities, distinctive characteristics, and emerging trends in foreign markets, including exploration of alternative methods and strategies for entering foreign markets; organizational planning and control; impact of social, cultural, economic, and political differences; and problems of adapting American marketing concepts and methods. Mr. Hanssens

**262. Price Policies.** Lecture, three hours. Prerequisites: courses 405, 411. Consideration of environment of pricing decision—costs, customer, channels, competition, and regulation. Analysis of when and how to apply specific pricing strategies, including two-part tariffs, quantity discounts, product differentiation, bundling, and auctions. Mr. P'ng

**263A. Consumer Behavior.** Prerequisite: course 411 or consent of instructor. Study of nature and determinants of consumer behavior. Emphasis on influence of sociopsychological factors such as personality, small groups, demographic variables, social class, and culture on formation of consumers' attitudes, consumption, and purchasing behavior. Mr. Kassarijan

**264A. Marketing Research: Design and Evaluation.** Lecture, three hours. Prerequisite: course 411 or consent of instructor. Intended for prospective users of research results rather than for specialists in research. Marketing research is an aid to management decision making. Development of problem-analysis skills, providing knowledge of concepts and methods of marketing research, with increased sensitivity to limitations of marketing data. Mr. Cooper

**264B. Advanced Marketing Research.** Discussion, three hours. Prerequisite: course 264A or consent of instructor. Advanced topics in marketing research, with emphasis on quantitative tools to aid marketing decision making. Topics include demand and market share forecasting, conjoint analysis, market segmentation and cluster analysis, brand positioning and competitive market structures, and assessing market response to price, advertising, promotion, distribution, and sales force. Mr. Bucklin, Mr. Hanssens

**264C. Seminar: Multidimensional Scaling.** Prerequisite: consent of instructor. Seminar providing for study of recent developments in metric and nonmetric multidimensional scaling. Mr. Cooper

**265A. Marketing and the Law.** Lecture, three hours. Prerequisite: course 411 or consent of instructor. Detailed study of legislative enactments (federal, state, or local) which influence operation of institutions engaged in marketing activities, together with analysis of judicial decisions which have interpreted these laws. Mr. Kassarijan

**265B. Social Issues in Marketing.** Lecture, three hours. Prerequisite: course 411 or consent of instructor. Environmental impact of marketing in society; study of theories, methods, and relationships for evaluating transaction behavior in a scientific and humanistic context; macroanalytic perspectives in marketing.

**266A. Product Management.** Lecture, three hours. Prerequisite: course 411. Investigation of process of developing new products and management of mature brands in existing markets. Regarding new product development, focus on concept screening, designing new products, and test marketing. Tactical management of marketing mix with currently available data emphasized in managing mature brands.

**266B. Advertising and Marketing Communications.** Lecture, three hours. Prerequisite: course 411. Detailed review of use of communication tools in marketing. Critical review of advertising and promotional policies from developmental and executional perspectives. Discussion of other forms of marketing communications, with goal of helping students develop integrated communication strategies.

**268. Selected Topics in Marketing.** Lecture, three hours. Prerequisite: course 411 or consent of instructor. Study of selected areas of marketing knowledge and thought. Specific subjects vary each term depending on particular interests of instructor and students. Individual projects and reports. May be repeated for credit.

**269A. Theory in Marketing.** Prerequisite: consent of instructor. Serves as mechanism to introduce students to development of marketing thought. Issues pertaining to general topic of theory development and testing. Prepares students for conducting theoretically grounded research in marketing.

**269B. Research in Marketing Management.** Discussion, three hours. Prerequisite: consent of instructor. Intended for Ph.D. students. Study of research issues associated with marketing management decisions. Recent research in areas of strategic marketing, market segmentation, new product development and introduction, pricing strategies, channel policy, promotion decisions, and sales force management examined critically. Review of both quantitative and behavioral approaches to studying these issues. Mr. Hanssens, Ms. Scott

**269C. Quantitative Research in Marketing.** Prerequisite: consent of instructor. Intended for Ph.D. students in management and related fields. Students are assumed to have good background in marketing principles and to be familiar with probability, statistics, mathematical programming, and econometrics. Review of a range of quantitative models as applied in marketing research. Mr. Hanssens

**269D. Behavioral Research in Marketing.** Prerequisite: consent of instructor. Empirical research in consumer behavior surveyed and critically evaluated from theoretical as well as practical perspectives. Intended for Ph.D. students who will be conducting research in consumer behavior or related areas. Mr. Kassarijan, Ms. Scott

**269E. Special Research Topics in Marketing.** Prerequisite: doctoral standing. Advanced selected topics in marketing, with emphasis on thorough examination of one or two topics in current research and theory. May be repeated for credit.

**269X-269Y-269Z. Workshops: Marketing (1 unit, 1 unit, 2 units).** Prerequisite: doctoral standing. Required of all students during first two years of their Ph.D. work. Series consists of a number of leading scholars in marketing and related disciplines who make presentations to marketing faculty and Ph.D. students. Active participation and intellectual interchange, which helps students gain a richer perspective on the field of marketing. In Progress grading.

**270A. Information Systems Applications.** Prerequisite: course 404. Basic concepts and uses of information systems in organizations. Use of information technology in support of individual and organizational information processing. Description of types of applications (e.g., functional, strategic). Evaluation of systems. Analysis of their impacts. Mr. Swanson

**270B. Information Systems for Planning and Control.** Prerequisites: courses 403 and 404, or consent of instructor. Design of systems to support management planning and control. Approaches and techniques employed at strategic, managerial, and operational levels. Special consideration of accounting and budgeting methods. Impact of planning and control information on human behavior.

Mr. McDonough, Mr. Silver, Mr. Swanson

**270C. Measurement in Information Systems.** Prerequisite: course 404. Role of measurement in management information and decision support systems. Logic and technique of measurement. Applications in individual, organizational, and societal performance.

Mr. Swanson

**270D. Simulation for Management.** Discussion, three hours. Prerequisites: knowledge of computer programming and basic statistics, consent of instructor. Design, implementation, and use of discrete-event simulation models using a general purpose simulation language (e.g., SIMSCRIPT). Emphasis on managerial use of simulation and presentation of results (e.g., statistical analysis, graphics, animation). Extensive programming assignments.

**270E. Expert Systems for Management.** Prerequisite: second-year M.B.A. or doctoral standing or consent of instructor. Examination of expert systems for management, including rule and frame-based systems, certain and uncertain inference, expert system feasibility and development, available commercial systems, and current applications. Project that develops an expert system required. Mr. Sprowls

**271A. Information Systems Technology.** Discussion, three hours. Prerequisite: course 404. Survey of computer hardware, software, telecommunications, and data base technology. Specification and configuration of computer-based systems for management applications. Methods for costing system hardware and software and for assessing computer performance. Trade-off analysis of comparative computer configurations.

Mr. Frand, Mr. Lientz

**271B. On-Line and Network-Based Systems.** Prerequisites: courses 271A and 272A, or consent of instructor. Distributed processing. Networked mini-computer systems. Data communication technology. Data security in computer networks. Cost/benefit analysis for design, configuration, and implementation of on-line and computer networks. Applications to computer utilities; command and control systems; and commercial, medical, and government networks.

Mr. Lientz

**271C. Data Base Management Systems.** Discussion, three hours. Prerequisites: courses 271A and 272A, or consent of instructor. Features and capabilities of generalized data base management systems, including system classification, comparison of software features, and evaluation of specific systems. Emphasis on management uses of such systems. Field study project may be required.

Mr. Silver, Mr. Sprowls

**272A. Information Systems Development.** Discussion, three hours. Prerequisite: course 404. Concepts and methodologies of systems analysis to determine user requirements. Overview of data base management systems, with emphasis on the relational model. Project required, using a microcomputer-based CASE tool and relational dbms.

Mr. Frand, Mr. Sprowls

**273A. Information Systems Management.** Discussion, three hours. Prerequisite: course 404. Managing information systems within organizations. Role of chief information officer. Frameworks for understanding information systems function. Issues of planning, project management, computer operations, security, end-user computing, distributed and departmental computing, managing information systems professionals, costing of services, organizational structures.

**274A. Special Topics in Information Systems.** Prerequisite: consent of instructor. Examination in depth of issues or problems concerned with theory and practice of computing and management and use of information systems. Course may have a single theme or may deal with a number of topics. May be repeated for credit.

**274B. Frontiers in Information Systems.** Prerequisite: doctoral standing or consent of instructor. Examination in depth of problems or issues of current concern in information systems. Emphasis on recent contributions to theory, research, and methodology. May be repeated for credit. Mr. Greenberger

**274X-274Y-274Z. Current Research in Information Systems (1 unit, 1 unit, 2 units).** Discussion, two hours. Prerequisite: doctoral standing. Year-long sequence associated with Information Systems Colloquium Series. Regularly scheduled presentations of current research and state-of-the-art developments in information systems field. Study and discussion of research presented. May be repeated for credit. S/U grading. Mr. Swanson

**278A. Urban Real Estate Financing and Investing.** Discussion, three hours. Prerequisite: consent of instructor. Investor-oriented course in which real estate and business trends are evaluated to determine alternative real estate investment opportunities. Use of current financial, economic, and investment theories and techniques to real estate investment opportunities in case studies and short case problems to illustrate development of investment strategies. Mr. Mittelbach

**278B. Sources, Uses, and Flows of Real Estate Capital.** Discussion, three hours. Analysis of money, capital, and mortgage markets to determine potential availability and costs of mortgage money from alternative sources. Evaluation of various sources of funds to determine factors influencing decisions to make mortgage loans. Examination of all types of lending instruments, particularly mortgage instruments, and mortgage-based securities for their impacts on real estate investment decisions. Mr. Mittelbach

**279A. Special Studies in Urban Land Economics.** Limited to master's or Ph.D. candidates working on thesis- or dissertation-related research. May be repeated for credit.

**279B. Selected Topics in Urban Land Economics.** Discussion, laboratory, and fieldwork. Prerequisite: second-year graduate standing or consent of instructor. Designed for students who wish to pursue a particular topic in housing, real estate, or urban land economics in depth on individual or cooperative basis. All work is computer-based; however, students are provided introduction to use of computers (preferably PCs) in various kinds of real estate analysis. May be repeated for credit.

**279X-279Y-279Z. Urban Research and Development (2 to 4 units each).** Prerequisite: graduate standing or consent of instructor. Exploration of urbanity and its problems; prospects and prescriptions for delivery of a quality life. Macroscopic and microscopic exploration as related to problems of a selected urban area.

**280A. Important Studies in Human Systems.** Prerequisite: doctoral standing or consent of instructor. Survey of seminal studies of human systems. Summarization and critique of literature focal to evolution and current status of the field. Review of such topics as personality, motivation, group and intergroup behavior, systems theory, and organizational design and development. Mr. Massarik

**280B. Survey of Research Philosophies and Methods.** Prerequisite: doctoral standing or consent of instructor. Broad introduction to objectivist and subjectivist philosophies of science, and psychology and sociology of science. Critique of laboratory and field experiments; field studies, analytical and descriptive methods; interview, participant observation, questionnaire, and unobtrusive methods of data collection.

**280C. Personal and Professional Development.** Prerequisite: doctoral standing or consent of instructor. Provides setting where students may explore their own professional values in process of testing and learning values and standards important in human systems Ph.D. program and held by the broader community of system researchers and interveners. Mr. Culbert

**280D. Research Design for Human Systems Studies.** Prerequisite: course 280A or 280C or consent of instructor. Temporal and logical sequences in process of designing studies of human systems, including optimizing the fit of research topic, observation, and data collection methods and data analysis techniques. Actively involves students in preparation of research proposals.

**280F. Human Systems Research Seminar.** Prerequisite: course 280D or consent of instructor. Exploration of various research methods and problems encountered in applying them. Students are actively involved in seminar reports and in class critique of course members' dissertation research designs. May be repeated for credit.

**281A. Sociotechnical Systems.** Prerequisite: graduate standing. Introduction to systems concepts and view of work organizations as interacting social and technical systems open to forces from the surrounding environment. Focus on developing sociotechnical systems analytic approach and understanding advantages of this approach for designing and managing organizations. Mr. Davis

**281B. People in Organizations.** Prerequisite: graduate standing. Introduction to different philosophical perspectives for understanding human behavior. Theories and concepts important for understanding human behavior in organizations, as well as managerial implications of individual, group, and social behavior. Special attention to knowledge about satisfaction motivation and productivity in organizations.

**282. Task Group Processes.** Prerequisite: course 281A or 281B or consent of instructor. Structures, processes, and interrelations of work groups in sociotechnical systems. Emphasis on understanding how group activities interrelate with physical/technical environment. Imparts practical knowledge of task group functioning through class exercises and field observations. Mr. Culbert

**284A. Organization Design.** Prerequisite: course 281A or consent of instructor. Survey of organizational design theories and methods, including bureaucratic, participative, and cognitive models. Development of specific methods ranging from microdesign of jobs to macrodesign of total organizational structures. Special emphasis on sociotechnical and differentiation/integration models. Mr. Davis

**284B. Organization Development.** Prerequisite: course 281B or consent of instructor. Effects of managerial practices on individual self-fulfillment and organizational effectiveness. Theories of organization change and action/research methods of organization development practitioners. Theory merged with practice through seminar discussions of field observations.

**285A. Leadership, Motivation, and Power.** Prerequisite: course 281B or consent of instructor. Theoretical and practical approaches to influencing and motivating people. Relative effectiveness of various leadership styles, different motivation theories, and power tactics from managerial point of view. Use of experience-based learning methods to aid diagnosis and understanding of one's own influence styles. Mr. Culbert

**285B. Managerial Interpersonal Communication.** Prerequisite: course 281B or consent of instructor. Organizational, interpersonal, and personality factors affecting managerial communications. Styles and modes of communication in one-to-one, group, and indirect communication settings. Opportunities offered to deepen understanding of one's own communication styles and skills.  
Mr. McDonough

**287. Sensitivity Training Groups and Their Facilitation.** Prerequisite: consent of instructor through prior or application to department. Development of cognitive and experiential understanding of dynamics of sensitivity training groups and their facilitation. Relevant theory, research findings, and case studies; translation of these inputs into practice.

**288B. Selected Topics in Behavioral Science.** Prerequisite: doctoral standing or consent of instructor. Philosophies and theories of human behavior fundamental to study of individual, group, organizational, and cultural behavior. Exploration in depth of selected theoretic positions, extending and consolidating behavioral science knowledge and applications. May be repeated for credit.  
Mr. Tannenbaum

**288C. Current Issues in Sociotechnical Systems and Organization Design.** Prerequisite: doctoral standing or consent of instructor. Current topics in analysis and design of organizations as sociotechnical systems engaged with various technologies and environments, emphasizing design approaches emanating primarily from Europe and the U.S. In-depth comparisons of selected job and organizational design approaches. May be repeated for credit.

**288D. Current Issues in Human Systems Change and Development through Consulting.** Prerequisite: doctoral standing or consent of instructor. Current topics in philosophy, art, and technology of improving organizations and increasing managerial effectiveness through consulting interventions. In-depth treatment of consultant entry and leaving, diagnosing, process consultation, consciousness raising, team building, values, etc., depending on student and faculty preferences. May be repeated for credit.

**288F. Selected Topics in Organizational Behavior.** Prerequisite: doctoral standing or consent of instructor. Psychological and social psychological aspects of human behavior and performance in organizations. Theoretical models, empirical findings, and applications of such topics as attitudes and values, cognitive and perceptual processes, behavioral conflict, and individual change processes. May be repeated for credit.

**288G. Current Issues in Human Systems Studies.** Prerequisite: doctoral standing or consent of instructor. In-depth study of theory and research pertaining to a particular subject matter or such topics as cross-cultural, organization change, action, and multivariate research, depending on student and faculty interest. May be repeated for credit.

**288X-288Y-288Z. Behavioral and Organizational Sciences Workshops (1 unit, 1 unit, 2 units).** Discussion, two hours. Prerequisite: doctoral standing. Designed to expose Ph.D. students to research within the field while at same time requiring that each Ph.D. student develop a critical framework for evaluating and integrating recent research. May be repeated for credit. S/U grading.  
Mr. Massarik

**290. Organization Theory.** Prerequisite: course 423 or consent of instructor. Analysis of theory and practice of managerial function of organizing through study of the literature, case analyses, and seminar discussion. Individual projects and reports.  
Mr. McKelvey

**291. Planning and Control.** Prerequisite: course 423 or consent of instructor. Analysis of theory and practice of managerial function of planning and control. Implementation of objectives through policy formulation, decision making, and control. Individual projects and reports.

**292A. Research and Development Policy.** Examination of research and development as a process and as an element of a goal-oriented organization. Factors affecting invention and innovation; transfer of technology; organizational and behavioral considerations; coupling of science, technology, and organizational goals; assessing of forecasting technological futures.  
Mr. Goodman

**292B. Models of Organization Behavior.** Prerequisite: consent of instructor. Theoretical frameworks for developing explanatory and predictive models of complex organizations. Exercises in constructing formal models, usually in mathematical or stochastic form and, where appropriate, using materials from field studies to develop empirical tests. These models may be used to discover implications for systems changes recommended in sociotechnical field study.

**292C. Comprehensive Planning in Public Sector.** Prerequisite: consent of instructor. Evolving modes of planning under complexity, with particular emphasis on public sector. Development of policy through standard setting, bargaining, and regulating governing relationships; reality and value judgments; social and technical dimensions of alternatives; and social and technological forecasting.

**293A. Political Environment of American Business.** (Formerly numbered 293.) Lecture, three hours. Prerequisite: consent of instructor. Evaluation of certain criticisms made by business of the American political system. Designed to provide clearer understanding of principal features of American politics, especially as they influence business enterprise.  
Mr. Wilson

**M293B. Morality of Capitalism.** (Formerly numbered 293B.) (Same as Political Science M211.) Lecture, three hours. Prerequisite: consent of instructor. Examination of major philosophical writings that defend or criticize capitalism on basis of principles of right conduct and just social arrangements (i.e., on moral grounds).  
Mr. Wilson

**293C. Ethical Considerations in Business.** (Formerly numbered 298D.) Lecture, three hours. Prerequisite: consent of instructor. Examination of a range of ethical considerations in business decisions involving the individual, corporation, society, and international business. Analysis of cases for classroom presentation and discussion.  
Mr. Cockrum

**294A. Strategy Formulation and Implementation.** Prerequisite: consent of instructor. Case course dealing with strategy decisions and their implementation, executive action, and administrative behavior involved in managing total enterprises. Students are confronted with complex company situations to develop ideas essential to overall managerial direction.

**294B. Environmental Impacts on Management.** Prerequisite: consent of instructor. Examination of ways in which business, government, labor, and consumer organizational managers might respond to external environmental problems. Methods studied for developing and evaluating alternative managerial solutions which permit organizations to assist in improving current and future environmental quality.

**295A. Entrepreneurship and Venture Initiation.** Prerequisite: consent of instructor. Exploration in entrepreneurship particularly concerned with formation and operation of new business ventures. Significant and crucial aspects of exploring new business opportunities and starting a business.  
Mr. Schöllhammer

**295B. Small Business Management.** Prerequisite: consent of instructor. Exploration of crucial aspects in managing small business enterprises. Emphasis on identification and analysis of characteristic operating problems of small firms and application of appropriate methods or techniques for their solution.  
Mr. Schöllhammer

**295C. Corporate Entrepreneurship.** Prerequisite: consent of instructor. Inquiry into nature of entrepreneurship and effective implementation of entrepreneurial strategies in large industrial enterprises. Emphasis primarily on managerial effects aimed at identification, development, and exploitation of technical and organizational innovations, management of new product or process developments, and effective new venture management in a corporate context.  
Mr. Schöllhammer

**296A. International Business Management.** Discussion, three hours. Prerequisite: course 205A or consent of instructor. Identification, analysis, and resolution of managerial issues of policy and action within context of a multinational corporation, with emphasis on problems of adaptation to different sociological, cultural, legal, political, and economic environmental characteristics on planning, structuring of organizational relationships, coordination and control in multinational firms.  
Mr. de la Torre, Mr. Schöllhammer

**296B. International Comparative Management Research.** Prerequisite: doctoral standing or consent of instructor. In-depth study of theory and research pertaining to international business and comparative management. Emphasis on recent research developments and methodological issues. Imparts knowledge on design and conduct of international comparative management research.

**297A. Comparative and International Management.** Prerequisite: course 412 or consent of instructor. Comparative study of practice of management in selected foreign countries, as affected by their social environments and development of management theory.

**297B. International Business Policy.** Prerequisites: course 205A, consent of instructor. Analysis of key managerial problems encountered in a multinational corporation. Concepts and theories acquired in other courses in international business and comparative management, applied to a series of complex cases and simulations of international business operation.  
Mr. de la Torre

**297C. International Business Law.** Prerequisites: courses 205A, 296A. Legal environments in which international business operates; overseas business relationships and organizations; antitrust, taxation, transfer of capital, and technology regulations; patent, trademark, and copyright safeguards; arbitration of international business disputes; expropriation of foreign investments; international business and government relations.

**297D. International Business Negotiations.** Prerequisite: course 296A. Exploration of international business negotiations of multinational enterprises with governmental agencies and foreign-based firms on a wide range of issues, such as establishment/dissolution of joint ventures, extent of foreign ownership/management control, terms/conditions for technology transfer, investment incentives.  
Mr. de la Torre

**298A. Special Topics in Management Theory.** Prerequisite: doctoral standing or consent of instructor. Examination in depth of problems or issues of current concern in management theory. Emphasis on recent contributions to theory, research, and methodology. Of special interest to advanced Ph.D. candidates, academic staff, or distinguished visiting faculty. May be repeated for credit.

**298B. Special Topics in International and Comparative Management.** Prerequisite: doctoral standing or consent of instructor. Examination in depth of problems or issues of current concern in international and comparative management. Emphasis on recent contributions to theory, research, and methodology. Of special interest to advanced Ph.D. candidates, academic staff, or distinguished visiting faculty. May be repeated for credit.





**298C. Special Topics in Sociotechnical Systems.** Prerequisite: doctoral standing or consent of instructor. Examination in depth of problems or issues of current concern in sociotechnical systems. Emphasis on recent contributions to theory, research, and methodology. Of special interest to advanced Ph.D. candidates, academic staff, or distinguished visiting faculty. May be repeated for credit.

**298D. Special Topics in Management (1 to 4 units).** Lecture, three hours. Prerequisite: doctoral standing or consent of instructor. Examination in depth of problems or issues of current concern in management. Emphasis on recent contributions to theory, research, and methodology. Of special interest to advanced Ph.D. candidates, academic staff, or distinguished visiting faculty. May be repeated for credit.

**298X-298Y-298Z. Management Strategy and Policy Workshops (1 unit, 1 unit, 2 units).** Discussion, three hours. Prerequisite: doctoral standing. Designed to develop ability to critically evaluate research in fields relevant to study of management strategy and policy. Papers presented in colloquium format by leading scholars in management strategy and policy. Active participation and intellectual interchange encouraged through discussion of papers in sessions prior to workshop, as well as during colloquium. May be repeated for credit. S/U grading.

**299M. Ph.D. Seminar: Research Methodology.** Discussion, three hours. Prerequisite: doctoral standing. Methodological issues in management research. Emphasis on identification of research opportunities and formulation and evaluation of a research proposal. Alternative goals, settings, and designs. Hypothesis development and testing. Measurement. Implementation considerations.

**299R. Research Methods in Management.** Prerequisite: doctoral standing. Provides feedback and evaluation of papers prepared for research requirement. Quarterly meetings to discuss expectations of research committee and Doctoral Office. Students must enroll the term in which they are submitting their research paper. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

The following courses are acceptable toward the M.B.A., M.S., and Ph.D. degrees within the limitations and conditions prescribed by the curricula of the John E. Anderson Graduate School of Management.

**400. Mathematics for Management.** Prerequisite: graduate standing. Fundamental mathematics for business, including topics from matrix algebra, probability, and calculus, with applications to model building and decision making in business firms. S/U grading.

**401. Managerial Economics.** Prerequisite: graduate standing. Introduction to measurement and determination of economic activity in the aggregate and to role of prices in decision making of the organization. National income accounting, basic economic policy, markets and prices, competition and monopoly, applications.

**402. Data Analysis, Statistics, and Decision Making.** Prerequisite: graduate standing. In-depth introduction to probability, decision theory, and statistical inference, with emphasis on solution to actual business problems.

**403. Financial Accounting.** Lecture, three hours. Prerequisite: graduate standing. Introduction to fundamental financial accounting methods and procedures, with emphasis on financial statements. Provides basis for firm understanding of "the language of business" — accounting.

**404. Information Systems.** Prerequisite: graduate standing. Introduction to information systems in organizations from perspective of general manager. Managerial and strategic uses of information systems, information technology that underlies these systems, and ways such systems are developed and managed.

**405. Managerial Economics.** Analysis of decision making in the firm, competitive policies and market structure, revenue and cost behavior.

**406. Global Economy.** Prerequisites: courses 402, 403, 405. Provides analytical framework required for understanding the way changing macroeconomic conditions in world economy affect economic growth, inflation, interest rates behavior, exchange rate determination, global competitiveness, unemployment, and the trade account. Provides skills to enable students to assess critically how developments in world economy affect particular industry environments.

**407. Managerial Model Building.** Prerequisite: course 400 or 402 or equivalent. Survey of uses of formal modeling approaches in managerial decision making. Emphasis on model types and formulations, and use of solutions obtained from computer routines. Application areas include finance, marketing, production, and public systems.

**408. Managerial Finance.** Analysis of main decision areas of managerial financial management, aimed at principles generally applicable to all types of organizations. Emphasis on financial planning and control, sources of funds, developing objectives and standards which lead to effective allocation and use of organization's resources.

**409. Managing Human Resources in Organizations.** Lecture, three hours. Introduction to human resource management function and management of human behavior in organizations. Emphasis on relationships among individuals, groups, and organizational units as they influence the managerial process and development of prospective general managers.

**410. Operations and Technology Management.** Lecture, three hours. Prerequisites: courses 402, 403, 405, 408, 411. Principles and decision analysis related to effective utilization of factors of production in manufacturing and nonmanufacturing activities for both intermittent and continuous systems. Production organizations, analytical models and methods, facilities design, and design of control systems for production operations.

**411. Elements of Marketing.** Principles of market-driven managerial decision making: consumer, competitor, and company analysis, market segmentation, definition of target markets, and product positioning. Management of marketing function: product and pricing decisions, channels of distribution, marketing communications.

**412. Management of Organizations.** Prerequisite: graduate standing. Integrative approach to theory and practice of management in complex organizations, emphasizing managerial roles in designing organizational structures, creating/maintaining planning, control, information, incentive systems, different patterns of human interaction such structures and systems tend to produce.

**413A. Programming for Management Applications.** Lecture, three hours. Prerequisite: graduate standing. Building management application systems. Programming in a high-level procedural language. Software specification, design, coding, testing, implementation, and maintenance. Extensive programming assignments.

**413B. System Building with Advanced Tools.** Prerequisite: graduate standing. Building management application systems with advanced software tools. Very high-level languages. Report writers. Query and graphics languages. Application generators. Extensive hands-on assignments.

**420. Management Policy.** Prerequisite: course 412. Evaluation and formulation of organization's overall policies and strategies. Economic, heuristic, and social process approaches to policy formulation, environmental analysis, and organizational appraisal. Senior management's role in managing the policy process.

**421A. Management Communications I (1 unit).** Lecture, 30 minutes; laboratory, one hour. Strategies and techniques for more effective individually written managerial communications such as memos, reports, decision recommendations, etc. Emphasis on analytically based persuasive writing. S/U grading.

**421B. Management Communications II (1 unit).** Lecture, 30 minutes; laboratory, one hour. Strategies and techniques for more effective preparation of group writing assignments in managerial contexts where multiple audiences are important. Issues include achieving a single voice, establishing appropriate tone, incorporation of multiple points of view, etc. S/U grading.

**422. Analysis and Communications.** Discussion, three hours. Prerequisite: graduate standing. Study and practice of oral and written management communications, including audience analysis, persuasion, revising and editing, presentation of technical information, and uses of computer technology. Organized around writing and speaking exercises. Personal attention to students' written communications and oral presentations.

**423. Advanced Management Theory.** Advanced study of management theory in formally organized enterprise through significant readings; discussion of advanced approaches and techniques developed from applying theory; use of theory to integrate methods and findings of quantitative and behavioral sciences; lectures on sophisticated application of management theory in practice.

**441. Managerial Problem Solving: Complex Systems.** Prerequisite: course 414. Study of organizational and interorganizational problem solving, including identification, formulation, data collection, forecasting, assumption testing, solution methods, implementation, evaluation, control, and dealing with conflict and ambiguity. Organization of projects in which problem solving is experienced at various levels of complexity.

**444A-444B. Management Field Study.** Must be taken in two consecutive terms in second year (or its equivalent) for part-time students. Supervised study of an organization, including establishment of client consultant relationship, identification of problem or strategic question, design of study, collection and analysis of data, development and reporting of implementable recommendations. In Progress grading.

**450. Fieldwork in Behavioral Science Management Development (4 or 8 units).** Prerequisites: course 287, consent of instructor. Supervised practical fieldwork in all phases of laboratory education for management development, such as sensitivity training laboratories, creativity and personal growth laboratories, simulated managerial behavior laboratories, etc.

**451. Fieldwork in Organizational Development (2 to 12 units).** Prerequisite: course 284B or 450 or consent of instructor. Supervised practical fieldwork in organizational development consultation in inter-personal, group, intergroup, total organization, and interorganizational settings.

**452. Fieldwork in Technical Assistance for Minority Business Enterprise (1 to 4 units).** Prerequisite: completion of first year of master's program or consent of instructor. Supervised field experience in business consulting and other forms of technical assistance for business firms and management in ethnic communities; seminars and other shared learning experiences in transmitting business administration technology to the urban ghetto.

**453. Fieldwork in Arts Management (4 to 12 units).**

**Prerequisite:** consent of instructor. Supervised field experience and practical work in all phases of an arts organization (pictorial, performing, or community), concentrating on its managerial problems and its relationship to the community and society in general.

**454. Fieldwork in Organizations.** Prerequisites: completion of two terms of M.B.A. program, consent of supervising faculty and director of M.B.A. program. Supervised, nonpaid practical experience or fieldwork in an organization as an intern or fellow. Execution of predetermined assignment(s) pursuant to a defined program of study which may include formal classwork. May not be repeated for credit.

**495. Preparation for Teaching Business and Management.** Prerequisites: graduate standing, consent of instructor. Study of problems and methods in teaching management. Seminars, workshops, and practice teaching. May not be applied toward M.B.A., M.S., or Ph.D. degree requirements. S/U grading.

The following individual study or research courses (501 through 599) may be used, within limitations and conditions prescribed by the school, to satisfy minimum higher degree requirements.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA AGSM graduate adviser and assistant dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596A-596N. Research in Management (1 to 8 units each).** Prerequisite: consent of director of master's program or director of Ph.D. program by special petition. Directed individual study or research. May be repeated.

**597. Preparation for Qualifying Examinations (4 or 12 units).** Prerequisite: consent of director of master's program or director of Ph.D. program by special petition. Preparation for master's comprehensive examination or Ph.D. qualifying examinations.

**598. Thesis Research in Management (4 or 12 units).** Prerequisite: consent of director of master's program by special petition. Research for and preparation of master's thesis. May be repeated. S/U grading.

**599. Ph.D. Dissertation Research in Management (4 or 12 units).** Prerequisite: consent of director of Ph.D. program by special petition. Research for and preparation of Ph.D. dissertation.

## Executive M.B.A. Program

Admission to the Executive M.B.A. Program is prerequisite for enrollment in the following courses:

**461. Managerial Problem Solving (2 units).** Focus on individual problem-solving and decision-making skills. Alternative conceptual frameworks presented for augmenting individual's diagnostic and decision-making skills. Use of readings, cases, decision simulations, and discussions to explore areas of charting job and career progress, working with others, and shaping the work culture. Ms. Lawrence

**462. Economic Analysis for Managers.** Policy-oriented problems in antitrust, tax securities, and environmental regulation. Concepts of microeconomic theory illustrated. Topics include traditional antitrust regulations, new trends in antitrust, private versus government antitrust, securities regulation, environmental regulations, and a business firm's optimal response to regulation. Mr. Tabbush

**463. Data Analysis and Management Decisions under Uncertainty.** Survey of statistical model building, with emphasis on managerial interpretation of statistical summary of data. Classical statistics covered through multiple regression to support courses in finance and marketing that follow. Fundamental approaches to decision making under uncertainty. Mr. Stern

**464. Managerial Accounting.** Familiarizes the manager with functions of accounting by focusing on use of external financial reports for evaluating corporate performance and use of accounting information for internal planning and control. Mr. Buckley

**465. Quantitative Methods for Managers.** Survey of modeling approaches to managerial planning and decisions. Emphasis on ability to recognize situations where models can be used advantageously, to work effectively with model building specialists, and to make good use of models once they have been developed. Mr. Mamer

**466A-466B. Financial Policy for Managers (4 units, 2 units).** Modern financial management deals with decision making under uncertainty for corporate financial management, for portfolio investment decisions, for financial institutions, and for international financial management. Focus on learning sound theoretical tools and applying them in casework. Mr. Torous

**467. Management Issues in Information Systems (2 units).** Growing role of information systems in the corporation and how they change ways of doing business. Examples from airlines, health, computer, communications, distribution, and publishing industries. Strategic, organizational, and societal implications. Mr. Geis

**468. Economic Forecasting (2 units).** Macroeconomic theory and its application to business forecasting. Major economic indicators and their historical description of the U.S. economy; theoretical tools that business economists use to analyze impacts of monetary and fiscal policy; macroeconomic techniques applicable to business decisions. Mr. Edwards

**469. Management of Human Resources.** Introduction to major areas of human resource management — personnel management, labor economics, labor law, and labor relations — accomplished by examining some major concepts, theories, and research related to each of these topic areas, as well as some practical problems for managers posed by each. Mr. Flammholtz

**470A. Introduction to Action Research and Policy Analysis (2 units).** Provides methods of organizational and strategic analysis to determine relationship of the organization with its environment. Mr. McDonough

**470B. Strategic Overview (2 units).** Preparation of a strategic overview of a selected international company entailing collection and analysis of primary and secondary data, including (but not limited to) interviews of corporate executives, corporate financial and marketing data, industry reports, and customer and competitor interviews and/or surveys. Mr. McDonough

**470C. Action Research Project (2 units).** Further research and analysis of one of the strategic issues facing the selected company and identified in the strategic overview (course 470B). Mr. McDonough

**470D. Seminar: Policy Analysis (2 units).** Site visit to selected company, presentation of final reports, and evaluation of student efforts by corporate personnel. Mr. McDonough

**472. Marketing Strategy and Policy.** Strategic marketing decisions, including development of marketing objectives and strategies and implementation of these strategies through pricing, channel, promotion and new product decisions. Ms. Scott

**473. Managerial and Organizational Processes.** Development of an understanding of workings of large, complex organizations, with emphasis on macroanalytic, rather than on microanalytic, approach. Mr. Ouchi

**474. Operations and Technology Management: Systems, Strategies, and Policies.** Lecture, three hours. Analysis of strategic and operating policies and decisions for systems that produce goods and services. Examination of role of comprehensive planning, inventories, scheduling of resources, distribution systems, and system location. Comprehensive operating problems. Mr. Yost

**475. International Managerial Policies and Strategies.** Study of economic and business decisions in an international context, with emphasis on formulation and implementation of management strategies in multinational enterprises. Application of concepts of international economic analysis and exploration of international corporate strategies. Mr. de la Torre, Mr. Schöllhammer

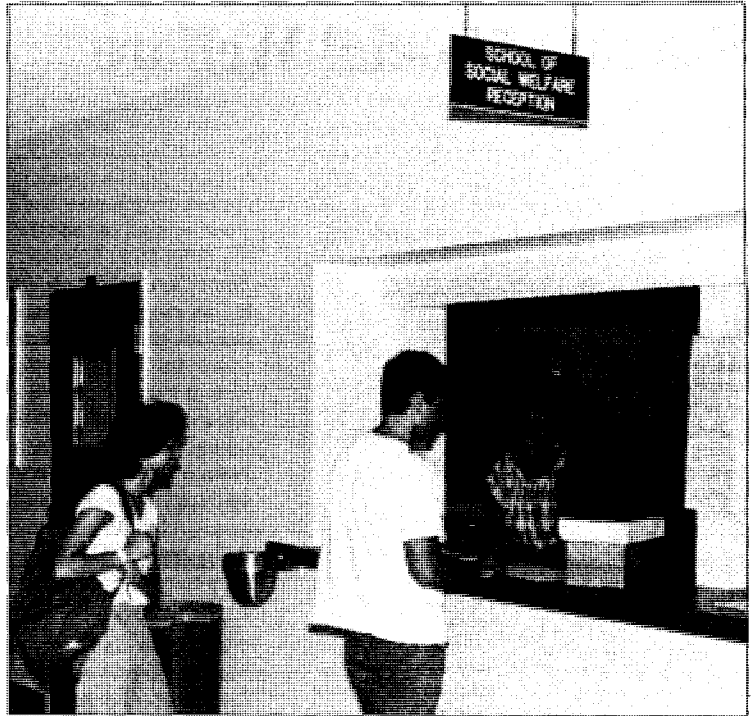
**476. Competitive Strategy and Business Policy.** Study of general management task of forging a corporate competitive strategy. Emphasis on economics of business rivalry within a variety of industrial settings and implications of changing environments on business strategy. Mr. Yip

**477. The Manager and Business/Society Relationships.** While organizations may, to some extent, choose their immediate environments, there are broad environmental factors and trends that affect most, if not all, organizations. Examination of emerging trends in key areas of government regulation, labor relations, international trade, basic economic structure, and social responsibility. Mr. Wilson

**478. Selected Topics in Management (2 units).** Examination of selected problems and issues in an area of current concern in management. Mr. Schöllhammer and the Staff

# School of Social Welfare

Rosina M. Becerra, Dean



# 14

The UCLA School of Social Welfare is one of the nation's great professional schools of social work. Its mission is to contribute to the understanding of the social, economic, and political forces which are shaping our individual and communal lives and to use that knowledge to help in developing appropriate social policy and social work practice responses — whether under public, voluntary, occupational, or proprietary auspices.

Social workers are employed as planners, policy analysts, administrators, and direct service providers in all of the human services, including health, family and child welfare, mental health, services to the aged, manpower development and training, etc. Social workers are concerned with the causes, treatment, and prevention of personal and social ills and with the broader trends in the society which impact on the well-being of individuals, families, and communities. The school's objective is to prepare its graduates not only for practice as it is but for imaginative leadership in creating the social work practice of the future.

# School of Social Welfare

247 Dodd Hall, (310) 825-2892

## Professors

Rosina M. Becerra, Ph.D., *Dean*  
Yeheskel Hasenfeld, Ph.D.  
Harry H.L. Kitano, Ph.D. (*UCLA Alumni and Friends of Japanese Ancestry Professor of Japanese American Studies*)  
Jack Rothman, Ph.D.  
Leonard Schneiderman, Ph.D.  
Fernando M. Torres-Gil, Ph.D.

## Professors Emeriti

Jerome Cohen, Ph.D.  
Nathan E. Cohen, Ph.D.  
Maurice F. Connery, D.S.W.  
Jeanne M. Giovannoni, Ph.D.  
Doris S. Jacobson, Ph.D.  
Alfred H. Katz, D.S.W.  
Harry Wasserman, D.S.W.

## Associate Professors

A.E. Benjamin, Ph.D.  
Diane de Anda, Ph.D.  
James E. Lubben, D.S.W.  
Ruth E. Zambrana, Ph.D.  
Alex J. Norman, D.S.W., *Emeritus*

## Assistant Professors

Karin A. Elliott Brown, Ph.D.  
Bonnie Burman, Ph.D.  
Rachelle A. Dorfman, Ph.D.  
Alfreda P. Iglehart, Ph.D.  
Mitchell T. Maki, Ph.D.  
Ailee Moon, Ph.D.

## Academic Coordinators

Walter M. Furman, M.Phil., *Center for Child and Family Policy Studies Director*  
Wanda S. Ballenger, M.S.W., *Center for Child Welfare Director*  
Elsa Ten Broeck, M.S.W., *Inter-University Consortium on Child Welfare Director*  
Gloria Waldinger, D.S.W.

## Fieldwork Consultants

Juanita D. Chávez, M.S.W.  
Cheryl Gully, M.S.W.  
Jane E. Kurohara, M.S.W.  
Gerardo P. Laviña, M.S.W.  
Joseph A. Nunn, Ph.D., *Director*  
Joy Sigmund Rubin, M.S.W.  
Katherine M. Kolodziejski, Ph.D., *Emerita*  
Winifred E. Smith, M.S.W., *Emerita*

## Degrees Offered

Master of Social Welfare (M.S.W.)  
Doctor of Philosophy (Ph.D.) in  
Social Welfare

The UCLA School of Social Welfare offers an M.S.W. program in Social Welfare and a doctoral program of study leading to the Ph.D. The programs are designed to prepare candidates who wish to train for careers in teaching, research, administration, and high-level practice positions. Courses are scheduled in the School of Social Welfare and in schools and departments of related disciplines and professions.

## Master of Social Welfare

### Admission

In addition to University minimum graduate admission requirements, the master's program of the School of Social Welfare requires a minimum of five courses in social sciences or a combination of social science and social welfare subjects as prerequisite undergraduate preparation for graduate study in the field of social work. Completion of courses in psychology and sociology is expected, but an elementary statistics course with a grade of B or better is required.

A grade-point average of 3.0 or better is required in all courses taken during the junior and senior years. However, applicants with a GPA below 3.0 may be considered when there is clear evidence of capacity for academic achievement and professional development. In addition, the school applies the following criteria in the selection of candidates: personal suitability for professional education and potential for successful social work practice, a satisfactory state of health, and an adequate financial and personal plan to permit completion of degree requirements.

The General Test of the Graduate Record Examination (GRE) is required, as are official transcripts from every school attended since high school. GRE results must be submitted prior to any evaluation of the application for admission. GRE scores must be less than five years old and may be repeated to achieve a higher score, if desired. The highest GRE General Test score achieved is evaluated for admission. In addition, international students whose native language is other than English and whose higher education was not obtained in an English-speaking institution are required to take the Test of English as a Foreign Language (TOEFL). Refer to "Proficiency in English" under "Graduate Admission" in Chapter 3 for further information. The school may request that you take specified additional examinations to assist in the assessment of candidacy for admission.

Three letters of recommendation are required. In addition, an autobiographical statement and a professional concepts and goals statement must accompany the application.

Prospective students must apply simultaneously to (1) the School of Social Welfare and (2) UCLA Graduate Application Processing. Both applications and the school brochure can be obtained by writing to School of Social Welfare Admissions, 247 Dodd Hall, UCLA, Los Angeles, CA 90024-1452, or by calling (310) 825-7737.

### Major Fields or Subdisciplines

Direct social work practice and community administration policy and planning are offered as social work methods. Specializations are available in child and family welfare, health and aging, and mental health.

### Course Requirements

A total of 76 units in courses in the School of Social Welfare is required, including three courses in social welfare policy and services, three courses in the human behavior and social environment sequences, six courses in methods of social work practice, four courses in social welfare research, plus five terms of field instruction. Appropriate substitutions or waivers may be made by the dean. You may, with consent of the dean, take courses in other graduate schools of the University in fulfillment of the degree requirements.

With consent of the instructor and dean, you may substitute tutorial studies of comparable material in the 500 series for either required or elective courses. Only Social Welfare 596A and 597A may be taken. A maximum of nine units of 500-series courses may be applied toward the entire graduate course requirement for the degree.

### Practicum Requirements

There is a concurrent field placement in each of the two years. Time spent in placement may vary according to guidelines established by the school, but approximately 1,300 hours are required.

### Thesis Plan

While no University-approved master's thesis is required for the M.S.W. degree, the curriculum requires theoretical courses in research methodology. As a component of the second-year research course, the satisfactory comple-

tion of an individual research project, or participation in a group research project concerned with a social welfare problem, is required.

### Comprehensive Examination Plan

All M.S.W. candidates must pass an oral comprehensive examination in Spring Quarter of the second year of study. The examination may cover the entire range of the program.

## Ph.D. Degree

### Admission

In addition to the University minimum requirements, the school requires completion of an M.S.W. degree program with a superior record from an accredited school of social work. This requirement may be waived if an applicant possesses a postgraduate degree and professional experience in a related field. Such candidates, however, may be required to fulfill specified requirements in the M.S.W. program in addition to the normal doctoral requirements.

Admission criteria include the quality of your performance in previous undergraduate and graduate study, capacity for doctoral-level scholarship, ability to express yourself clearly in writing, success in professional employment and other pertinent experience, results of the Graduate Record Examination (GRE), and personal qualifications indicating suitability for advanced study and research.

The General Test of the GRE is required, as are official transcripts from every school attended since high school. In addition, international students whose native language is other than English and whose higher education was not obtained in an English-speaking institution are required to take the Test of English as a Foreign Language (TOEFL). Refer to "Proficiency in English" under "Graduate Admission" in Chapter 3 for further information. The school may request that you take specified additional examinations to assist in the assessment of candidacy for admission.

Three letters of recommendation and a type-written statement of professional and educational objectives are required. To exemplify your communication skills, you may submit any of the following: published articles, master's thesis, or other theoretical/research-oriented unpublished papers.

Although a personal interview is not required as part of the application procedure, whenever possible a conference is arranged with a member of the doctoral faculty.

Prospective students must apply separately to the School of Social Welfare and to UCLA Graduate Application Processing. Both applications and the school brochure are available by writing to the School of Social Welfare Ph.D. Program, 247 Dodd Hall, UCLA, Los Angeles, CA 90024-1452.

### Major Fields or Subdisciplines

The program trains research-oriented scholars to advance the field of social welfare and social work through research and knowledge development, and to assume leadership roles in academic, policy, and practice settings. The curriculum is organized into three major areas — specialization in a substantive area of social welfare, integration of social and behavioral science knowledge into social welfare, and research methods. Programs of study are planned in relation to the special and individual needs and interests of the students.

### Course Requirements

There is a minimum core of required courses which includes two seminars on practice theory and research, two seminars on social welfare policy, and two graduate-level courses in statistics. In addition, you are required to take (1) at least three graduate-level courses in the social and behavioral sciences outside the school related to your specialization in social welfare, (2) three courses in advanced research methods, and (3) three terms of research internship.

Every effort is made to individualize the curriculum around your area of interest and plans for dissertation. In order to achieve this goal, a variety of patterns is used, including tutorials, small seminar groups, special courses in the M.S.W. program, and courses in other departments and schools of the University. You must complete course requirements and your dissertation within a maximum of 20 terms of full-time enrollment.

### Qualifying Examinations

The qualifying examinations consist of two parts — (1) an examination in social welfare policy and practice, reviewing current theory and research, that is given at the end of the third term of your first year and (2) a series of two major papers demonstrating your knowledge and analytical skills in (a) application of social and behavioral science knowledge to social work and (b) utilization of research methods to a problem area. Each paper must be evaluated by a two-member committee.

The qualifying examinations are graded on a pass/fail basis, and passing them is prerequisite to pursuing the dissertation. If you fail one or more components, you may be permitted to retake the examination(s) only with the recommendation of the school's doctoral program committee.

Advancement to doctoral candidacy follows successful completion of the written qualifying examinations and the University Oral Qualifying Examination which covers the dissertation proposal and related areas and is administered by the doctoral committee.

### Dissertation/Final Oral Examination

The dissertation must be an independent and original investigation which contributes to the existing body of knowledge in social welfare. The choice of topic and methodological development of your proposal must be approved by your dissertation committee, according to the regulations of the Graduate Division.

After acceptance of the dissertation in its final form, you may be required to take a final oral examination which covers the field within which your dissertation falls.

### Graduate Courses

Consult the school for curriculum updates.

**201A-201B. Dynamics of Human Behavior (3 units each).** Biopsychosocial factors associated with individual and group behavior and development as applicable in social functioning of individuals and groups. Emphasis on theoretical issues and research evidence which contribute to a unified theory of human development.

**202A-202B. Dynamics of Human Behavior (2 units each).** Prerequisites: courses 201A-201B. Deviations and pathologies or stresses in physical, emotional, and social areas of human functioning as those problems relate to role and function of the social worker.

**203A-203B-203C. Integrative Seminars (2 units each).** (Formerly numbered 203.) Prerequisite: consent of instructor. Integrative courses which bring together theory and practice of social work in a variety of topic areas relevant to the profession. Includes identification of problem areas and populations-at-risk requiring further examination. S/U or letter grading.

**205A. Cross-Cultural Awareness (2 units).** Designed to aid students in development of professional perspectives that will allow them to work effectively with members of myriad cultural groups, to discuss with clarity alternative concepts of culture in determination of individual behavior responses, and to identify their own personal cultural values and assumptions. S/U grading.

**205B. Group Conflict and Change (2 units).** Study of phenomena of group conflict and change as they appear in the social welfare matrix of groups, communities, and social institutions; relationship between conflict and social and cultural change; major research contributions in understanding of these phenomena.

**220. History and Philosophy of Social Welfare (2 units).** History of social work as a field: body of knowledge, method and process, and point of view analyzed within context of economic, political, social, philosophical, and scientific climate of the period.

**221A. Social Welfare Policy and Services I.** Lecture, three hours. Nature, roles, and history of welfare institutions in different societies; applicable social system theory with special reference to values as seen by different components of the welfare system; theory and research about needs met and not met, about various welfare policies and organizational forms, and about social change to prevent needs. S/U or letter grading.

**221B. Social Welfare Policy and Services II (2 units).** Understanding of significant theoretical constructs and relevant empirical evidence dealing with how organizations develop and maintain their internal functions. Development of beginning skill in organizational analysis. Special attention to organizational analysis of social welfare services.

**223. Seminar: Social Work Profession (2 units).** Nature and role of social work in contemporary society; relationships with other professions; probable future trends in the profession; social work ethics, professional organizations, certification licensing; professional responsibility for continued self-criticism and improvement of the profession. S/U grading.

**225A-225B. Social Welfare Policy.** Discussion, three hours. Prerequisites: doctoral standing and/or consent of instructor:

**225A. Formulation and Analysis.** Examination of principal issues in development, formulation, and adoption of U.S. social welfare policies, with particular focus on income distribution and redistribution. Emphasis on analysis of social policy issues and conceptual frameworks for analysis.

**225B. Implementation and Evaluation.** Examination of issues in implementation and evaluation of social welfare policies, particularly those pertaining to provision, organization, and delivery of social services, including auspices funding, distribution, criteria for effectiveness, and use of quantitative methods in policy analysis.

**230A-230B-230C. Theory of Direct Social Work Practice I, II, III (2 units each).** Corequisite: required social work practicum. Introduction to theory of social work with individuals and small groups and to principles of practice which are derivative of this and related theory. S/U or letter grading.

**231A-231B-231C. Advanced Theory of Direct Social Work Practice IV, V, VI (2 units each).** Corequisite: required social work practicum. Advanced level, critical analysis of theories, concepts, and principles underlying social casework practice. Specific attention to deviation and stress as conditions affecting functioning of individuals and groups, and to diagnostic knowledge and competence required in rehabilitation and prevention.

**240A-240B-240C. Community Administration Policy and Planning I, II, III (2 units each).** Corequisite: required social work practicum. Historical and theoretical developments in administration, planning, and community organization; understanding the community as a social system, administration of organizations; role of the practitioner in identification, analysis, and evaluation of needs, existing programs, policies, structures, and strategies of intervention. S/U or letter grading.

**241A-241B-241C. Advanced Theory of Social Work Method (Administration, Planning, and Community Organization) IV, V, VI (2 units each).** Corequisite: required social work practicum. Emphasis on various patterns of community action for attaining social welfare objectives; research and field experience directed toward study of social problems within context of community planning; emerging patterns of physical, economic, and social planning within framework of social change theory.

**245A-245B. Development of Social Work Practice Theory.** Discussion, three hours. Prerequisites: doctoral standing and/or consent of instructor:

**245A. Epistemology of Practice.** Guiding scientific models of practice theories; process of emergence, development, and change of practice theories; intellectual foundations of practice theories; how professionals learn, apply, accumulate, and modify their practice knowledge; science and practice interplay.

**245B. Models of Social Work Practice Research.** Research for practice, with major emphasis on methods of intervention research which seek to design, test, evaluate, and disseminate innovative intervention technologies.

**258. Critical Problems in Social Welfare (2 units).** Prerequisites: doctoral standing and/or consent of instructor. Current problems in the field of social welfare. Specific topics vary depending on research and educational interests and needs of class. May be repeated for credit. S/U grading.

**280. Social Welfare Research (2 units).** Sources, nature, and uses of social work theory and research-based knowledge and of broader social data relevant to social welfare activities. Critical analysis of major methods of developing scientific knowledge.

**281A-281B-281C. Advanced Social Welfare Research (2 units each).** Individual or group research projects requiring intensive examination and analysis of a social problem area, directed toward development of research knowledge and techniques for social work practice. In Progress grading.

**285A-285B-285C. Research in Social Welfare.** Prerequisite: doctoral standing or consent of instructor. Review of areas of research of concern to social workers, with special attention to design, instrument construction, data collection, data processing, data reduction, analysis, and interpretation. Designs studied include survey, panel, experimental observation, and theory development research. S/U or letter grading.

**286A-286B-286C. Survey of Research Methods.** Prerequisites: doctoral standing and/or consent of instructor. Basic concepts underlying research methods. Content includes theoretical and conceptual approaches to research problem formulation; research design, including experimental, comparative, and survey; sampling; statistical methods; methods of observation and techniques of data analysis.

**290A-290B-290C. Seminars: Social Work (2 units each).** Series of seminars dealing with trends in social work and social welfare, with focus on current social problems affecting individuals, groups, and communities and new patterns of intervention based on recent demonstrations and research.

**M290D. Women, Health, and Aging: Policy Issues (2 or 4 units).** (Same as Health Services M241.) Lecture, three hours; discussion, one hour. Prerequisites: two upper division social sciences courses, two upper division biological sciences courses, or equivalent, consent of instructor. Social and economic context of older women's aging, major physical and psychological changes older women experience, delivery of health services to this population, and policies that respond to their health needs.

**M290E-M290F-M290G. Child Abuse and Neglect (2 units, 2 units, 1 unit).** (Same as Community Health Sciences M245A-M245B-M245C, Dentistry M300.5A-M300.5B-M300.5C, Education M217G-M217H-M217I, Law M281A-M281B, Medicine M290A-M290B, and Nursing M290A-M290B-M290C.) Course M290E is prerequisite to M290F, which is prerequisite to M290G. Intensive interdisciplinary study of child physical and sexual abuse and neglect, with lectures by faculty members of the Schools of Dentistry, Education, Law, Medicine, Nursing, and Public Health and the Department of Psychology, as well as by the relevant public agencies.

**401A-401B-401C. Practicum: Social Work (2 units, 4 units, 4 units).** Laboratory, 20 hours. Educationally directed practicum conducted in selected health, welfare, and educational facilities. Provides opportunities for students to test their theoretical knowledge and to acquire a disciplined practice foundation in the profession. In Progress and S/U grading.

**402A-402B-402C. Advanced Practicum: Social Work (6 units, 4 units, 2 units).** Laboratory, 24 hours. Prerequisites: courses 401A-401B-401C. Practicum in social work, arranged for students in keeping with their major field of study. In Progress and S/U grading.

**490. Professional Communication for Social Welfare (2 units).** Writing workshop on students' papers in progress, with an eye toward scholarly publication. Analysis and group discussion of rhetorical and stylistic principles. May be repeated once. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596A. Special Study and Research for M.S.W. Candidates (2 to 8 units).** Individual programming for selected students to permit pursuit of a subject in greater depth.

**596B. Special Study and Research for Ph.D. Candidates (2 to 8 units).** Prerequisites: doctoral standing and/or consent of instructor. S/U grading.

**597A. Preparation for M.S.W. Comprehensive Examination (2 to 8 units).** Prerequisite: consent of instructor.

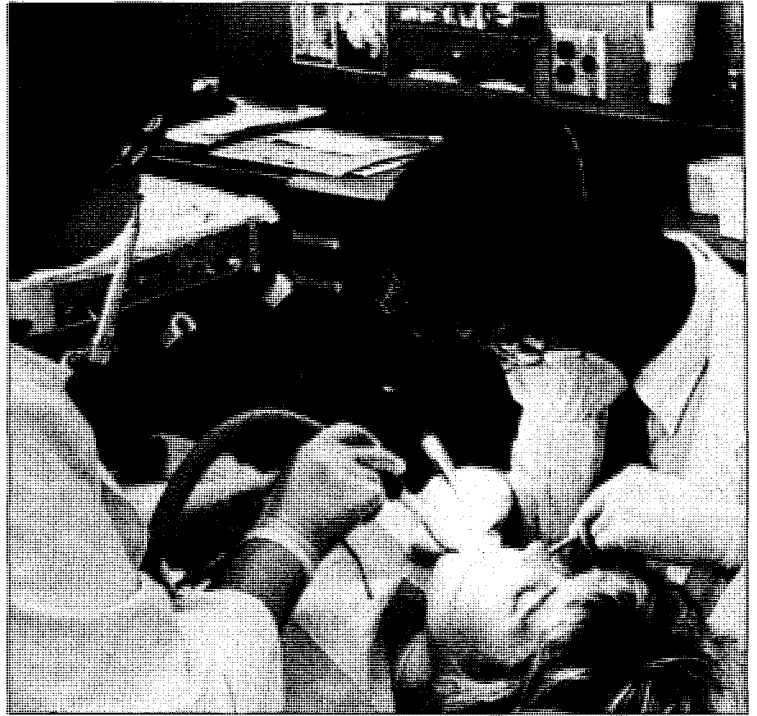
**597B. Preparation for Ph.D. Qualifying Examinations (2 to 8 units).** Prerequisites: doctoral standing and/or consent of instructor. S/U grading.

**599. Ph.D. Dissertation Research in Social Welfare (2 to 8 units).** Prerequisites: doctoral standing and/or consent of instructor. S/U grading.

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# School of Dentistry

Henry M. Cherrick, Dean



# 15

The UCLA School of Dentistry has developed a national and international reputation for its teaching and research activities. Challenging educational, training, and research programs prepare the dental student for a professional career dedicated to patient treatment and service. The curriculum is carefully designed to prepare students for changes in treatment modalities and health care delivery systems. Students become actively involved in preventive and clinical dental care immediately in their training and soon make valuable contributions to the clinical health team. The clinical instruction system emphasizes a patient care approach in which each patient is treated comprehensively. Students interact with their colleagues, faculty, and dental auxiliary personnel in much the same way as they later will interact in a private or group practice.

Opportunity exists for dental students to undertake programs designed to meet their special needs; fourth-year electives encourage more advanced training in an area of particular interest. In addition to basic and applied research programs within the school, students participate in community service programs such as the Wilson-Jennings-Bloomfield UCLA Venice Dental Center, the Roybal Children's Dental Center, and the Mobile Dental Clinic, the latter in conjunction with the University of Southern California. A graduate program and a number of postdoctoral specialty programs foster new lines of research which lead to better treatment options. An active continuing education program directed by UCLA faculty members provides a variety of short courses for members of the dental profession and their auxiliaries.

# School of Dentistry

A3-042 Dentistry, (310) 206-1718

The UCLA School of Dentistry, which occupies facilities in the Center for the Health Sciences, offers a D.D.S. (Doctor of Dental Surgery) degree program, a number of postdoctoral programs, and Oral Biology M.S. and Ph.D. degree programs. Articulated D.D.S. and M.S. or certificate programs are also available. This catalog provides detailed information only on the M.S. and Ph.D. programs in Oral Biology, for which admission to the School of Dentistry is not required.

## Degrees Offered

Doctor of Dental Surgery (D.D.S.)  
 Master of Science (M.S.) in  
 Oral Biology  
 Doctor of Philosophy (Ph.D.) in  
 Oral Biology

## Predental Program

The UCLA School of Dentistry offers two upper division courses for pre-dental students. Dentistry 199 and 199H are individual special studies courses for UCLA undergraduates with definitive research interests and abilities applicable to dentistry. The subject areas include oral biology, clinical research, and dental health policy. Interested students should contact the associate dean of research at (310) 825-6401 to obtain the names and areas of interest of participating School of Dentistry faculty.

Also refer to Chapter 5 for details on the three-year pre-dental curriculum offered by the College of Letters and Science.

## Upper Division Courses

**199. Individual Special Studies (2 to 8 units).** Prerequisite: consent of department. Studies in dentistry and related subject areas appropriate for the training of particular students, with required reading assignments or laboratory work leading to a final oral or written examination. P/NP or letter grading.

Mr. Clark

**199H. Individual Special Studies (Honors) (2 to 8 units).** Prerequisite: consent of department. Studies in dentistry and related subject areas appropriate for the training of particular students, with required paper submitted at end of course in addition to final examination (paper to be of publication quality as judged by course mentor). P/NP or letter grading.

Mr. Clark

## D.D.S. Degree Program

The UCLA dental curriculum leading to the degree of Doctor of Dental Surgery (D.D.S.) is based on the quarter system. The course of study usually takes four academic years of approximately nine months each, with three required Summer Quarters between the first/second, second/third, and third/fourth years. The curriculum is designed to provide students with clinical competence and broad experience in all phases of clinical dentistry within the four years.

The dental curriculum consists of three principal areas: basic health sciences courses, didactic dental courses, and clinical experience. The first two years of the curriculum are chiefly devoted to didactic, laboratory, and general clinical coursework. The final two years emphasize training and instruction in the clinical fields, including endodontics, fixed prosthodontics, operative dentistry, oral diagnosis and treatment planning, oral radiology, oral and maxillofacial surgery, anesthesiology, orthodontics, pediatric dentistry, periodontics, and removable prosthodontics.

For further details on the D.D.S. program and a listing of the courses offered, see the *Announcement of the UCLA School of Dentistry*, available from the Office of Student Affairs and Admissions, School of Dentistry, A3-042 Dentistry, UCLA, Los Angeles, CA 90024-1762.

## Postdoctoral Programs

The School of Dentistry offers the following opportunities for postdoctoral study: a one-year general practice residency program; a one-year advanced education in general dentistry program; a one-year residency in maxillofacial prosthodontics; a four-year oral and maxillofacial surgery residency training program; a three-year combined orthodontic/pediatric dentistry program; and two-year programs in the specialties of orthodontics, pediatric dentistry, periodontics, prosthodontics, endodontics, and orofacial pain and dysfunction.

Information on these postdoctoral programs can be obtained by writing directly to Postdoctoral Programs, School of Dentistry, A3-042 Dentistry, UCLA, Los Angeles, CA 90024-1762.

## Oral Biology

63-050 Dentistry, (310) 825-1955

### Professors

George W. Bernard, D.D.S., Ph.D., *Acting Chair*  
 Charles N. Bertolami, D.D.S., D.Med.Sc.  
 Colin K. Franker, Ph.D.  
 Louis J. Goldberg, D.D.S., Ph.D.  
 Douglas Junge, Ph.D.  
 No-Hee Park, D.M.D., Ph.D.  
 John A. Yagiela, D.D.S., Ph.D.

### Associate Professors

Robert A. Lindemann, D.D.S., M.Ed., M.S.  
 Lawrence E. Wolinsky, D.D.S., Ph.D.

### Assistant Professors

Susan A. Kinder, D.M.D., M.D.S., Ph.D.  
 Kenneth T. Miyasaki, D.D.S., M.S., Ph.D.  
 Igor Spigelman, Ph.D.

### Adjunct Professor

Bernard G. Sarnat, M.D., M.S., D.D.S.

### Adjunct Associate Professor

Helen E. Gruber, Ph.D.

### Adjunct Assistant Professors

Jaime Bulkacz, D.D.S., Dr.Odont., Ph.D.  
 Christine L. Quinn, D.D.S., M.S.

## Scope and Objectives

Oral biology is that area of knowledge which deals with the development, structure, and function of the oral tissues and their interrelationships with other organ systems in normal and disease states. It is a multidisciplinary field that includes cell biology, morphology, molecular biology, biochemistry, neuroscience, immunology, microbiology, and virology. The objective of the graduate program is to provide students with a sound foundation in these areas in order to pursue an academic or research career.

## Requirements for Graduate Degrees

### Admission

Applicants must have a B.S., D.D.S., or D.M.D. degree, or the equivalent, with strong background in basic sciences, including two years of chemistry (inorganic, organic, and biological chemistry), one year of biology, and one year of physics. The Graduate Record Examination



(GRE) and the Dental Aptitude Test (DAT) are not required but may be submitted. Three letters of recommendation and a statement of purpose describing your background, work experience, interests, and career goals are required as part of the admissions packet. There is no separate application form other than that required by UCLA Graduate Application Processing. International students are considered individually after evaluation of their curriculum and training and must take an English language proficiency examination. Refer to "Proficiency in English" under "Graduate Admission" in Chapter 3 for further information. Contact the Graduate Adviser, Oral Biology Section, School of Dentistry, 63-050 Dentistry, UCLA, Los Angeles, CA 90024-1668, for more information and program brochures.

### Major Fields and Subdisciplines

Bacterial and fungal pathogenesis, biochemistry, calcified tissue metabolism and developmental biology, immunology, neuroscience, pharmacology and therapeutics, and virology.

### Course Requirements

All graduate students must take the five core courses — Oral Biology 201A-201B-201C, Biology 100A, and Biomathematics 170A. Additional course requirements are listed under each program.

### Master of Science Degree

#### Course Requirements

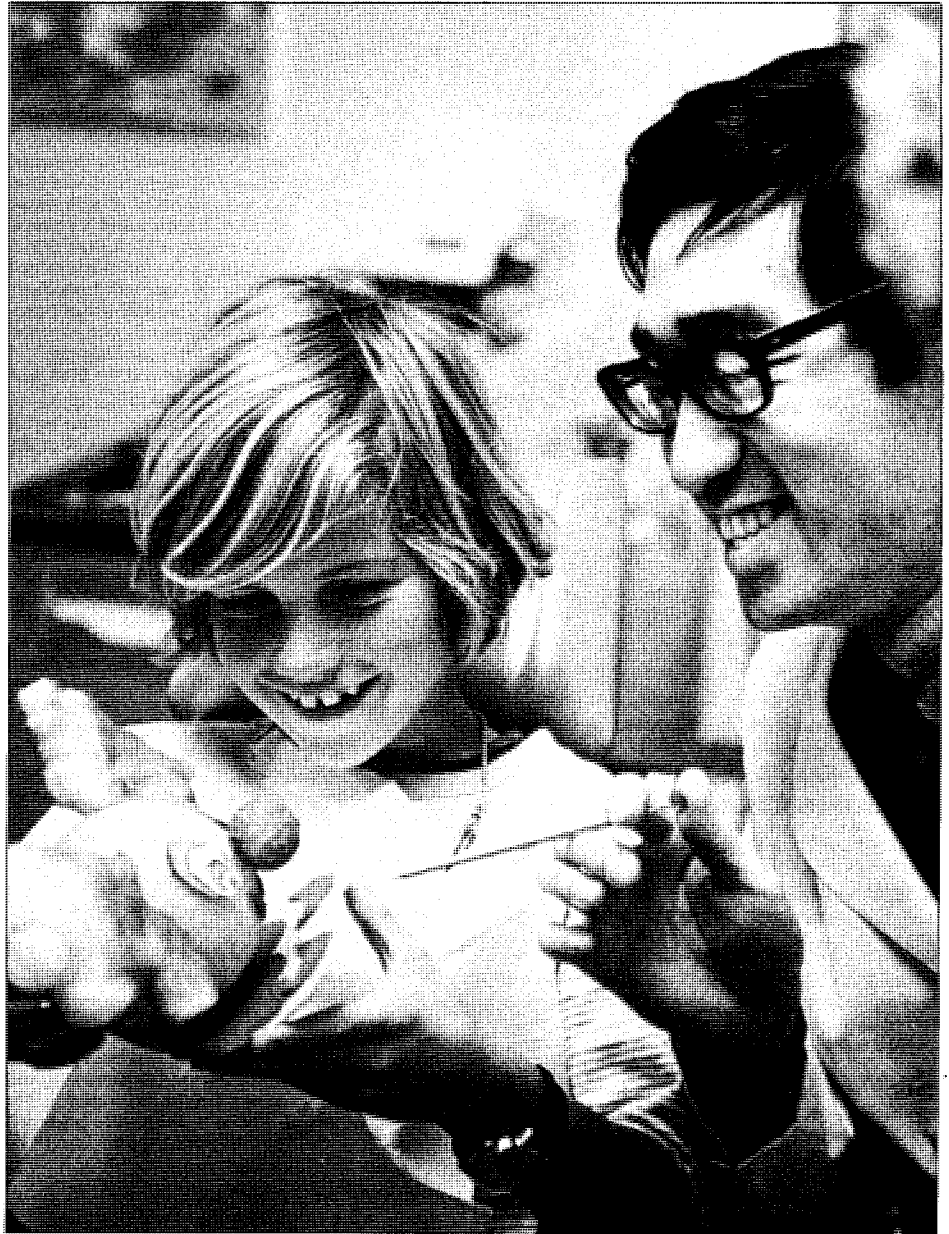
In addition to the five required core courses listed above for all students, you must complete Oral Biology 202, 260, and several elective courses.

Courses 596 and 598 are required 500-series courses. You are eligible to take two to eight units at a time on an S/U grading basis as many times as needed. A maximum of eight units of 500-series courses may be applied toward the total course requirement, of which four units may be applied toward the minimum graduate course requirement.

#### Thesis Plan

The master's thesis is intended to demonstrate your ability to design and carry out a research project and then to analyze and present the resulting data. The thesis must be prepared according to high standards of experimental design and data analysis. The subject of the thesis must be approved by the faculty adviser, who will direct the work of the thesis, and the thesis committee. At the end of your first year of study, you should prepare and send to the graduate adviser a brief description of the proposed research project.

The thesis should be prepared mainly in consultation with your faculty adviser, although other committee members are available for assistance.



#### Final Oral Examination

The final oral examination, administered by the thesis committee, is required of all candidates and is a defense of the thesis.

### Ph.D. Degree

#### Course Requirements

In addition to the five required core courses listed above for all students, you must complete additional required and elective courses (minimum of four to five courses) in your area of emphasis in your second year. Laboratory rotations and seminars are also required.

#### Teaching Experience

All doctoral students are expected to participate in teaching activities by assisting the faculty in a one-term oral biology course offered to dental students. You must participate fully in the planning and delivery of the course.

#### Qualifying Examinations

After completing the required core courses, you take a broad essay-type written examination in the major areas of oral biology and cell biology administered by the graduate training committee. After passing the written qualifying examination, you are expected to select an area of emphasis for further study.

At the end of your second year of study, you submit a proposal for the University Oral Qualifying Examination that outlines your disserta-

tion research and provides a review of the literature, a statement of aims of the research, and a description of your planned research activities. The examination is administered by your doctoral committee. After passing the oral examination, you are advanced to candidacy and may begin work on your dissertation.

### Dissertation/Final Oral Examination

You must submit a report of an original research study which meets the approval of your doctoral committee.

The final oral examination, administered by the doctoral committee, is required of all candidates and is a defense of the dissertation.

### Articulated Degree Programs

You may apply for a combined D.D.S./M.S., advanced certificate training/M.S., or advanced certificate training/Ph.D. by making simultaneous application for graduate standing in Oral Biology and for admission to the School of Dentistry and to the certificate program. To participate you must be accepted by both of the concerned units.

### Graduate Courses

**201A-201B-201C. Advanced Oral Biology (3 units each).** Prerequisite: consent of instructor:

**201A.** Ontogenesis. Evolutionary perspective of cellular development from simple molecules that were formed during the first billion years of the Earth to development of cells, tissues, and organs of invertebrates and vertebrates. Development of vertebrate feeding apparatus from a comparative anatomical and physiological point of view, followed by embryogenesis of orofacial and dental structures of humans.

Mr. Bernard and the Staff (F)

**201B.** Homeostasis in Oral Systems. Normal regulatory functions of various oral systems. Topics include immune systems, mechanisms of salivary secretion and nonspecific salivary protective mechanisms, integrated behavior of sensory and motor systems, mechanisms of deposition and resorption of bone, dentin, and enamel, ionic and hormonal influences on bone regulation.

Mr. Junge and the Staff (W)

**201C.** Pathobiology. Molecular basis for pathogenic processes in tissues of the oral cavity. Topics include microbially mediated demineralization of hard tissues, soft tissue infections, carcinogenesis, colonization of mucosal substrates by opportunists, etc.

Mr. Franker and the Staff (Sp)

**202. Principles and Methods of Research.** Discussion, two hours. Prerequisite: consent of instructor. Examination and discussion of various approaches to research methodology, from formation of hypotheses to experimental testing and analysis and interpretation of data. Library work to be studied from standpoint of obtaining background information and writing a paper. Hypotheses based on class members' interests to be critiqued and elaborated into research proposals. Research faculty to speak informally on their individual approaches to scientific investigation.

Mr. Junge and the Staff (Sp)

**M203. Oral Embryology and Histology.** (Same as Anatomy M229.) Lectures and laboratory instruction in development and histological structure of facial region and oral and peri-oral organs and tissues.

Mr. Bernard and the Staff (Sp)

**204. Mechanisms and Relief of Pain (2 units).** (Not the same as course 204 prior to Winter Quarter 1993.) Advanced treatment of neuroanatomical, neurophysiological, and biochemical bases of pain perception. Topics include classical pain theories, pain receptors and pathways, endogenous mechanisms of pain modulation, and pharmacological basis for treatment of pain disorders. Lecture series followed by student presentations of relevant literature and discussion of current advances in pain research.

Mr. Spigelman (W)

**211. Biology of the Temporomandibular Joint (2 units).** Anatomy, histology, physiology, and biomechanics of the temporomandibular joint (TMJ) and related musculature. Pain mechanisms, sensorimotor integration, and motor mechanisms in TMJ function, and current methods of TMJ imaging.

Ms. Bibb, Mr. Clark, and the Staff (W)

**226A-226B. Craniofacial Growth and Development (2 units each).** Prerequisite: strong background in histology and embryology. Students acquire, from scientific literature discussed in lecture/seminar format, advanced knowledge of relevant aspects of human biology as they apply to classic and current concepts of principles governing growth and development of craniofacial region. Students required to present seminars on assigned topics which aid their understanding and analysis of course content that has application to their specific and professional fields. In Progress grading.

Mr. Barber and the Staff (F,W)

**227. Dental Embryology and Histology (2 units).** Description and interpretation of important stages in development of the orofacial apparatus and histological features of its component tissues. Critique of scientific literature relevant to course content and analysis of current state of knowledge about selected features of the orofacial apparatus which are of significance to clinical dental specialists. (F)

**228. Dental Pharmacology and Therapeutics (2 units).** Lecture, three hours. Survey of pharmacology, with particular emphasis on how drugs interact with dentistry. General principles of drug action and drug effects on autonomic and central nervous systems.

Mr. Yagiela (F)

**260. Oral Biology Seminar (2 units).** Seminar, one hour; outside research, one hour. Research seminar to discuss faculty and student research of oral biology and related disciplines. Discussion of basic sciences related to oral biology, involving participants in important areas of investigation. S/U grading.

Mr. Junge and the Staff (F,W,Sp)

**M293. Major Concepts in Oncology.** (Same as Microbiology and Immunology M293 and Pathology M293.) Lecture, three hours. Prerequisite: graduate standing or consent of instructor. Designed for graduate students contemplating research in oncology. Topics include cancer pathophysiology, genetics, membranes, macromolecular synthesis and control, cell cycle, growth control; physical, chemical, and viral oncogenesis, epidemiology of cancer; tumor immunology; principles of cancer surgery, radiation therapy, and chemotherapy. S/U or letter grading.

Mr. Hankinson (W)

**596. Directed Individual Study or Research (2 to 8 units).** S/U grading.

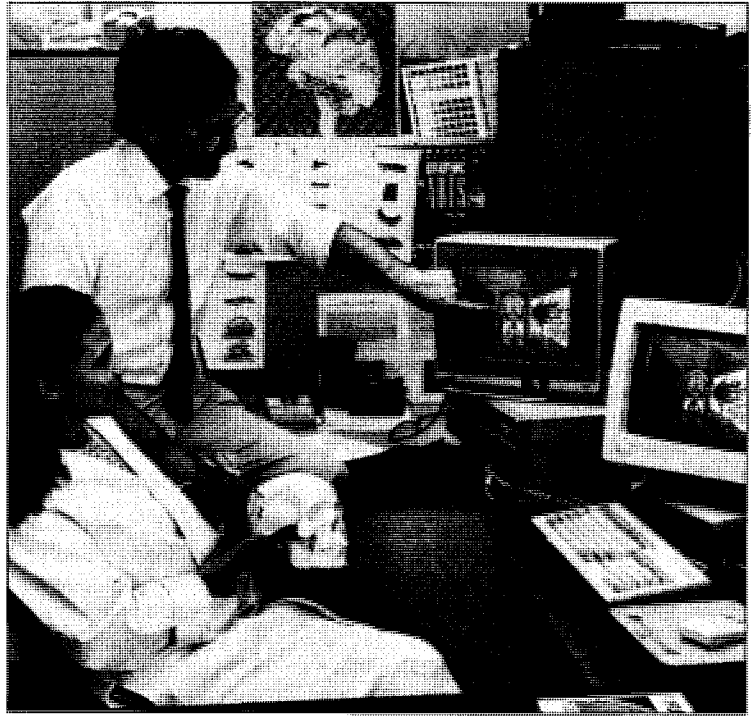
**597. Preparation for Ph.D. Qualifying Examinations (4 to 8 units).** S/U grading.

**598. Thesis Research and Preparation (2 to 8 units).** S/U grading.

**599. Research for and Preparation of Ph.D. Dissertation (4 to 8 units).** S/U grading.

# School of Medicine

Sidney A. Golub, Interim Dean  
and Provost



# 16

A modern school of medicine exists in many minds and in many places. It includes many more disciplines than all those available to such physicians as Copernicus and John Locke, famous for discoveries well beyond medicine then or now. UCLA School of Medicine faculty and students may be found in the Molecular Biology Institute and in the Department of Physiology, in the clinics, wards, and operating rooms of the UCLA Medical Center and Los Angeles County Harbor-UCLA Medical Center, in the Health Sciences Computer Center, in the Louise Darling Biomedical Library, and in dozens of other clinical and scientific facilities.

Regarded by many physicians and medical faculty to be among the best in the nation, UCLA's School of Medicine encompasses a wide range of clinical specialties, including neurology, obstetrics and gynecology, ophthalmology, orthopedic surgery, pediatrics, radiation oncology, and surgery. Graduate work leading to the M.S. and/or Ph.D. degrees is offered through the Graduate Division, either separately or in conjunction with the M.D. program, in 10 different disciplines.

Each department of the school is staffed by a distinguished faculty of respected researchers and practitioners. They have at their disposal some of the most technologically advanced equipment and facilities, including two of the nation's 56 hospital-based biomedical cyclotrons producing shortlived radioisotopes for biological research and diagnostic nuclear medicine procedures.

# School of Medicine

12-109 Center for the Health Sciences, (310) 825-6081

The UCLA School of Medicine offers an M.D. degree program, several allied health programs in affiliation with other hospitals and universities, and a number of postgraduate medical training programs. In addition to specialties in medicine, neurology, obstetrics and gynecology, ophthalmology, orthopedic surgery, pediatrics, radiation oncology, and surgery, which lead to the M.D. degree, a range of master's and doctoral degrees is offered through the Graduate Division.

## M.D. Degree Program

The four-year curriculum leading to the degree of Doctor of Medicine (M.D.) at UCLA is designed to develop a comprehensive scientific and humane approach to patient care that includes basic sciences, preventive medicine, diagnosis, and therapeutics. Clinical skills are taught in the context of anatomical, molecular, pathophysiological, and psychosocial factors in health, disease, and treatment.

During the first two years, which are devoted mainly to the basic sciences with only periodic, brief clinical exposure, instruction is primarily in the form of lectures, laboratory sessions, small-group problem-oriented instruction, demonstrations, and tutorials. In the last two years, instruction in patient care is given in the form of required and elective clinical clerkships at the UCLA Medical Center or at one of many affiliated hospitals.

All of the medical school departments participate in the medical curriculum leading to the M.D. degree. If you are interested in details on the M.D. curriculum and a listing of courses offered in each department, or if you wish to make application to the M.D. program, you should obtain a copy of the *Announcement of the UCLA School of Medicine* from the Office of Student Affairs, School of Medicine, 12-109 CHS, UCLA, Los Angeles, CA 90024-1720. You are also referred to Chapter 5 of this catalog for details on the four-year premedical studies program offered by the College of Letters and Science.

## Graduate Programs

Master's and/or doctoral degrees are offered through the UCLA Graduate Division in the following fields: anatomy, biological chemistry, biomathematics, biomedical physics (Department

### Graduate Degrees Offered

Anatomy and Cell Biology	M.S., C.Phil., Ph.D.
Anesthesiology (Nurse Anesthesia)	M.S.
Biological Chemistry	M.S., Ph.D.
Biomathematics	M.S., Ph.D.
Microbiology and Immunology	M.S.*, Ph.D.
Neuroscience	Ph.D.
Pathology (Experimental Pathology)	M.S., Ph.D.
Pharmacology	M.S.*, Ph.D.
Physiology	M.S.*, Ph.D.
Psychiatry and Bibehavioral Sciences	
Clinical Psychology Internship	Certificate
Radiological Sciences (Biomedical Physics)	M.S., Ph.D.

\*The department only admits applicants whose objective is the Ph.D.

of Radiological Sciences), experimental pathology, microbiology and immunology, neuroscience, nurse anesthesia, pharmacology, and physiology. Detailed information on these programs, for which admission to the School of Medicine is not required, is provided in the departmental listings which follow.

For information on the proficiency in English requirements for international graduate students, refer to "Graduate Admission" in Chapter 3.

## Additional Programs

### Articulated Degree Programs

The School of Medicine offers an articulated degree program in conjunction with the Graduate Division which allows you to earn both the M.D. and Ph.D. in seven years, depending on your course of study and research. The Ph.D. may be awarded in one of several medical science fields. For more information, contact the Medical Scientist Training Program at (310) 794-1817.

In addition, an arrangement with the School of Public Health enables you to pursue the M.P.H. degree while attending medical school. Interested students should consult the Student Affairs Office in the School of Public Health.

### Allied Health Programs

Programs in allied health include animal care technician, dental assistant, dental hygienist, dietetics technician, emergency medical technician, social work, pharmacy, respiratory thera-

pist, vocational nurse, nurse anesthetist, operating room nurse, physician's assistant, physical therapist, radiologic technologist, radiation therapy technologist, and ultrasound technologist.

Information regarding these programs may be obtained from the Office of Allied Health Programs in the UCLA Center for the Health Sciences (310-825-6711).

## Postgraduate Medical Training Programs

Postgraduate training programs, including residencies, are available at several off-campus sites in addition to those offered at the UCLA Medical Center. Programs offered at the allied institutions broaden the scope of the teaching programs by providing extensive clinical facilities, special population settings, and diverse practice modes. Information about these programs is available from the Office of Student Affairs, UCLA School of Medicine.

# Anatomy and Cell Biology

73-235 Center for the Health Sciences, (310) 825-9555

## Professors

George W. Bernard, D.D.S., Ph.D.  
Dean Bok, Ph.D. (*Dolly Green Professor of Ophthalmology; Distinguished Teaching Award), Vice Chair*  
Nicholas C. Brecha, Ph.D., *in Residence*  
Nathaniel A. Buchwald, Ph.D., *in Residence*  
Carmine D. Clemente, Ph.D.  
Edwin L. Cooper, Ph.D.  
Jean S. de Vellis, Ph.D., *in Residence*  
Ellen R. Dirksen, Ph.D.  
Jerome Engel, M.D., Ph.D.  
Roger A. Gorski, Ph.D. (*Distinguished Teaching Award*)  
Ronald M. Harper, Ph.D.  
Lawrence Kruger, Ph.D.  
Richard N. Lolley, Ph.D., *in Residence, Chair*  
John K. Lu, Ph.D.  
Paul E. Micevych, Ph.D.  
Arnold B. Scheibel, M.D.  
John D. Schlag, M.D.  
M.B. Sterman, Ph.D., *in Residence*  
Anna N. Taylor, Ph.D., *in Residence*  
Jaime R. Villablanca, M.D., *in Residence*  
Charles D. Woody, M.D., *in Residence*  
Guido A. Zampighi, D.D.S., Ph.D.

## Professors Emeriti

Emilio E. Decima, M.D.  
Earl Eldred, M.D.  
Daniel C. Pease, Ph.D.  
Charles H. Sawyer, Ph.D.  
José P. Segundo, M.D.  
Bernard Towers, M.D.  
Richard W. Young, Ph.D. (*Distinguished Teaching Award*)  
Emery G. Zimmermann, M.D., Ph.D.

## Associate Professors

Anthony M. Adinolfi, Ph.D.  
John H. Campbell, Ph.D.  
Robin S. Fisher, Ph.D., *in Residence*  
Carolyn R. Houser, Ph.D., *in Residence*

## Assistant Professors

Jorge R. Mancillas, Ph.D.  
Erik S. Schweitzer, M.D., Ph.D.

## Adjunct Professors

James F. McGinnis, Ph.D.  
Margaret N. Shouse, Ph.D.

## Adjunct and Clinical Associate Professors

Earle E. Crandall, M.D., Ph.D., F.A.C.S., *Clinical*  
Carlos A.E. Lemmi, Ph.D., *Adjunct*  
Anselmo R. Pineda, M.D., *Clinical*  
Michael J. Sanderson, Ph.D., *Adjunct*

## Adjunct Assistant Professor

Robert B. Trelease, Ph.D.

## Scope and Objectives

The Department of Anatomy and Cell Biology offers advanced training leading to the Ph.D. degree. The great majority of students graduating with a doctoral degree in anatomy and cell biology can look forward to an academic

career in medical and dental schools or research institutes and, in accord with this, the department strives to produce graduates soundly qualified both for teaching of anatomical subjects at this level and for the conduct of productive research in cell biology and neurobiology. An informational brochure may be obtained by writing to the Vice Chair, Department of Anatomy and Cell Biology, 73-235 CHS, UCLA, Los Angeles, CA 90024-1763.

## Requirements for Graduate Degrees

### Admission

Applicants must have a bachelor's degree in a physical or biological science or in a premedical curriculum. Introductory courses in zoology, one year of general and organic chemistry, and one year of college physics are required. Courses in comparative anatomy, embryology, cell biology, genetics, and elementary statistics are highly recommended.

You must submit (1) transcripts of grades for all college-level work, (2) the results of the Graduate Record Examination (GRE), including the Subject Test in Biology or in your undergraduate major, (3) at least three letters of recommendation from professors stressing your potential for successful completion of graduate studies and creative independent research, and (4) an essay describing your background, work experience, interests, and career goals. Selected applicants are asked to an interview with the graduate program committee composed of faculty members and graduate students.

### Major Fields or Subdisciplines

The major fields in which graduate research may be undertaken include (1) cell biology (including immunology), (2) molecular biology, and (3) neuroscience.

## Master of Science Degree

The M.S. degree in Anatomy and Cell Biology is awarded only under exceptional circumstances.

### Course Requirements

A total of 36 units of coursework is required, 20 of which must be in graduate-level courses. Eight units of Anatomy and Cell Biology 597 or 598 may be applied toward the total requirement, but only four units may be applied toward the minimum graduate course requirement. All M.S. candidates must take two courses selected from 104 (six units), M202 (four units), 207 (12 units), and M209A (five units); courses M203A-M203B (eight units); one departmental seminar; other courses essential to the student's program; courses in the minor field (for those under the comprehensive plan). If course 104 (six units) is selected, tutorial course 254 (two units) must be taken concurrently, making an eight-unit requirement.

## Thesis or Comprehensive Examination Plan

You may elect either the thesis or examination plan. For the thesis plan, a committee of the adviser and two department members approves the thesis proposal after all coursework is completed. All members participate in criticism and approval of the eventual thesis; there is no oral defense. Under the comprehensive examination plan, you must demonstrate in a written examination a grasp of the general principles of the required coursework, as well as an understanding of some related field that is relevant to your objectives.

## Ph.D. Degree

### Course Requirements

(1) You are required to take for credit the following courses or course combinations: Anatomy and Cell Biology 104 and 254; M202 (neuroscience students also take M220A-M220B); M204, M209A, 209C; 256 or equivalent; M270A-M270B-M270C. One of the following courses is also required: Physiology M212 or Biological Chemistry M267.

(2) Participation in at least three seminars, one of which should be in the Department of Anatomy and Cell Biology.

(3) Completion of such other courses as are essential for your research interest.

(4) Participation in a "Meet the Professor" series.

(5) Rotation through two research laboratories, one term each, with course 290 or 596 credit (two units).

### Teaching Experience

Since the anatomy profession generally imposes relatively heavy teaching obligations, students are required to gain teaching experience in at least one of the major anatomy courses.

### Qualifying Examinations

The written comprehensive examination is intra-departmental and intended to explore your ability to discuss broad questions that transcend the limitations of individual courses yet may call on information and strategies derived from them. All students must take the examination at the end of the first year. After passing this examination and spending perhaps a year in a laboratory, taking seminars, and reading in the field of research interest, you must take a University Oral Qualifying Examination before an ad hoc doctoral committee which evaluates your knowledge of the research field and ability to formulate a practicable and significant research program.

The Anatomy and Cell Biology Department may decline to admit any student to the qualifying examination if, in its judgment, the student is inadequately prepared, is not sufficiently interested in those fields of research in which the department can offer sufficient guidance, or is for other reasons not adaptable to the program.

## Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D. and are encouraged to do so.

## Final Oral Examination

After you complete the research and writing of the dissertation, you are required to give a final public seminar on your findings. You must also defend your dissertation in a final oral examination before the doctoral committee in closed session.

## Upper Division Courses

**102. Gross Anatomy of the Human Body (8 units).** Lecture, three hours; laboratory, nine hours. Prerequisites: dental or graduate student standing, consent of instructor. Systemic and topographical human anatomy, with dissection of human cadaver. Emphasis on head and neck. P/NP grading.  
Mr. Zampighi and the Staff (W)

**104. Histology and Cell Biology (6 units).** Lecture, four hours; laboratory, six hours. Prerequisite: dental student standing or consent of course chair. Required of freshman dental students. Lectures, demonstrations, and laboratories dealing with structural organization of cells, tissues, and organs at microscopic level. Nervous system included.  
Mr. Campbell and the Staff (F)

**106. Functional Neuroanatomy.** Lecture/laboratory, three two-hour sessions. Prerequisite: dental student standing or consent of instructor. Lectures, demonstrations, and laboratories dealing with structure and functional organization of nervous system.  
Mr. Harper and the Staff (Sp)

**199. Individual Special Studies (2 to 8 units).** Prerequisite: consent of instructor. Studies in anatomy and related subject areas appropriate for training of particular students, which may include reading assignments or laboratory work leading to a final oral or written report. S/U or letter grading.

## Graduate Courses

**201. Microscopic Anatomy and Cell Biology (7 units).** Lecture/laboratory, two to three three-hour sessions (16-week semester). Prerequisite: medical student standing or consent of instructor. Microscopic study of structure and function of tissues and cells, with special reference to the human body.  
Mr. Micevych and the Staff (F)

**M202. Neuroanatomy: Structure and Function of Nervous System.** (Same as Neuroscience M201.) Lecture, three hours; laboratory, three hours. Prerequisites: Biology 166 or 171 or equivalent, consent of instructor. Anatomy of central and peripheral nervous system at the cellular histological and regional systems level. Emphasis on contemporary experimental approaches to morphological study of nervous system in discussions of circuitry and neurochemical anatomy of major brain regions. Consideration of representative vertebrate and invertebrate nervous systems.  
Mr. Scheibel (F)

**M203A-M203B. Basic Neurology.** (Formerly numbered 203A-203B.) (Same as Physiology M203A-M203B.) Prerequisites: medical student standing or enrollment in qualified graduate program, consent of instructor. Runs throughout School of Medicine's second semester. Lectures, conferences, demonstrations, and laboratory procedures necessary to understand functions of nervous system. To receive credit, both courses must be taken together in same academic year. In Progress grading.  
Mr. Schlag and the Staff (W,Sp)

**M204. Cellular and Molecular Developmental Neurobiology.** (Same as Biology M280, Neuroscience M204, Physiology M204, and Psychiatry M204.) Lecture, three hours; discussion, one hour. Prerequisites: Neuroscience M201, M202, and M203, or Biological Chemistry 201A-201B, or consent of instructor. Cellular and molecular processes that regulate development of nervous systems of vertebrates and invertebrates. Topics include regional specification in early neurogenesis, generation of neuronal diversity, cell surface interactions and growth factors, neuronal and glial proliferation and migration, axonal outgrowth and guidance, synaptogenesis, trophic interaction, plasticity, regeneration, and aging.  
Mr. de Vellis and the Staff (W)

**205A-205B. Gross and Developmental Anatomy for Medical Students (5 units each).** Lecture/laboratory, three four-hour sessions (16 weeks beginning in August). Prerequisites: medical student standing, consent of department for nonanatomy majors. Gross anatomy, embryology, and radiological anatomy of the human body as taught by lectures, demonstrations, and dissection. **205A.** Limbs, Thorax, and Abdomen (first eight weeks); **205B.** Pelvis, Head, and Neck. Graduate students may take each course independently.  
Mr. Adinolfi and the Staff (F)

**207. Gross and Developmental Anatomy for Graduate Students (12 units).** Lecture/laboratory, three four-hour sessions (16-week semester). Prerequisite: consent of instructor. Gross anatomy, embryology, and radiological anatomy of the human body as taught by lectures, demonstrations, and dissection. Trunk and extremities; head and neck.  
Mr. Adinolfi and the Staff (F)

**M209A. Cell Molecular Structure and Function (5 units).** (Formerly numbered 209A.) (Same as Physiology M209A.) Lecture, four hours; discussion, one hour. Prerequisites: graduate standing, college-level biochemistry, consent of instructor. Introduction to cell biology for graduate students in basic medical sciences. Topics include membrane structure, assembly, and function; biogenesis of organelles, intercellular and intracellular signaling, immunity and gene structure, function and replication.  
Mr. Bok, Mr. Hornsher (F)

**209C. Methods in Cell Molecular Structure and Function (5 units).** Lecture, one hour; discussion, two hours; laboratory, eight hours. Prerequisites: course M209A, consent of instructor. Students gain firsthand experience in selected methods for cell and molecular neurobiology and in interpretation of data.  
Mr. Bok and the Staff (Sp)

**211. Cellular Basis of Learned Behavior (2 units).** Lecture/discussion, one two-hour session; laboratory, to be arranged. Prerequisites: microscopic anatomy, mammalian physiology. Anatomy and physiology of cerebral processes in alerting, learning, focusing attention, and memory.  
Mr. Woody (F)

**M220A-M220B. Structural Neurobiology.** (Same as Neuroscience M220A-M220B.) Lecture, two hours; interactive teaching based on assigned journal articles, one hour. Prerequisite: course M202. S/U or letter grading. **M220A.** Fine structure of nervous system elements and methods of molecular analysis. **M220B.** Advanced topics dealing with integrating structure at systems level.  
Mr. Kruger and the Staff (W,Sp)

**M221. Cellular and Molecular Neurochemistry.** (Formerly numbered M240.) (Same as Biological Chemistry M221, Neuroscience M240, Pharmacology M221, and Psychiatry M221.) Lecture, three hours; discussion, one hour. Prerequisite: biochemistry. Contemporary neurochemistry topics — metabolic specialization and compartments, metabolism and function of ion channels, structure and function of neurotransmitters. Inborn errors and molecular genetics, molecular imaging, aging, and regeneration. Receptor/effecter coupling. S/U or letter grading.  
Mr. de Vellis, Mr. Olsen (W)

**227. Cellular, Molecular, and Functional Aspects of Reproductive System (2 units).** Didactic presentations of developmental, anatomical/histological, physiological, cellular, and molecular aspects of neuroendocrine-reproductive axis.  
Mr. Gorski, Mr. Lu (Sp)

**M229. Oral Embryology and Histology.** (Same as Oral Biology M203.) Lectures and laboratory instruction in development and histological structure of facial region and oral and peri-oral organs and tissues.  
Mr. Bernard and the Staff (Sp)

**234. Seminar: Developmental Neuroendocrinology (2 units).** Prerequisite: graduate standing or consent of instructor. Psychological and physiological processes intertwine, and one important aspect of psychoneuroimmunological research is characterization of mechanisms that underlie these interactions. Examination of current literature on neuroimmune interaction from a developmental perspective. S/U or letter grading.  
Ms. Taylor (F)

**M235. Neuroactive Peptides: Molecular Biology to Function (2 units).** (Formerly numbered M246.) (Same as Medicine M235 and Neuroscience M246.) Prerequisite: consent of instructor. Presentation of current knowledge of gut and brain peptides by surveying their chemistry, anatomy, and physiology. Experimental approaches used to study biologically active peptides. Review of current information about each of the major gut and brain peptides. S/U or letter grading.  
Mr. Brecha, Ms. Sternini (Sp, odd years)

**251. Problems in Developmental and Comparative Immunology (2 units).** Prerequisite: consent of instructor. Review of current literature emphasizing early development and evolution of immune competence.  
Mr. Cooper (W)

**254. Structure and Function of Cells and Tissues (2 units).** Lecture, one hour; discussion, one hour. Prerequisites or corequisites: course 104, consent of instructor. Current topics on structural and functional aspects of microscopic anatomy; term paper required. May be repeated for credit. S/U grading.  
Mr. Campbell and the Staff (F)

**M255A-M255D. Seminars: Neural and Behavioral Endocrinology (3 units, 2 units, 3 units, 2 units).** (Same as Psychology M294A-M294D.) Lecture, three hours. Topics include hormonal biochemistry and pharmacology. Hypothalamic/hypophyseal interactions, both hormonal and neural. Structure and function of the hypothalamus. Hormonal control of reproductive and other behaviors. Sexual differentiation of brain and behavior. Stress: hormonal, behavioral, and neural aspects. Aging of reproductive behaviors and function. In Progress grading.  
Mr. Arnold (Sp, M255B, M255D),  
Mr. Micevych (W, M255A, M255C)

**256. Seminar: Cell Structure and Function (2 units).** Prerequisite: consent of instructor. Selected topics in cell biology emphasizing those areas which are of current interest. Discussions on recent literature in cell and molecular biology. S/U grading.  
(Sp)

**258. Seminar: Neuroscience (2 units).** Prerequisite: basic neurology. Topics of current interest or ongoing research projects; examination of both content and method of presentation. May be repeated for credit.  
Mr. Scheibel (F, odd years; W, even years)

**M261. Neuronal Circuit Analysis (2 units).** (Same as Neuroscience M261.) Lecture, two hours; discussion, one hour. Prerequisite: consent of instructor. Seminar with strong emphasis on specific reading assignments. Integrated view of neuronal circuit analysis at advanced level; layout and performance of a variety of networks serving cognitive or motor functions.  
Mr. Schlag (W)

**265. Evolution of Cancer (2 units).** Prerequisite: consent of instructor. Review of current literature emphasizing appearance of tumors and neoplasms in representative invertebrates, fishes, amphibians, and reptiles. Theories of cancer development from the evolutionary viewpoint.  
Mr. Cooper (W)

**M270A-M270B-M270C. Cell, Molecular, and Integrative Biology Seminars (1 unit each).** (Formerly numbered 270.) (Same as Physiology M270A-M270B-M270C.) Prerequisite: graduate standing or consent of instructor(s). Presentation of weekly seminars on current topics in cell and molecular biology by faculty members from Anatomy and Cell Biology, Physiology, and other UCLA departments, in addition to invited lecturers. S/U grading. (F,W,Sp)

**290. Tutorials in Anatomy (2 units).** Tutorial, one hour. Prerequisite: consent of instructor. Individual study with a faculty member leading to submission of a scientific document (usually a review article) on a topic of mutual interest to instructor and student. S/U grading. (F,W,Sp)

**390A-390B. Peer Review System (2 units each).** Prerequisite: advancement to candidacy in integrative or systems biology or consent of instructor. Introduction to peer review system for evaluation of research proposals. After consideration of grant review process, each student prepares abbreviated grant application which is evaluated in a mock peer review session moderated by the faculty. In Progress and S/U grading. Mr. Gorski (W,Sp, odd years)

**495A-495F. Preparation for Teaching in Anatomical Sciences (2 to 4 units each).** Prerequisites: graduate standing, consent of vice chair and instructor. Observation and practice of methods of teaching in anatomy, including preparation of material, participation in laboratory instruction, and presentation of review sessions, all with peer and faculty criticism. Gross anatomy, microscopic anatomy, and neuroanatomy subject fields included. Maximum of three 495 courses may be taken; none may be repeated. May not be applied toward degree requirements. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study or Research (2 to 12 units).**

**597. Preparation for M.S. Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 12 units).**

**598. Thesis Research for M.S. Candidates (2 to 12 units).**

**599. Dissertation Research for Ph.D. Candidates (2 to 12 units).**

## Medical History Division

### Professors

Ynez V. O'Neill, Ph.D., *in Residence*  
Mary A.B. Brazier, Sc.D., *Emerita, in Residence*  
Franklin D. Murphy, M.D., Sc.D., *Emeritus*

### Associate Professor

Robert G. Frank, Jr., Ph.D., *Division Chief*

### Lecturer

Elizabeth R. Lomax, M.D., Ph.D.

## Upper Division Courses

**107A-107B. Historical Development of Medical Sciences.** Lecture, three hours. Major contributions of medicine and medical personalities from earliest times. **107A.** Contributions of medicine and medical personalities from earliest times through 1650. **107B.** Subject in the period from 1650 through the 19th century. Illustrated lectures, class discussion, and required readings from selected texts.

Mr. Frank (Sp), Ms. O'Neill (W)

**M108A-M108B. History of Biological Sciences.** (Same as History M195F-M195G.) Lecture, three hours. **M108A.** Biological Sciences from Ancient Times to the Early 19th Century; **M108B.** Biological Sciences from the Early 19th Century to the Mid-20th Century.

Mr. Frank (F,W)

**120. Health Care in Los Angeles: Introduction to Cultural Medical Traditions.** Lecture, one hour; discussion, three hours. Exploration of health beliefs, traditions, and practices of major ethnic groups in Los Angeles area. Scholarly perspective on uses of alternative medicine to prepare students interested in health care to assist patients in clinical settings. P/NP or letter grading. Ms. O'Neill (F)

**135. Popular Beliefs and Medicine.** Lecture, three hours. Investigation of some basic health beliefs and traditions that can potentially conflict with biomedicine and exploration of educational resources necessary to prepare health care students for the clinical situation. P/NP or letter grading. Ms. O'Neill (W)

## Graduate Courses

**240A-240B. History of Medical Sciences (2 units each).** Lecture, one hour. Survey of development of scientific and medical thought from ancient times to the present. (F,W)

**246. History of Neurophysiology: Its Impact on Psychology and Medicine (2 to 4 units).** Lecture, one hour; seminar, two hours. Development of experimental neurophysiology from its scientific roots in the 17th century through recognition of the excitability of nervous system, to use of this characteristic in revealing functions of central nervous system. Discussion of interaction of neurophysiological ideas with contemporaneous philosophy and medicine. Lectures may be taken independently. Ms. Lomax, Ms. O'Neill (Sp)

**250. History of Medical Psychology (2 units).** Lecture, one hour. Examination of themes underlying modern mental health theories. Beginning with review of contemporary thinking, lectures focus on various factors shaping present concepts of mental disorders and provide a framework for understanding current issues. Ms. Lomax, Ms. O'Neill (W)

**596. Directed Individual Studies in Medical History (2 to 12 units).** Investigation of subjects in medical history selected by students with advice and direction of instructor. Individual reports and conferences.

(F,W,Sp)

## Anesthesiology

### Department:

BH-518 Center for the Health Sciences, (310) 206-8890

Nurse Anesthesia Program:  
14445 Olive View Drive, Sylmar,  
(818) 364-3277

### Professors

Joan W. Flacke, M.D., *in Residence*  
Atsuo F. Fukunaga, M.D., *in Residence*  
Joseph C. Gabel, M.D., *Executive Chair*  
Ronald L. Katz, M.D.  
Lawrence Kruger, Ph.D.  
Chingmuh Lee, M.D.  
John C. Liebeskind, Ph.D.  
Eduardo H. Rubinstein, M.D., Ph.D.  
Leonard F. Walts, M.D.  
Donald M. Wiberg, Ph.D.  
John A. Yagiela, D.D.S.

### Professors Emeriti

Gerald D. Allen, M.D.  
Verne L. Brechner, M.D.  
Mary E. Carsten, Ph.D.  
John B. Dillon, M.D.  
Werner E. Flacke, M.D.  
Richard W. Patterson, M.D.  
Stuart F. Sullivan, M.D.

### Associate Professors

Byron C. Bloor, Ph.D., *in Residence*  
Kenneth A. Conklin, M.D.  
Patricia A. Kapur, M.D.  
Jordan D. Miller, M.D.  
Stanley W. Stead, M.D.

### Assistant Professors

Victor C. Baum, M.D.  
Marie E. Csete, M.D., *in Residence*  
Nicholas A. Deutsch, M.D., *in Residence*  
Timothy D. Saye, M.D., *in Residence*  
Erin A. Sullivan, M.D., *in Residence*

### Associate Professors of Clinical Anesthesiology

Judith E. Brill, M.D.  
Wynne R. Waugaman, CRNA, Ph.D.

### Adjunct and Visiting Professors

Maurice Lippman, M.D., *Adjunct*  
Wilson C. Wilhite, Jr., M.D., *Visiting, Executive Vice Chair*

### Adjunct and Clinical Associate Professors

Richard Y. Chen, M.D., *Clinical*  
Carroll Dolan, M.D., *Clinical*  
George F. El-Khoury, M.D., *Adjunct*  
Scot D. Foster, CRNA, Ph.D., *Clinical*  
Thomas M. Grove, M.D., *Clinical*  
Robert D. Kaufman, M.D., *Adjunct*  
Donald A. Kroll, M.D., Ph.D., *Clinical*  
Marie G. Kuffner, M.D., *Clinical*  
Jill L'Armand, M.D., *Clinical*  
Tai Shion Lee, M.D., *Adjunct*  
John W. Ritter, M.D., *Clinical*  
Harvey K. Rosenbaum, M.D., *Clinical*  
Naomi Saucier, M.D., *Clinical*  
Stanley S. Schneider, M.D., *Clinical*  
Young Zin Sohn, M.D., *Adjunct*  
Elaine C. Yang, M.D., *Adjunct*  
Fahimeh Ziadourad, M.D., *Clinical*

### Clinical Assistant Professors

Corrie T.M. Anderson, M.D.  
Michelle Y.C. Braunfeld, M.D.  
Howard I. Chait, M.D.  
Joseph L. Cadranet, M.D.  
Linda S. Finander, CRNA, M.S.  
Peter J. Gesund, M.D.  
Gail S. Goldstein, M.D.  
Charles A. Griffis, CRNA, M.S.  
Dana L. Grogan, R.N., CRNA, M.S.  
Johnny R. Harrison, M.D.  
Richard B. Hoberman, M.D.  
Marshal B. Kaplan, M.D.  
Mary A. Keyes, M.D.  
Carol L. Mann, CRNA, M.S.  
Robert T. Naruse, M.D.  
Anthony M. Nyerges, M.D.  
David F. O'Donnell, M.D.  
Jeanette F. Peter, CRNA, M.Ed.  
Susheela Sangwan, M.D.  
Michael J. Sopher, M.D.  
Lynne G. Swain, CRNA, M.S.  
Barbara M. Van de Wiele, M.D.  
Ceil E. Vercellino, CRNA, M.S.

## Scope and Objectives

The Department of Anesthesiology in the School of Medicine, in conjunction with the Los

Angeles County Olive View-UCLA Medical Center, offers a program leading to the M.S. degree in Nurse Anesthesia. Administratively housed at the Olive View-UCLA Medical Center, the program trains qualified registered nurses in the specialty of anesthesiology and prepares graduates for the national certification examination for nurse anesthetists. Graduates attain a high level of clinical competence combined with an extensive body of didactic knowledge relevant to the specialty. The program is designed to lead to careers in the clinical practice of nurse anesthesiology, with the opportunity to participate in research in the area.

## Master of Science in Nurse Anesthesia

### Admission

The following admission requirements must be met:

- (1) A Bachelor of Science degree in Nursing or other appropriate undergraduate degree.
- (2) Graduation from an accredited nursing program satisfactory to the program and to the UCLA Graduate Division. You may be required to enroll in certain additional undergraduate courses prior to final consideration by the program.
- (3) Mandatory evidence of status as a registered nurse in the State of California.
- (4) Completion of a minimum of one year of experience as a graduate nurse in an acute care area of nursing, preferably an intensive care unit.
- (5) Professional and academic competence attested through three letters of recommendation.
- (6) Graduate Record Examination (GRE) General Test results submitted to the program.
- (7) Successful completion of the following undergraduate-level courses: (a) inorganic chemistry, organic chemistry, and biochemistry, (b) introductory physics, (c) biology, (d) anatomy, (e) physiology, (f) English, (g) psychology, (h) statistics, and (i) a course in methods of research (highly recommended).
- (8) A scholarship record satisfactory to the Graduate Division and the Nurse Anesthesia Program. Transcripts must be sent to both.
- (9) Preinterview with the program director or designee, observation in clinical practicum, and final interview with the admissions committee.

Approximately 10 students are selected for admission to Fall Quarter by the admissions committee which meets annually. Information regarding the program may be obtained by writing to the Nurse Anesthesia Program, Olive View-UCLA Medical Center, 14445 Olive View Drive, Sylmar, CA 91342. All applicants must apply to both the program and UCLA Graduate

Application Processing. Separate applications are required.

### Foreign Language Requirement

There is no foreign language requirement for the M.S. degree.

### Course Requirements

A total of 36 units of coursework is required, 20 of which must be in graduate-level courses. Required courses include Anesthesiology 215A, 215B, 220, 221, 223, 225, 290, 597 or 598A, 598B, Education 210B, Physiology 100, and four units from the Anesthesiology 210A, 210B, 210C sequence.

Course 598B may be repeated twice, but only four units of 500-series courses may be applied toward the graduate course requirement. Letter grading may be used in 500-series courses.

Professional courses (22 units) are required for certification eligibility and graduation: Anesthesiology 400A through 400G, 401, 402A, 402B.

### Thesis Plan

If you elect this option, your thesis committee is established during the second year of the program. The thesis proposal is written and approved during Winter or Spring Quarter of your second year. You must complete a successful public oral defense of your thesis for graduation.

### Comprehensive Examination Plan

Students electing this option must demonstrate theoretic and clinical competence in the field. This option is generally recommended for students continuing to doctoral degree study. The oral examination is general in scope and may include information from all aspects of the curriculum. A written comprehensive examination is also required for course completion. Examinations are offered quarterly.

### Other Requirements

- (1) You must complete all requirements for the Master of Science degree in a minimum of 10 terms, but no more than 12 terms, of consecutive full-time enrollment.
- (2) The program does not discriminate on any basis unless a handicap is determined by the admissions committee to preclude the safe clinical practice of anesthesia.
- (3) You must complete a minimum of 550 cases as the primary anesthetist.
- (4) You must meet all program requirements for graduation to qualify for the certification examination of the Council on Certification of Nurse Anesthetists.

## Graduate Courses

**210A. Chemistry and Physics of Nurse Anesthesia I (2 units).** Lecture, two hours; discussion, one hour. Prerequisite: consent of instructor. Study of principles of chemistry and physics as applied specifically to practice of anesthesia. Mr. Griffis (F)

**210B. Chemistry and Physics of Nurse Anesthesia II (2 units).** Lecture, two hours; discussion, one hour. Prerequisite: consent of instructor. Continuation of study of principles of chemistry and physics as applied specifically to practice of anesthesia. Mr. Griffis (F)

**210C. Chemistry and Physics of Nurse Anesthesia III (2 units).** Lecture, two hours; discussion, one hour. Prerequisite: consent of instructor. Continuation of study of chemistry and physics as related to anesthesia management, with specific emphasis on biochemistry as related to acid-base balance and theories of narcosis. Mr. Griffis (F)

**215A. Pharmacology of Nurse Anesthesia I.** Lecture, four hours; discussion, one to two hours. Introduction to basic pharmacological principles as applied to administration of anesthesia. Study of uptake and distribution, mechanism of action, fate, and toxicology as related to anesthetic agents. Ms. Gold and the Staff (F)

**215B. Pharmacology of Nurse Anesthesia II.** Lecture/discussion. Study of pharmacology of adjunct drugs influencing anesthesia administration, including their uptake and distribution, mechanism of action, fate, biotransformation, and toxicology. Ms. Gold and the Staff (W)

**220. Respiratory Anatomy and Physiology for Nurse Anesthetists (2 units).** Lecture, two hours; discussion, one hour. Prerequisite: consent of instructor. Study of structure and function of respiratory system, with emphasis on anatomy and physiology at cellular level. Ms. Mann (W)

**221. Cardiovascular Anatomy and Physiology for Nurse Anesthetists (2 units).** Lecture, two hours; discussion, one hour. Prerequisite: consent of instructor. Integrated study of anatomy and physiology of C-V system as related to management of anesthesia administration. Ms. Grogan (W)

**M222. Biological Control Systems.** (Same as Electrical Engineering M243.) Prerequisite: Electrical Engineering 141 or equivalent. Introduction to application of control theory to modeling and analysis of biological control systems, such as respiratory system, cardiovascular system, and neuromuscular system. Emphasis on solving problems of current interest in biomedicine. Mr. Wiberg

**223. Anatomy and Physiology of Endocrine and Excretory Systems for Nurse Anesthetists (2 units).** Lecture, two hours; discussion, one hour. Prerequisite: consent of instructor. Integrated study of endocrine and excretory systems as related to management of anesthesia administration. Mr. Foster (Sp)

**225. Anatomy and Physiology of Nervous System for Nurse Anesthetists (2 units).** Lecture, two hours; discussion, one to two hours. Prerequisite: consent of instructor. Integrated study of anatomy and physiology of nervous system as related to management of anesthesia administration. Ms. Waugaman (W)

**290. Anesthesia Seminar for Nurse Anesthetists (2 units).** Discussion, two to three hours. Discussion of research methods, basic statistics, and critical scientific paper analyses in relation to anesthesia research and practice. Ms. Waugaman (F)

**400A. Basic Clinical Anesthesia for Nurse Anesthetists I (2 units).** Lecture, three hours; laboratory, 30 hours. Prerequisites: courses 402A, 402B. Correlation of techniques of anesthesia administration with basic science knowledge as applied in the clinical area with supervised practice. S/U grading. Ms. Vercellino (Sp)

**400B. Basic Clinical Anesthesia for Nurse Anesthetists II (2 units).** Lecture, two hours; laboratory, 30 hours. Prerequisite: course 400A. Continuation of practice of techniques of anesthesia administration as applied in the clinical area with supervised practice. S/U grading. Ms. Vercellino (F)



## Biological Chemistry

33-257 Center for the Health Sciences, (310) 825-6545

### Professors

Robert J. DeLange, Ph.D.  
Edward M.F. De Robertis, M.D., Ph.D. (*Norman F. Sprague Professor of Molecular Oncology*)  
John Edmond, Ph.D.  
Peter A. Edwards, Ph.D.  
Armand J. Fulco, Ph.D.  
Dohn G. Glitz, Ph.D., *Vice Chair*  
Harvey R. Herschman, Ph.D.  
Bruce D. Howard, M.D.  
Kevin McEntee, Ph.D.  
David I. Meyer, Ph.D.  
Elizabeth F. Neufeld, Ph.D., *Chair*  
Leonard H. Rome, Ph.D., *Vice Chair*  
David S. Sigman, Ph.D.  
William T. Wickner, M.D.

### Professors Emeriti

Roslyn B. Alfin-Slater, Ph.D.  
Samuel Eiduson, Ph.D.  
Robert M. Fink, Ph.D.  
Isaac M. Harary, Ph.D.  
John G. Pierce, Ph.D.  
George J. Popjak, M.D., D.Sc.  
Sidney Roberts, Ph.D.  
Emil L. Smith, Ph.D.  
Marian E. Swendseid, Ph.D.  
Irving Zabin, Ph.D.  
Stephen Zamenhof, Ph.D.

### Associate Professors

Judith C. Gasson, Ph.D., *in Residence*  
Reid C. Johnson, Ph.D.  
Patrice J. Zamenhof, Ph.D.  
S. Larry Zipursky, Ph.D.

### Assistant Professors

Michael F. Carey, Ph.D.  
John J. Colicelli, Ph.D., *in Residence*  
Gregory S. Payne, Ph.D.  
Alexander van der Blik, Ph.D.  
Geraldine A. Weinmaster, Ph.D.

### Instructor

Felice D. Kurtzman, M.P.H.

## Scope and Objectives

The biological chemistry graduate program prepares students for careers as independent research scientists and scholars. Laboratory research is the central element. Biological chemistry has grown to include studies of cellular, molecular, and developmental biology, molecular genetics and genetic engineering, and many aspects of the health sciences. The research activities of the department include these areas as well as the "classic" topics of metabolism, enzymology, and biomolecular structure. Courses and seminar programs are designed to provide students with the necessary background and approach to encourage their continuing growth in these rapidly changing areas of science.

Interaction with other graduate programs provides access to scientists in a variety of related disciplines. Through its primary affiliation with

the School of Medicine, the department is also involved in the basic education of students who will be physicians, dentists, and other health professionals. Many of these students become involved in laboratory research in the department. In part because of this breadth of experience students find careers in many aspects of basic and applied scientific research and education. The department emphasizes study for the Ph.D., but candidates for the M.S. degree may be accepted under special circumstances.

## Requirements for Graduate Degrees

### Admission

In addition to the University's minimum requirements, which include a bachelor's degree (preferably in chemistry or a biological science), students should normally have completed the following: general chemistry, quantitative chemistry, organic chemistry (with laboratory), general physics, mathematics through calculus, and general biology (or bacteriology, botany, zoology, biochemistry, or molecular biology). More advanced courses in these areas are also recommended where possible.

You are expected to take the Graduate Record Examination (GRE) General Test, preferably in October or before, but no later than December of the year prior to expected admission. It is strongly recommended that you also take the GRE Subject Test in either Biology, Chemistry, or Biochemistry. In exceptional circumstances, the GRE test requirements may be waived by the departmental graduate admissions committee. If your native language is other than English, you are expected to take an appropriate examination which tests proficiency in English (e.g., TOEFL) prior to the time of application to this department.

There is no separate application form required for admission to the department, but at least three letters of recommendation are required. Have them sent directly to the Graduate Information Office at the address below.

Departmental brochures and information may be obtained by writing to the Graduate Information Office, Department of Biological Chemistry, 33-257 CHS, UCLA, Los Angeles, CA 90024-1737.

### Course Requirements

All graduate students must take the three core courses (Biological Chemistry M248 or M255, CM253, and M267) unless excused by the graduate adviser. (See additional course requirements under each degree program.)

## Master of Science Degree

### Course Requirements

In addition to the core course requirements described above for all students, elective courses

**400C. Basic Clinical Anesthesia for Nurse Anesthetists III (2 units).** Lecture, two hours; laboratory, 30 hours. Prerequisite: course 400B. Continuation of techniques of anesthesia administration as applied in the clinical area with supervised practice. S/U grading. Ms. Vercellino (W)

**400D. Clinical Anesthesia for Nurse Anesthetists IV (2 units).** Lecture, two hours; laboratory, 30 hours. Prerequisite: course 400C. Practice of refinements of anesthesia techniques, with emphasis on specialized areas of anesthesia administration in supervised practice. S/U grading. Ms. Vercellino (W)

**400E. Clinical Anesthesia for Nurse Anesthetists V (2 units).** Lecture, two hours; laboratory, 30 hours. Prerequisite: course 400D. Practice of refinements of anesthesia techniques, with emphasis on specialized areas of anesthesia administration in supervised practice. S/U grading. Ms. Vercellino (Sp)

**400F. Clinical Anesthesia for Nurse Anesthetists VI (2 units).** Lecture, two hours; laboratory, 30 hours. Prerequisite: course 400E. Practice of refinements of anesthesia techniques, with emphasis on specialized areas of anesthesia administration in supervised practice. S/U grading. Ms. Vercellino (Sp)

**400G. Clinical Anesthesia for Nurse Anesthetists VII (2 units).** Lecture, two hours; laboratory, 30 hours. Prerequisite: course 400F. Practice of refinements of anesthesia techniques, with emphasis on specialized areas of anesthesia administration in supervised practice. S/U grading. Ms. Vercellino (F)

**401. Legal Aspects and Bioethics (2 units).** Lecture, two hours; discussion, 30 minutes to one hour. Prerequisite: consent of department. Introduction to history, bioethics, and legal aspects of nurse anesthesia. Exploration of psychology related to the patient undergoing surgery and anesthesia. Ms. Waugaman (W)

**402A. Fundamentals of Anesthesia Practice for Nurse Anesthetists.** Lecture, four hours; discussion, one to two hours. Prerequisite: consent of instructor. Introduction to basic principles of anesthesia administration, including preanesthetic assessment, physical examination, techniques and procedures, and anesthesia for specialized techniques and surgery. Mr. Foster (F)

**402B. Fundamentals of Anesthesia Practice for Nurse Anesthetists (2 units).** Lecture, two hours; discussion, one hour. Prerequisite: consent of instructor. Continuation of techniques and procedures, and anesthesia for specialized techniques and surgery. Mr. Foster (W)

**597. Preparation for M.S. Comprehensive Examination (2 units).** Prerequisite: consent of instructor. Opportunity to pursue comprehensive study in anesthesiology and related areas on individual basis, with opportunity for discussion of material with instructor. S/U grading. Mr. Foster, Ms. Waugaman (Sp)

**598A. Research in Anesthesia I (2 units).** Prerequisite: consent of instructor. Opportunity to pursue anesthesia research outlets for thesis preparation. Independent research of quality suitable for publication required. May be selected instead of oral comprehensive examination for completion of M.S. program. S/U grading. Mr. Foster, Ms. Waugaman (Sp)

**598B. Research in Anesthesia II (2 units).** Prerequisite: consent of instructor. Opportunity to pursue anesthesia research outlets for thesis preparation. Independent research of quality suitable for publication required. May be selected instead of oral comprehensive examination for completion of M.S. program. May be repeated twice for credit. S/U grading. Mr. Foster, Ms. Waugaman (F,W)

must be taken to complete the total of nine courses (36 units) required for the degree.

No more than two courses (eight units) in the 500 series may be applied toward the total course requirement, and only one (four units) of the two courses may be applied toward the minimum graduate course requirement (20 units) for the degree.

With consent of the graduate adviser, Biological Chemistry 596, 597, and 598 may be taken if they are appropriate to your program. Course 596 is graded on an S/U or letter basis; 597 and 598 are graded S/U only.

### Comprehensive Examination Plan

In general, the department prefers students to enter directly into the Ph.D. program, but if you enter the master's program, the comprehensive examination plan is preferred. Only in exceptional situations is a student approved for the thesis plan. In either plan you must pass the departmental written examination after completing the course requirements. This examination is formulated by the departmental graduate student guidance committee from questions submitted by the various faculty members, who also evaluate your answers to the questions. The committee evaluates your overall performance on the examination. Only course requirements and the written examination are needed to complete the comprehensive examination plan.

### Thesis Plan

In addition to coursework, a written thesis is required. A thesis committee helps you plan the thesis research, determines the acceptability of the thesis, administers a final examination (if deemed appropriate), and recommends appropriate action on the granting of the degree. In the event of an unacceptable thesis or performance on the final examination (if one is given), the thesis committee determines if it is appropriate for additional time to be granted to rewrite the thesis or to be reexamined.

### Ph.D. Degree

#### Admission

Students are not required to obtain a master's degree prior to admission into the doctoral program and do not usually obtain a master's degree as part of the normal progress toward the Ph.D.

#### Course Requirements

In addition to the general course requirements listed above, students in the Ph.D. program are expected to complete:

(1) Biological Chemistry 220A-220B-220C (each term during the first year). You must arrange for at least two rotations in the laboratories of different faculty members to help in the selection of a research adviser.

(2) A total of six units of elective courses in addition to the core courses described above.

One of the courses must be a scientific language/instrumentation course (e.g., computer language, statistics, electron microscopy). Elective courses may be selected from those offered by any department.

(3) Courses 596, 597, and/or 599 during terms in which research (596, 599) or study for written or oral examinations (597) is part of your program. Course 599 is for students who have passed their oral examinations; course 596 is for those who have not.

### Teaching Experience

All students in the doctoral program are expected to participate in teaching activities by assisting the faculty in a laboratory for medical students (usually one day a week for one term during the second year).

### Qualifying Examinations

The departmental written examination consists of writing two research proposals, one covering your thesis project and one covering a hypothetical proposal unrelated to your thesis project. The University Oral Qualifying Examination, which must be passed before you can be advanced to candidacy, consists of the presentation and defense of the two written proposals. The doctoral committee determines whether you pass both examinations and whether reexamination is allowed in case of failure. The examinations may be repeated only once. It is expected that both examinations will be completed by the beginning of your third year of graduate work.

### Final Oral Examination

The doctoral committee may elect to waive the final oral examination.

### Articulated Degree Program

Students may apply for the M.D./Ph.D. program by making simultaneous application for graduate standing in this department and for admission to the School of Medicine. Acceptance by both of the concerned units is necessary. Certain changes in the requirements (e.g., fewer required courses) allow some savings in time compared to separate M.D. and Ph.D. degrees.

### Upper Division Courses

**CM153G. Macromolecular Structure (6 units).** (Same as Chemistry CM153G.) Lecture, five hours. Prerequisites: Chemistry 110A, 153A, 153B, 153C, 156, or equivalent. Chemical and physical properties of proteins and nucleic acids. Structure, cloning, and analysis of DNA; biosynthesis and processing of RNA; biosynthesis, purification, structure, and analysis of proteins; correlation of structure and biological properties. Concurrently scheduled with course CM253. Mr. Eisenberg, Mr. Glitz (F)

**195. Current Research in Biological Chemistry (2 units).** Prerequisites: upper division standing, consent of instructor (based on personal interview). Readings, discussion of current research results, and presentation of recent literature on topics under investigation within a research group in biological chemistry. P/NP or letter grading. (F,W,Sp)

**199. Directed Individual Research Studies in Biological Chemistry (2 to 8 units).** Laboratory, four to 20 hours. Prerequisites: upper division standing, consent of instructor (based on written research proposal and consultation with instructor). Individual research projects carried out under direction of a faculty member. P/NP or letter grading. (F,W,Sp)

### Graduate Courses

**201A-201B. Biological Chemistry (5 units each).** (Formerly numbered 201, 202, 203.) Prerequisites: organic chemistry; consent of instructor required for nonmedical students. Primarily for first-year medical students and runs throughout School of Medicine's second semester. General biochemistry with emphasis on mammalian systems. Structure, function, and metabolism of major cellular components. To receive credit, both courses must be taken together in same academic year. In Progress grading. (W,Sp)

**204. Biological Chemistry Laboratory (3 units).** Discussion, one hour; laboratory, six hours. Prerequisite: consent of instructor required for nonmedical students. Experiments illustrating techniques and procedures in medically related biochemistry; analysis of experimental results. S/U or letter grading.

Mr. Edmond, Mr. Rome, and the Staff (Sp, eight weeks)

**205. Biological Chemistry and Nutrition Lecture (Dental Students) (6 units).** (Formerly numbered 205A-205B, 205C.) Lecture, six hours; computer laboratory. Prerequisite: dental student standing. Biochemical and genetic factors influencing normal and disease states: structure and metabolism of cellular constituents, intermediary metabolism and its regulation, endocrine and neurobiochemical mechanisms, connective tissue/mineralization. Includes computer laboratory and self-instruction on dietary assessment in dentistry. Ms. Zamenhof and the Staff (F)

**220A-220B-220C. Research Laboratory Rotations (2 to 8 units each).** Prerequisite: consent of instructor. Students arrange apprenticeships in laboratories of one or more departmental faculty members and engage in a research project under close faculty direction. Allows students to acquire in-depth laboratory experience in specific research areas and facilitates an informed decision on their part in selection of thesis/research adviser. S/U or letter grading.

Mr. Edwards, Mr. Payne, and the Staff (F, 220A; W, 220B; Sp, 220C)

**M221. Cellular and Molecular Neurochemistry.** (Formerly numbered M221A.) (Same as Anatomy M221, Neuroscience M240, Pharmacology M221, and Psychiatry M221.) Lecture, three hours; discussion, one hour. Prerequisite: biochemistry. Contemporary neurochemistry topics — metabolic specialization and compartments, metabolism and function of ion channels, structure and function of neurotransmitters. Inborn errors and molecular genetics, molecular imaging, aging, and regeneration. Receptor/effector coupling. S/U or letter grading. Mr. de Vellis, Mr. Olsen (W)

**M223. Membrane Molecular Biology (6 units).** (Same as Physiology M223.) Lecture, five hours. Prerequisites: course CM253 or consent of instructor, graduate or selected upper division undergraduate standing. Advanced course in molecular aspects of membrane physiology and biochemistry covering lipids and physical chemistry of biological membranes; membrane biogenesis and targeting of proteins to membranes; pumps, carriers, and channels; receptors and transmembrane signaling.

**M233. Principles, Practices, and Policies in Biotechnology (2 units).** (Same as Biology M233, Chemical Engineering M233, Chemistry M233, Microbiology M233, Microbiology and Immunology M233, and Radiological Sciences M233.) Prerequisite: graduate standing or consent of instructor. Presentation of technologies, regulatory practices, and policies required for product development and review of current opportunities for new technology development. Topics include fermentation processes, pilot and large-scale bioprocess technologies, scaleup strategies, industrial recombinant DNA processes, hybridomas, protein engineering, peptide mimetics and rational drug design, medical and microscopic imaging, and intellectual property issues. S/U or letter grading.

Mr. Fox, Ms. Morrison

**M248. Molecular Genetics.** (Same as Biology M248 and Microbiology M248.) Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Basic concepts in modern genetics, with examples from both eukaryotic and prokaryotic systems. Emphasis on use of genetic techniques for addressing fundamental questions in biochemistry and molecular biology. Topics include mutagenesis, mutant selection, recombination, genetic mapping, complementation, transposable elements, gene organization, genetic regulation, and molecular evolution.

Mr. Johnson and the Staff (Sp)

**251A-251B-251C. Seminars: Transcriptional Regulation (2 units each).** Prerequisite: consent of instructor. Advanced courses on mechanics of gene transcription in both eukaryotes and prokaryotes intended for students actively working or highly interested in transcription. S/U or letter grading.

Mr. Carey

**CM253. Macromolecular Structure (6 units).** (Formerly numbered M253.) (Same as Chemistry CM253.) Lecture, five hours. Prerequisites: Chemistry 110A, 153A, 153B, 153C, 156, or equivalent. Chemical and physical properties of proteins and nucleic acids. Structure, cloning, and analysis of DNA; biosynthesis and processing of RNA; biosynthesis, purification, structure, and analysis of proteins; correlation of structure and biological properties. Concurrently scheduled with course CM153G.

Mr. Glitz and the Staff (F)

**M255. Biological Catalysis.** (Same as Chemistry M255 and Pharmacology M255.) Prerequisites: Chemistry 110A and 153A, or equivalent, or consent of instructor. Reaction mechanisms in molecular biology; experimental approaches for study of enzymes, including kinetics, isotopic labeling, stereochemistry, chemical modification, and spectroscopy; design of pharmacologically active agents and artificial enzymes. Drug metabolism and interactions addressed on a mechanistic level.

Mr. Cho, Mr. Fukuto, Mr. Sigman (Sp)

**M257. Physical Chemistry of Biological Macromolecules (2 units).** (Same as Chemistry M257.) Prerequisites: Chemistry 110A and 153A, or consent of instructor. Theory of hydrodynamic, thermodynamic, and optical techniques used to study structure and function of biological macromolecules. (W)

**M263. Metabolism and Its Regulation.** (Same as Chemistry M263.) Lecture, three hours. Prerequisites: courses 201A-201B, or Chemistry 153B, 153C, or 156, and 110A, or equivalent, or consent of instructor. Thermodynamic and kinetic aspects of metabolism; regulatory properties of enzymes; metabolic regulation; consideration of comparative aspects of metabolism in relation to physiological function. (Sp)

**M264A-M264B-M264C. Molecular Basis of Atherosclerosis: Selected Topics (2 units each).** (Same as Chemistry M264A-M264B-M264C.) Prerequisite: consent of instructor. Biochemistry, morphology, and physiology of atherosclerosis. Emphasis on chemistry of lipoproteins and role of plasma lipoproteins in regulation of tissue lipid metabolism and development of atherosclerosis. Each course may be taken independently for credit.

Mr. Schumaker (F, M264A; W, M264B; Sp, M264C)

**M266A-M266B-M266C. Seminars: Molecular Embryology (2 units each).** (Same as Biology M266A-M266B-M266C.) Prerequisite: consent of instructor. Advanced course in developmental genetics and biochemistry, with emphasis on early development. Intended mostly for students actively working or highly interested in embryology. S/U grading.

Mr. De Robertis, Mr. Zipursky

**M267. Macromolecular Metabolism and Subcellular Organization (6 units).** (Same as Chemistry M267.) Lecture/discussion, five hours. Prerequisites: courses 201A-201B or Chemistry 153B and 153C, or equivalent, or consent of instructor. Recommended: course CM253. Cell cycle DNA replication and repair; structure and properties of cellular organelles; regulation of cell division; cell transformation; normal and aberrant expression of oncogenes; molecular aspects of development. Mr. McEntee and the Staff (W)

**M298. Seminar: Current Topics in Molecular Biology (2 units).** (Same as Biology M298, Chemistry M298, Microbiology M298, Microbiology and Immunology M298, and Molecular Biology M298.) Prerequisite: consent of instructor and graduate adviser of interdepartmental Molecular Biology Ph.D. Program. Each student conducts or participates in discussions on assigned topics. May be repeated for credit. (F,W,Sp)

**596. Directed Individual Study and Research (2 to 12 units).** Hours to be arranged. Prerequisite: consent of instructor. S/U or letter grading.

**597. Preparation for Examinations (2 to 4 units).** Prerequisite: consent of graduate adviser. Individual study for Ph.D. qualifying examinations or M.S. comprehensive examination. S/U grading.

**598. Preparation of M.S. Thesis.** Prerequisite: consent of graduate adviser. Preparation of research data and writing of M.S. thesis. S/U grading.

**599. Research for and Preparation of Ph.D. Dissertation (2 to 12 units).** Prerequisite: consent of graduate adviser. Preparation of research data and writing of Ph.D. dissertation. S/U grading.

## Biomathematics

AV-617 Center for the Health Sciences, (310) 825-5018

### Professors

Abdelmonem A. Afifi, Ph.D.  
Robert M. Elashoff, Ph.D.  
H.K. Huang, D.Sc.  
Robert I. Jennrich, Ph.D.  
Kenneth L. Lange, Ph.D., *Chair*  
Roderick J.A. Little, Ph.D., *Vice Chair*  
Carol M. Newton, M.D., Ph.D.  
Michael E. Phelps, Ph.D.  
Wilfrid J. Dixon, Ph.D., *Emeritus*

### Associate Professors

Karim F. Hirji, Ph.D., *in Residence*  
Elliot M. Landaw, M.D., Ph.D.

### Assistant Professor

A. James Sneyd, Ph.D.

### Lecturers

Jeffrey Gornbein, Ph.D.  
Noel Wheeler, Ph.D.

### Adjunct Professors

Janet D. Elashoff, Ph.D.  
Alan B. Forsythe, Ph.D.  
Arthur Peskoff, Ph.D.

### Adjunct Assistant Professor

Eli Engel, M.D., Ph.D.

## Scope and Objectives

As biology advances rapidly in quantitative research methods, both the need for and possibility of closely associated theoretical research increases. On numerous medical and medical science frontiers — such as genetics, molecular biology, oncology, pharmacology, neurosciences, and physiology — biomathematics is contributing both in its basic research and the development of specialized computer software to support investigation and health care. UCLA has one of the few departments in this relatively new, rapidly evolving field.

The Department of Biomathematics welcomes both undergraduate and graduate students in other majors to its courses in biomedical computing, modeling, and statistics. Premedical majors with mathematical/computer interests can receive early guidance toward an M.D./Ph.D. program in Biomathematics. The department is responsible for statistical and biomathematical training in the medical curriculum.

The department's orientation is away from abstract modeling and toward theoretical research vital to the advancement of current biomedical research frontiers. The doctoral program reflects this in requirements for advanced training in a biomedical research specialty and for the mathematical and computing skills required to contend realistically with complex phenomena encountered in biology and medicine. The art of biomathematical research is developed individually from the first year on. The master's program adapts to the various needs of researchers desiring supplemental biomathematical training, people preparing to provide methodological support to researchers in biology or medicine, or students pursuing a stepwise approach to graduate training in biomathematics.

## Requirements for Graduate Degrees

### Admission

High academic achievement in one scientific or mathematical field is required. It is not necessary to be proficient in both mathematics and biology, though some prior preparation in both fields is desirable. Both the General and Subject Tests of the Graduate Record Examination (GRE) should be taken. At least three letters of recommendation are required from faculty competent to evaluate your qualifications for pursuing graduate study and a creative research career; additional letters are welcomed and may be requested.

In addition to completing the UCLA Graduate Application Processing forms, you are required to complete a departmental application form, which should be sent directly to the department. All communications with the department, including requests for brochures and for the depart-

mental forms, should be sent to the Chair, Graduate Admissions Committee, Department of Biomathematics, AV-617 CHS, UCLA, Los Angeles, CA 90024-1766.

You are admitted to either program after you have achieved admission to the Graduate Division and have been approved by the departmental graduate admissions committee.

## Master of Science Degree

### Course Requirements

You must complete five graduate-level courses in biomathematics, three of which must be selected from Biomathematics 201, 202, 203, 204. If you successfully completed any of the five courses as an undergraduate, you may petition the department to apply them toward this requirement of specific background in biomathematics, but in accord with Academic Senate regulations they cannot be applied toward the minimum requirements stated below for the master's degree.

A minimum of nine upper division and graduate courses (36 units) taken in graduate standing is required for the degree, at least five (20 units) of which must be at the graduate level. No more than two 596 courses may be applied toward the required nine courses, and none may be applied toward the graduate course requirement.

### Thesis Plan

You generally are required to follow the comprehensive examination plan. Permission to undertake a thesis plan must be given by the departmental advisory committee, which must approve the thesis committee, as well as your plans for the thesis.

### Comprehensive Examination Plan

A written comprehensive examination administered by a faculty committee appointed by the chair, with approval of the advisory committee, covers material presented in your coursework. This is usually the written comprehensive examination for the doctoral program given during the summer, but in exceptional cases a special committee and written examination are provided.

## Ph.D. Degree

### Major Fields or Subdisciplines

Each student completes the requirements for a field of special emphasis in biology. Presently approved fields of special emphasis for which courses of study have been developed include genetics, immunology, molecular biology, neurosciences, pharmacology, and physiology. Others may be added in response to students' requests.

### Course Requirements

The following courses are required:

*Biomathematics* — 201, 202, 203, 204, and eight units from 205, 206, 207, 208A, 209.

*Mathematics* — Five graduate courses with a grade-point average of 3.6 or better from an approved list, with two substitutions possible if especially appropriate to your research field. (Consent may be given by the advising committee to count prior graduate courses for full or partial completion of this requirement.)

*Biology* — Courses required for the field of major biological emphasis.

*Independent Research* — Each student is encouraged to take at least four units of Biomathematics 596 with a member of the Biomathematics Department each year prior to taking the written comprehensive examination. As you progress, there is increasing emphasis on research and encouragement to publish. Failure to advance in capacity for independent, creative research is a primary indication for recommended withdrawal from the program.

The following courses are recommended:

*Mathematics* — By individual study or coursework, you should have strength in differential equations, probability and statistics, and real and complex analysis. Offerings in the Department of Mathematics are especially recommended.

*Statistics* — Additional training in biostatistics is highly recommended (see offerings in the School of Public Health).

*Computer Methods* — You must be a facile programmer and acquainted with numerical methods needed for your area of research. The numerical analysis sequence in the Department of Mathematics and computing courses in biomathematics are suggested.

*Biology and Biological Chemistry* — A broad background is expected, from molecular to organ-system levels. This probably will be provided in requirements for the field of major biological emphasis; supplemental coursework will be advised, if needed.

### Teaching Experience

One teaching preceptorship (Biomathematics 596) is required. You participate fully in the planning and delivery of one course in the Biomathematics Department. The emphasis is on your training in all aspects of preparing for and offering a course; this is not a service-oriented teaching assistantship.

### Qualifying Examinations

In the summer, the department offers a written comprehensive examination to test your competence in biomathematics. Full-time students must take this by the end of two academic years of study and part-time students by the end of three.

The qualifying examination in the field of major biological emphasis usually is the regular comprehensive examination for doctoral students in that field and is taken prior to the examination that advances them to candidacy. Students entering with a Ph.D. in a biological field

are exempt from the above requirements. Students with an M.D. are exempt from the required coursework; exemption from the examination may be granted by the advising committee in consultation with advisers from the specialty area.

The University Oral Qualifying Examination, administered by the doctoral committee appointed by the dean of the Graduate Division, critically probes the quality, scope, and feasibility of your proposed dissertation work. It explores the integration and strength of biomathematical, mathematical, and biological expertise in your intended area of research. You advance to candidacy after passing this examination.

### Final Oral Examination

A final oral examination is required of all candidates and is a defense of the dissertation, administered by the doctoral committee.

## Upper Division Courses

**106. Introduction to Cellular Modeling.** Lecture, four hours; computer laboratory, two hours. Prerequisites: Mathematics 32A, some computer programming, consent of instructor (undergraduates). Designed for upper division science majors and biomedical graduate students. Introduction to modeling cells and cell systems, including intracellular biochemical networks, applications to cancer research. How to develop one's own computer models using IMSL mathematics subroutines. Ms. Newton (W)

**108. Introduction to Modeling in Neurobiology.** Lecture, four hours; computer laboratory, two hours. Prerequisites: Mathematics 32A, some computer programming, consent of instructor (undergraduates). Designed for upper division science majors and biomedical graduate students. Survey of wide variety of topics in neurobiological modeling, current neuronal modeling systems. Development of skills to formulate and program one's own studies using IMSL mathematics subroutines. P/NP or letter grading. Ms. Newton (Sp)

**110. Elements of Biomathematics.** Lecture, three hours; laboratory, three hours. Prerequisite: calculus. Analysis of deterministic models. Conditions under which deterministic and probabilistic descriptions of biological phenomena are appropriate. Both approaches are applied to selected examples in physiology and biology. Mr. Engel (F)

**M153A-M153B. Introduction to Computational Statistics.** (Same as Biostatistics M153A-M153B and Statistics M153A-M153B.) Lecture, three hours; discussion, one hour. Prerequisites: Mathematics 115A, Statistics 152B. Linear and nonlinear regression analysis using package programs. Emphasis on relation between statistical theory, numerical results, and analysis of data. **M153A.** BMDP, SAS, and SPSS regression programs; general linear model theory; linear regression analysis; transforming and weighting; regression diagnostics; model building. **M153B.** Analysis of variance and covariance; nonlinear regression programs, analysis, and applications; maximum likelihood analysis; robust regression.

Mr. Jennrich (F, M153A; W, M153B)

**160. Introductory Biomathematics for Medical and Biological Research.** Lecture, four hours; discussion, 90 minutes. Elementary statistics course that focuses on statistical concepts and critiques the literature, with emphasis on clinical research. Output from statistical computer packages discussed in class, but students do not use the computer themselves. Topics include descriptive statistics, t-tests, confidence intervals, linear regression and correlation, analysis of variance, nonparametric statistics, basic experimental design, sample size determination, article interpretation. (W)

**170A. Computer-Based Introductory Biomathematics for Medical and Biological Experimenters.** Lecture, four hours; discussion, 90 minutes. Intensive elementary statistics course emphasizing design of experiments and analysis of data using statistical packages. Statistical topics similar to course 160—descriptive statistics, t-tests, confidence intervals, linear regression and correlation, analysis of variance, nonparametric statistics, basic experimental design, sample size determination—but students also shown how to use the computer and run statistical software packages. Practical aspects of data collection and cleaning. (F)

**170B. Statistical and Mathematical Modeling in Medical and Biological Research.** Lecture, four hours; discussion, 90 minutes. Second course in biomathematical methods. Topics include randomization methods, intermediate experimental design, contingency table analysis, analysis of variance, multiple linear regression, nonlinear regression, methods of classification, model checking, basic mathematical models including compartment models, and statistical computer software. Students have opportunity to design their own experiments and analyze them on the computer, and to analyze previously collected data. (Sp)

**172. Clinical Trials.** Lecture, three hours; discussion, two hours. Prerequisite: Biostatistics 100C or 100D or Statistics 152B or equivalent. Topics include steps in bringing a possible therapy to clinical use; design of studies in animals to assess antitumor response; randomization, historical controls, p-values, size of study, stratification, and points; ethics of human experimentation; informed consent; three phases of human studies; indications for various types of controls, prognostic factors, survivorship studies, design of prognostic studies; organization of a clinical trial—administration, comparability, protocols, nursing and clinical standards, data collection and management. Mr. Elashoff (W)

**190HA-190HB. Honors Research in Biomathematics.** Prerequisites: upper division standing, consent of instructor and department chair. Individual research in some aspect of biomathematics designed to acquaint students in depth with mathematical models and computer applications in biology. Must be taken for at least two terms and for a total of at least eight units. Thesis required. (F,W,Sp)

**199. Special Studies in Biomathematics (2 to 8 units).** Prerequisites: upper division standing, consent of instructor. Special studies in biomathematics, including either reading assignments or laboratory work or both, designed for proper training of students. (F,W,Sp)

## Graduate Courses

**200. Research Frontiers in Biomathematics (2 units).** Prerequisite: consent of instructor. Series of presentations by faculty members on research frontiers in biomathematics. S/U grading. (F, even years)

**201. Deterministic Models in Biology.** Prerequisite: knowledge of linear algebra and differential equations. Examination of conditions under which deterministic approaches can be employed and conditions where they may be expected to fail. Topics include compartmental analysis, enzyme kinetics, physiological control systems, and cellular/animal population models. Ms. Newton (F)

**202. Fourier Analysis in Biology.** Prerequisite: knowledge of calculus, linear algebra, and probability. Introduction to theory of Fourier transforms and Fourier series from point of view of generalized functions. Elementary applications to differential equations, quantum mechanics, image reconstruction, X-ray crystallography, branching processes, and time series. Brief review of computational techniques based on fast Fourier transform. Mr. Lange (W)

**203. Stochastic Models in Biology.** Prerequisite: Mathematics M150A or equivalent experience in probability. Mathematical description of biological relationships, with particular attention to areas where conditions for deterministic models are inadequate. Examples of stochastic models from genetics, physiology, ecology, and a variety of other biological and medical disciplines. Mr. Lange (Sp)

**204. Biomedical Data Analysis.** Prerequisite: consent of instructor. Quantity and quality of observations have been greatly affected by present-day extensive use of computers. Problem-oriented study of latest methods in statistical data analysis and use of such arising in laboratory and clinical research. Mr. Little (W)

**205. Electric Potential Problems in Membranes, Cells, and Tissues.** Prerequisite: knowledge of differential equations and electrostatics, or consent of instructor. Review of electrostatics; potential problems in rectangular, spherical, and cylindrical coordinates; modeling subthreshold electrical properties of cells; microelectrode measurements of intracellular potentials; boundary conditions for current flow across membranes; eigenfunction expansions and singular perturbation analysis of intracellular and extracellular potential distribution in spherical and cylindrical cells and syncytia; computation of potential barriers for ions traversing a membrane pore. Mr. Peskoff (Sp)

**206. Introduction to Mathematical Oncology.** Lecture, four hours; computer laboratory, two hours. Prerequisites: ordinary, partial differential equations, and one computer programming course or consent of instructor. Deterministic and stochastic modeling of cell metabolism, colony growth, and responses to radio-, chemo-, and immuno-therapeutic agents applied to carcinogenesis, therapy, emergence of resistance to therapy. Simulation, optimization methods introduced. Current literature review. S/U or letter grading. Ms. Newton (W)

**207. Models in Genetics.** (Formerly numbered 207A, 207B.) Lecture, three hours; discussion, one hour. Prerequisite: upper division probability and statistics; knowledge of basic genetics principles helpful. Topics include population genetics, genetic epidemiology, gene mapping, design of genetics experiments, DNA sequence analysis, and molecular phylogeny. Content varies from year to year. (F, odd years)

**208A. Modeling in Neurobiology for Mathematicians.** (Formerly numbered 208.) Lecture, four hours; laboratory, two hours. Prerequisites: introductory ordinary, partial differential equations, programming experience. Introduction to electrochemical bases for nerve function and mathematical and computational methods for studying this, appropriate for physicists, engineers, and mathematicians. Survey of current leading research areas and software systems. S/U or letter grading. Ms. Newton

**208B. Modeling in Neurobiology for Biologists.** (Formerly numbered 208.) Lecture, four hours; laboratory, two hours. Prerequisites: lower division calculus, some elementary programming experience. Introduction to neuronal modeling, including how to formulate models and study them with existing computer software (e.g., NODUS) or one's own simple programs that use IMSL subroutines. Survey of current leading research areas. S/U or letter grading. Ms. Newton

**209. Problems in Fluid and Electrolyte Management (2 units).** Prerequisites: biochemistry, physiology, FORTRAN equivalent. Principles of fluid and electrolyte balance and acid-base chemistry. Brief review of fluid and electrolyte metabolism and mechanisms of physiologic control, with reference to research literature. Development and demonstration of principles for management of acute imbalance, using computer-based patient simulation. Depending on each student's interests, special topics include analysis of patient data, design of parenteral and dialysate fluids, mathematical principles, patient simulation using on-line patient data, or analysis of physiologic mechanisms. Mr. DeLand (F)

**211. Advanced Topics in Differential Equation Modeling in Biology.** Prerequisite: course 201 or consent of instructor. Advanced topics in mathematical physiology, population biology, pattern formation, and biological excitable systems. Analytical and numerical approaches. Taught from research papers. S/U or letter grading. Mr. Sneyd (Sp)

**220. Kinetic and Steady State Models in Pharmacology and Physiology.** Recommended: knowledge of linear algebra, differential equations, and statistics. Designed for biologists and theoreticians. Modeling and data analysis in pharmacokinetics, enzyme kinetics, and endocrinology. Topics include compartmental and noncompartmental approaches, steady state analysis of transport and binding processes, and optimal experiment design. Mr. Landaw (Sp)

**M230. Computed Tomography: Theory and Applications.** (Same as Radiological Sciences M230.) Prerequisite: consent of instructor. Computed tomography is a three-dimensional imaging technique being widely used in radiology and is becoming an active research area in biomedicine. Basic principles of computed tomography (CT), various reconstruction algorithms, special characteristics of CT, physics in CT, and various biomedical applications. Mr. S.C. Huang (W)

**M231. Statistical Methods for Categorical Data.** (Same as Biostatistics M210.) Lecture, three hours; discussion, one hour. Prerequisites: Biostatistics 100B or 110B, Statistics 152C or equivalent. Statistical techniques for analysis of categorical data; discussion and illustration of their applications and limitations. Mr. Hirji (Sp)

**M232. Statistical Analysis of Incomplete Data.** (Same as Biostatistics M232.) Lecture, three hours; discussion, one hour. Prerequisites: Biostatistics 110C, Statistics 152C, or equivalent. Discussion of statistical analysis of incomplete data sets, with material from sample survey, econometric, biometric, psychometric, and general statistical literature. Topics include treatment of missing data in statistical packages, missing data in ANOVA and regression imputation, weighting, likelihood-based methods, and nonrandom nonresponse models. Emphasis on application of methods to applied problems, as well as on underlying theory. Mr. Little (Sp, odd years)

**M234. Applied Bayesian Inference.** (Same as Biostatistics M234.) Lecture, three hours; discussion, one hour. Prerequisites: Biostatistics 200C, M250A, Statistics 152C. Bayesian approach to statistical inference, with emphasis on biomedical applications and concepts rather than mathematical theory. Topics include large sample Bayes inference from likelihoods, noninformative and conjugate priors, empirical Bayes, Bayesian approaches to linear and nonlinear regression, model selection, Bayesian hypothesis testing, and numerical methods. S/U or letter grading. Mr. Little

**M270. Optimal Parameter Estimation and Experiment Design for Biomedical Systems.** (Same as Computer Science M296B and Medicine M270D.) Lecture, four hours; outside study, eight hours. Prerequisite: Computer Science M296A or consent of instructor. Estimation methodology and model parameter estimation algorithms for quantifying (fitting) dynamic system models to real-world data. Theory and algorithms for designing optimal experiments for developing and quantifying models, with special focus on data sampling schedule design. Exploration in PC laboratory of applications software for model building and optimal experiment design. Mr. Landaw

**M280. Statistical Computing.** (Same as Biostatistics M280 and Mathematics M280.) Lecture, three hours. Prerequisites: Mathematics 115A, Statistics 152C, or equivalent. Introduction to theory and design of statistical programs: computing methods for linear and nonlinear regression, dealing with constraints, robust estimation, and general maximum likelihood methods. Mr. Jennrich (F)

**M281. Survival Analysis.** (Same as Biostatistics M215). Lecture, three hours; discussion, one hour. Prerequisites: Biostatistics 100C, Statistics 152C, or equivalent. Statistical methods for analysis of survival data. Mr. Elashoff (F)

**596. Directed Individual Study or Research in Biomathematics (2 to 12 units).** Individual study on topics not yet covered by offerings of department. May be repeated for credit with topic change.

(F,W,Sp)

**597. Preparation for M.S. or Ph.D. Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 8 units).** Prerequisite: consent of graduate adviser. Individual study. S/U grading. (F,W,Sp)

**599. Research for and Preparation of Ph.D. Dissertation (2 to 12 units).** Prerequisite: consent of instructor. S/U grading.

## Medicine

37-120 Center for the Health Sciences, (310) 825-6275

### Chairs

Alan M. Fogelman, M.D., *Senior Chair*  
Robert K. Oye, M.D., *Vice Chair, Clinical Affairs*  
Dennis J. Stamon, M.D., *Vice Chair, Finance*  
Mary C. Territo, M.D., *Vice Chair, Academic Affairs*  
Jan H. Tillisch, M.D., *Vice Chair, Education and Administration*

### Scope and Objectives

The principal goal of the Department of Medicine is to educate students in the expert diagnosis and compassionate management of human illness. Building on the biochemical, physiological, and behavioral foundations of the preclinical experience, students are taught *information acquisition* through history taking, physical examination, and laboratory evaluation; *information synthesis* through achieving a differential diagnosis and evaluative plan; and *medical decision making* for continued evaluation and therapy. Students are encouraged and guided in developing a caring physician/patient relationship.

Instruction in the department is provided in the second, third, and fourth years of medical school, with the third and fourth years constituting a continuum of clinical experience. Students become integrated into a ward team and have significant ambulatory care experiences. They apply and extend their clinical skills, medical knowledge, and judgment in the care of patients assigned to them under the immediate supervision of house officers and attending staff.

The department offers a broad range of advanced clinical clerkships in general and subspecialty ambulatory and hospital-based internal medicine at all the major affiliated centers.

For further details on the Department of Medicine and a listing of the courses offered, see the *Announcement of the UCLA School of Medicine*.

## Upper Division Course

**199. Special Studies (2 to 8 units).** Prerequisite: consent of instructor. Individual projects carried out under direction of a faculty member. Special studies in medicine with appropriate objectives, readings, laboratory work, or other assignments designed for proper training of students. P/NP or letter grading.

## Microbiology and Immunology

43-204 Center for the Health Sciences, (310) 206-5148

### Professors

Rafi Ahmed, Ph.D. (*Virology*)  
Benjamin Bonavida, Ph.D. (*Immunology*)  
Irvin S.Y. Chen, Ph.D. (*Virology*)  
Asim Dasgupta, Ph.D. (*Virology*), *Vice Chair for Academic Affairs*  
John L. Fahey, M.D. (*Immunology*)  
Sydney M. Finegold, M.D., *in Residence (Bacteriology)*  
Sidney H. Golub, Ph.D. (*Immunology*)  
Marcus A. Horwitz, M.D. (*Bacteriology*)  
Dexter H. Howard, Ph.D. (*Mycology*)  
Michael Lovett, M.D., Ph.D. (*Bacteriology*)  
Robert L. Modlin, M.D. (*Immunology*)  
Debi P. Nayak, B.V.Sc., Ph.D. (*Virology*)  
Larry Simpson, Ph.D. (*Parasitology*)  
Jack G. Stevens, D.V.M., Ph.D. (*Virology; M. Philip Davis Professor of Microbiology and Immunology*), *Chair*  
Ronald H. Stevens, Ph.D. (*Immunology*)  
Jerrold A. Turner, M.D. (*Parasitology*)  
Randolph Wall, Ph.D. (*Immunology*)  
Felix O. Wettstein, Ph.D. (*Virology*), *Vice Chair for Administration*

### Professors Emeriti

Ruth A. Boak, M.D., Ph.D.  
James N. Miller, Ph.D. (*Distinguished Teaching Award*)  
Margret I. Sellers, Ph.D. (*Distinguished Teaching Award*)  
Henry E. Weimer, Ph.D.  
Telford H. Work, M.D., M.P.H., D.T.M.&H.  
Stephen Zamenhof, Ph.D.

### Associate Professors

Lawrence T. Feldman, Ph.D. (*Virology*)  
Mitchell Kronenberg, Ph.D. (*Immunology*)

### Assistant Professors

David A. Campbell, Ph.D. (*Parasitology*)  
Patricia J. Johnson, Ph.D. (*Parasitology*)  
Andrew H. Kaplan, M.D. (*Virology*)  
Otoniel Martinez-Maza, Ph.D. (*Immunology*)  
M. Carrie Miceli, Ph.D. (*Immunology*)  
Jeffery F. Miller, Ph.D. (*Bacteriology*)  
Olaf Schneewind, M.D. (*Bacteriology*)  
Stephen T. Smale, Ph.D. (*Immunology*)

### Lecturers

Margery L. Cook, Ph.D. (*Virology*)  
Maurice L. White, Ph.D. (*Bacteriology*)

### Adjunct Professor

Lawrence M. Souza, Ph.D. (*Biotechnology*)

### Adjunct Assistant Professor

Betty Wu-Hsieh, Ph.D. (*Immunology/Mycology*)

## Scope and Objectives

The desire to explain natural phenomena, including disease, is the basis for most students' interest in biological sciences. The Microbiology and Immunology Department in the UCLA School of Medicine is disease oriented. The emphasis is on pathogenesis of infection, malignancy, and immunological response of the host to these changes of immunological dysfunction. All tools available from molecular biology to morphological methods are applied to these problems.

Microbiology and immunology are interwoven disciplines. Microbiology has played a central role in all aspects of biological sciences, including morphogenesis, genetics, developmental biology, physiology, biochemistry, and cell biology. An understanding of microbiology is thus fundamental to biological research. Immunology, once a branch of microbiology, is now a major biological discipline and a basic component of disease-oriented microbiology.

The graduate program in microbiology and immunology is closely associated with advanced (postdoctoral) training in research, clinical and public health diagnostic work, and industrial applications. Careers in microbiology and immunology include industrial appointments and clinical laboratory supervision in both government agencies and private enterprises, and academic positions.

## Master of Science Degree

The department does not accept students whose sole objective is a master's degree.

## Ph.D. Degree

### Admission

In addition to the University minimum requirements, the following items are required:

- (1) A bachelor's degree with a major in either the biological or physical sciences.
- (2) At least a B+ in chemistry, physics, and mathematics; at least a B average in biology (upper division and prior graduate study).
- (3) Three favorable letters of recommendation.
- (4) Graduate Record Examination (GRE) General Test and Subject Test in Biology.
- (5) Acceptable statement of purpose.
- (6) An interview with members of the department graduate student committee when indicated.

For departmental brochures and/or application forms, write to the Graduate Student Office, Department of Microbiology and Immunology, 43-239 CHS, UCLA, Los Angeles, CA 90024-1747.

## Major Fields or Subdisciplines

You are expected to be competent in both microbiology and immunology. However, you must do your thesis work in one of the following divisions: immunology, medical microbiology, or virology.

## Foreign Language Requirement

There is no foreign language requirement for the degree.

## Course Requirements

(1) Microbiology and Immunology 208, M226A-M226B, M285 are required and must be completed during your first year of study.

(2) Course 596 is required. You complete at least two laboratory rotations during your first year of study.

(3) Chemistry and Biochemistry CM253 and two courses in molecular biology (Microbiology and Immunology 250, 264) are required.

(4) Additional course requirements are determined by your major field and your preceptor.

## Teaching Experience

Teaching experience is encouraged but not required.

## Qualifying Examinations

The departmental written qualifying examination is to be taken at the end of your first year of graduate study. The examination consists of written tests in all three areas of study (immunology, microbiology, and virology). You select one area as your major and the other two as your minor areas. The examination in microbiology (major or minor) covers the fields of bacteriology, and either mycology or parasitology. The examinations require factual knowledge, the ability to analyze experimental work, and the capacity to design problem-solving experiments and are graded on a pass/fail basis. Each examination may be repeated once if not passed. The makeup examination is administered no earlier than three months and no later than six months after the failure, unless specified remedial work requires a longer period for proper preparation.

You must complete the University Oral Qualifying Examination within three years (nine terms) after entering the program. Advancement to candidacy is awarded after successful completion of this examination. If inadequacies are encountered, you may be required to repeat the examination.

The topic of your research proposal must be in a different area and use a different approach from that of your thesis project and research, but within the fields of interest in the department. You must be able to explain the research and results and demonstrate general knowledge of microbiology and immunology.

## Dissertation/Final Oral Examination

The details of the dissertation requirement are supervised by your professor and doctoral committee. The dissertation must demonstrate an original and independent contribution to scientific knowledge acceptable for publication in a major scientific journal and be presented in the University-required format.

The final oral examination is optional with the doctoral committee. However, you are required to present a special seminar based on your dissertation.

## Upper Division Courses

**M185A. Immunology.** (Formerly numbered CM185.) (Same as Biology M185A and Microbiology M185A.) Lecture, three hours; discussion, one hour. Prerequisites: Biology 9, 100A, 108 or equivalent. Recommended prerequisites or corequisites: Biology 100B, Chemistry 153A, 153L. Introduction to experimental immunobiology and immunochemistry; cellular and molecular aspects of humoral and cellular immune reactions. Mr. Clark, Mr. Sercarz (F)

**199. Directed Individual Research Studies in Microbiology and Immunology (2 to 8 units).** Prerequisites: senior standing, consent of instructor (based on written research proposal). Individual research projects carried out under direction of a professor. (F,W,Sp)

## Graduate Courses

Undergraduates may enroll in some graduate courses with consent of instructor.

**201. Microbiology and Immunology (8 units).** Lecture/laboratory. Limited to medical students. Study of infectious agents of human disease, with emphasis on host/parasite relationships and immunologic phenomena in immunity and disease, including identification of bacteria, fungi, animal parasites, and viruses, and principles of prevention, treatment, and laboratory diagnosis. (F)

**202A. Fundamentals of Immunology (2 units).** Prerequisite: consent of instructor. Introduction to experimental immunobiology and immunochemistry; cellular and molecular aspects of humoral and cell-mediated immune functions. (F)

**202B. Medical Bacteriology (2 units).** Prerequisite: consent of instructor. Characteristics of bacteria rickettsiae and chlamydiae associated with diseases of humans; host/parasite interactions and immunity; identification and laboratory diagnosis; principles of prevention and treatment; introduction to microbial genetics as it pertains to pathogenicity. (F)

**202C. Medical Virology (2 units).** Prerequisite: consent of instructor. Biological properties of animal viruses; replication; methods of detection; interactions with host cells and multicellular hosts, introduction to tumor viruses. (F)

**202D. Medical Mycology and Parasitology (2 units).** Prerequisite: consent of instructor. Morphology, physiology, and pathogenicity of fungi which cause human and animal diseases. Study of morphology, biology, host/parasite relationship, public health problems, and control of protozoa, helminths, and arthropods parasitic in and on humans and animals. (F)

**208. Molecular Biology of Animal Viruses.** Lecture, three hours. Prerequisites: courses in general biochemistry and general microbiology, including virology (consent of instructor may be obtained in special cases). Recommended for advanced undergraduate students with a major in public health, biology, or microbiology and for graduate students with interest in any field of biology or chemistry. Overview of animal viruses, including viral structure, virus cell interaction, virus replication, and viral oncogenesis. Special emphasis on understanding the molecular mechanism involved in control and regulation of replication, transcription, and translation of viral genome and its complex interaction with host. Mr. Nayak (Sp)

**210. Medical Mycology (3 units).** Lecture, four hours. Prerequisite: consent of instructor. Study of morphology, physiology, and pathogenicity of fungi causing human and animal diseases. Mr. Howard (Sp)

**210L. Medical Mycology (2 units).** Laboratory, four hours. Prerequisite: consent of instructor. Required of undergraduate students. Laboratory application of principles discussed in course 210. Mr. Howard (Sp)

**M215. Interdepartmental Course: Tropical Medicine (2 units).** (Same as Medicine M215, Pathology M215, and Pediatrics M215.) Lecture, two and one-half hours. Prerequisites: basic courses in microbiology and parasitology of infectious diseases in School of Medicine or Public Health. Study of current knowledge about diseases prevalent in tropical areas of the world. Major emphasis on infectious diseases, with coverage of problems in nutrition and exotic noninfectious diseases. Syllabus supplements topics covered in classroom. S/U grading. Mr. Turner (Sp, alternate years)

**M223. Membrane Research Seminar (2 units).** (Same as Microbiology M223.) Prerequisite: consent of instructor. Critical discussions of current literature in membrane research, with emphasis on relationship between structure and function in lipid bilayers. May be repeated for credit. Ms. Wisniewski (F,W,Sp)

**M226A-M226B. Principles of Microbial Pathogenesis.** (Same as Biology M226A-M226B and Microbiology M226A-M226B.) Lecture, one hour; discussion, three hours. Prerequisites: courses 202A, 202B, 202C, and 202D, or equivalent, or consent of instructor. Lecture/discussion format designed to analyze basic pathogenesis of infections. Emphasis on molecular and cellular approaches to understand host-microbial interaction. **M226A.** Bacterial and Mycotic Infections; **M226B.** Parasitic and Viral Infections. Ms. Johnson (Sp, M226B), Mr. Miller (W, M226A)

**M233. Principles, Practices, and Policies in Biotechnology (2 units).** (Same as Biological Chemistry M233, Biology M233, Chemical Engineering M233, Chemistry M233, Microbiology M233, and Radiological Sciences M233.) Prerequisite: graduate standing or consent of instructor. Presentation of technologies, regulatory practices, and policies required for product development and review of current opportunities for new technology development. Topics include fermentation processes, pilot and large-scale bioprocess technologies, scaleup strategies, industrial recombinant DNA processes, hybridomas, protein engineering, peptide mimetics and rational drug design, medical and microscopic imaging, and intellectual property issues. S/U or letter grading. Mr. Fox, Ms. Morrison

**250. Cell and Molecular Biology.** Lectures and student seminar presentations. Review of selected current topics in molecular and cellular biology. Topics include recent experimental results on organization, expression, and regulation of genes in eukaryotic cells. S/U or letter grading. Mr. Smale (F)

**251. Selected Topics on History of Microbiology (2 units).** Lecture, one hour; discussion, one hour. Consideration of history of infectious diseases, their host/parasite relationships, etiology, pathogenesis, epidemiology, diagnosis, and immunity. S/U or letter grading. Mr. Howard (W)

**M252. Seminar: Microbial Pathogenesis (2 units).** (Same as Microbiology M252.) Prerequisite: consent of instructor. Limited to 10 students. Student presentations and critical discussion of current literature on various aspects of microbial pathogenesis. May be repeated for credit. S/U or letter grading.

Mr. Miller, Ms. Miller

**M256. Seminar: Viral Oncology (2 units).** (Same as Pathology M256.) Advanced research seminar designed to consider current developments in the field. Selection of current subjects and publications dealing with tumor viruses, oncogenesis, development, and cellular regulation.

Mr. Baluda

**M258A. Molecular Genetic Mechanisms of Immune Response (2 units).** (Same as Biology M258A and Microbiology M258A.) Lecture, two hours; discussion, two hours. Prerequisite: course 202A or M285 or Biology CM185B or consent of instructor. Reading and discussion of current research articles on immunoglobulin I and II, oncogenes of immune system, T cell antigen receptor, and loci affecting differentiation. S/U or letter grading.

Mr. Kronenberg, Mr. Wall (W, five weeks)

**M258B. Biology of B Cells: Development, Repertoire, and Activation (2 units).** (Same as Biology M258B and Microbiology M258B.) Lecture, two hours; discussion, two hours. Prerequisite: course 202A or M285 or Biology CM185B or consent of instructor. Reading and discussion of current research articles on B cell development, repertoire, and growth and differentiative regulation. S/U or letter grading.

Mr. Braun, Mr. Stevens (W, five weeks)

**M258C. T Cells (2 units).** (Same as Biology M258C and Microbiology M258C.) Lecture, two hours; discussion, two hours. Prerequisites: course 202A, Biology CM185B. Reading and discussion of current research articles on molecular and cellular aspects of T cell function, including receptors and activation pathways, memory, tolerance, and specialized subjects and their functions.

Mr. Clark (Sp, five weeks)

**M258D. Molecular Interactions in Immune Responses (2 units).** (Same as Biology M258D and Microbiology M258D.) Lecture, two hours; discussion, two hours. Prerequisite: course 202A or M285 or Biology CM185B or consent of instructor. Reading and discussion of current research articles on immunochemistry of antibodies, antigens, and complement, antigenic recognition, antibody restriction. S/U or letter grading.

Ms. Morrison (F, five weeks)

**M258E. Immunopathology: Immunology of Disease (2 units).** (Same as Biology M258E and Microbiology M258E.) Lecture, two hours; discussion, two hours. Prerequisite: course 202A or M285 or Biology CM185B or consent of instructor. Reading and discussion of current research articles on tolerance and autoimmunity, autoimmune disease models, immune complex disease, immediate hypersensitivity and its cellular basis, and natural and acquired immune deficiency disease. S/U or letter grading.

Mr. Porter (Sp, five weeks, alternate years)

**M258F. Immune Regulation (2 units).** (Same as Biology M258F and Microbiology M258F.) Lecture, two hours; discussion, two hours. Prerequisite: course 202A or M285 or Biology CM185B or consent of instructor. Reading and discussion of current research articles on idiotype networks, suppressor T cells, tolerance at T and B cell levels, and *I<sub>H</sub>* gene control. S/U or letter grading.

Mr. Sercarz (F, five weeks)

**M260. Immunology Forum (2 units).** (Same as Microbiology M260.) Prerequisite: course M185A. Broad range of current topics in immunology presented and discussed at advanced frontier level. Continuing UCLA-wide, general graduate-level seminar involving faculty, postdoctoral immunologists, and graduate students from diverse departments. S/U grading.

Mr. Kronenberg (F,W,Sp)

**M262A. Seminar: Current Topics in Immunobiology of Cancer (2 units).** (Same as Biology M293A and Microbiology M262A.) Prerequisite: consent of instructor. Review of recent literature in immunology, biology, and biochemistry of cancer, with emphasis on fundamental studies involving cell-mediated immunity, humoral response, tumor specific antigens, and new techniques. Discussion of reports on scientific meetings. May be repeated for credit. S/U grading.

Mr. Bonavida (F,W,Sp)

**M262B. Immunology of AIDS (2 units).** (Same as Biology M293B, Epidemiology M214, and Microbiology M262B.) Lecture, one hour; discussion, one hour. Prerequisites: courses 202A, 202B, 202C, 202D, M258B, M258C, or equivalent, consent of instructor. Lecture and student discussion of assigned publications. Topics include specific anti-HIV immune responses, activation of immune system by HIV, and basic mechanisms that underlie HIV-induced immunodeficiency. S/U or letter grading.

Mr. Bonavida, Ms. Giorgi (W)

**M262C. Biological Individuality and Immunity (2 units).** (Same as Biology M293C and Microbiology M262C.) Prerequisite: course M258C. Review of current literature in the field of immunogenetics, with emphasis on fundamental studies involving genetic and immunologic principles and techniques. Selected topics discussed and results interpreted; conclusions and experimental methods evaluated.

(Sp, alternate years)

**M262D. Selected Topics in Immunology (2 units).** (Same as Biology M293D and Microbiology M262D.) Prerequisite: consent of instructor. Student participation in discussions related to various topics in immunology. May be repeated for credit. S/U or letter grading.

(F,W,Sp)

**M263. Molecular and Cellular Immunology Seminar (2 units).** (Same as Microbiology M263.) Prerequisite: consent of instructor. Critical discussions of current literature in T and B cell immunology, with emphasis on molecular mechanisms.

Mr. Kronenberg, Mr. Sercarz (F,W,Sp)

**264. Molecular Microbiology and Cell Biology (2 units).** Prerequisite: consent of instructor. Discussion of selected current topics related to microbiology and cell biology, with special emphasis on understanding of basic phenomena at the molecular level. S/U grading.

Mr. Smale (F)

**270. Immunology in Disease (2 units).** Lecture, one hour; discussion, one hour. Prerequisite: basic immunology. Introduction to role of immune processes in disease for students with prior knowledge of basic immunology. Topics include immunodeficiency, immediate hypersensitivity reactions, autoimmune disease, and immune complex-mediated diseases, together with transplantation immunology, tumor immunology (re role of immunity in infection). Students prepare a 20- to 30-minute presentation on a selected topic.

Mr. Fahey (W, alternate years)

**274. Interactions of Immune System and Nervous System (2 units).** Lecture, one hour; discussion, one hour. Prerequisites: graduate or postdoctoral standing in immunology, behavioral sciences, or neurosciences, consent of instructor. Limited to 10 students. Study of existing knowledge of interrelationships between central and peripheral nervous system and immune system. Review of research on CNS effects on immune function and vice versa, as well as human and animal studies linking stress to immune changes.

Mr. Fahey, Ms. Kemeny

**M275. Biology of HIV (2 units).** (Formerly numbered 275.) (Same as Epidemiology M228.) Prerequisites: Biostatistics 100A and Epidemiology 100 or equivalent, two biology courses, consent of instructor. Overview of virologic and immunologic aspects of HIV disease for epidemiology or other health disciplines. Brief discussion of clinical manifestations and biosafety in the laboratory. S/U or letter grading.

Ms. Giorgi (Sp)

**M285. Intermediate Immunology.** (Formerly numbered M285B.) (Same as Biology CM285 and Microbiology CM285.) Lecture, three hours; discussion, one hour. Prerequisite: course M185A or equivalent. Recommended corequisite: Chemistry 153B. In-depth exploration of topics introduced in course M185A.

Mr. Aguilera, Mr. Kronenberg, Mr. Sercarz (W)

**M293. Major Concepts in Oncology.** (Same as Oral Biology M293 and Pathology M293.) Lecture, three hours. Prerequisite: graduate standing or consent of instructor. Designed for graduate students contemplating research in oncology. Topics include cancer pathophysiology, genetics, membranes, macromolecular synthesis and control, cell cycle, growth control; physical, chemical, and viral oncogenesis, epidemiology of cancer; tumor immunology; principles of cancer surgery, radiation therapy, and chemotherapy. S/U or letter grading.

Mr. Hankinson (W)

**M298. Seminar: Current Topics in Molecular Biology (2 units).** (Same as Biological Chemistry M298, Biology M298, Chemistry M298, Microbiology M298, and Molecular Biology M298.) Prerequisite: consent of instructor and graduate adviser of interdepartmental Molecular Biology Ph.D. Program. Each student conducts or participates in discussions on assigned topics. May be repeated for credit.

(F,W,Sp)

**596. Directed Individual Study or Research (2 to 8 units).** Laboratory, to be arranged. Prerequisite: consent of graduate adviser. S/U grading.

**597. Preparation for Ph.D. Qualifying Examinations (2 to 6 units).**

**599. Research for and Preparation of Ph.D. Dissertation (2 to 12 units).** Research on an original problem in the field of microbiology and immunology to be selected by graduate student with advice of adviser. Fields of study may be in bacteriology, immunology, mycology, parasitology, virology, tumor biology, or cell biology.

## Molecular Biology (Interdepartmental)

The Ph.D. degree program in Molecular Biology draws its staff members from participating departments in the health and life sciences and from the Molecular Biology Institute. For details on this interdisciplinary program, see Chapter 5 on the College of Letters and Science.

## Neurology

C-128 Reed Neurological Research Center, (310) 206-6584

### Chair

Robert C. Collins, M.D.

### Vice Chairs

John C. Mazzotta, M.D., Ph.D.  
Mark A. Goldberg, M.D., Ph.D., *in Residence*  
(Harbor-UCLA)

Wallace W. Tourtellotte, M.D., Ph.D., *in Residence*  
(Wadsworth VA)

Claude G. Wasterlain, M.D., *in Residence*  
(Sepulveda VA)



## Scope and Objectives

Neurology is the medical science dealing with the normal and diseased nervous system. Neurological disorders are often associated with significant disability, morbidity, and mortality. Their higher incidence in association with greater longevity of the population, increased awareness, improved diagnostic methods, and other factors place neurological disorders among the major medical problems today. The Department of Neurology and the Reed Neurological Research Center provide means for a coordinated basic science and clinical research approach to neurological disorders, patient care, and neurological education.

The department instructs medical students throughout the four years. Emphasis in the first year is on basic aspects of neuroanatomy, chemistry, and physiology; in the second year, neurological history taking and neurological examination of afflicted patients are stressed. The third year consists of a clerkship, and the fourth year provides electives in neurology, including an advanced clinical clerkship.

For further details on the Department of Neurology and a listing of the courses offered, see the *Announcement of the UCLA School of Medicine*.

## Upper Division Course

**199. Special Studies (2 to 8 units).** Discussion, one to two hours; laboratory, four to six hours. Prerequisite: consent of instructor. Individual projects carried out under direction of a faculty member. Special studies in neurology, with appropriate objectives, readings, laboratory work, or other assignments designed for proper training of students. Mr. Collins

## Neuroscience (Interdepartmental)

73-360 Center for the Health Sciences, (310) 825-8153

### Professors

Rafi Ahmed, Ph.D. (*Microbiology and Immunology*)  
 Arthur P. Arnold, Ph.D. (*Psychology*)  
 Thomas L. Babb, Ph.D., in Residence (*Neurology*)  
 Donald P. Becker, M.D. (*Surgery*)  
 Francisco J. Bezanilla, Ph.D. (*Physiology*)  
 Dean Bok, Ph.D. (*Anatomy and Cell Biology*)  
 Nicholas C. Brecha, Ph.D., in Residence (*Anatomy and Cell Biology*)  
 Larry L. Butcher, Ph.D. (*Psychology*)  
 Anthony T. Campagnoni, Ph.D., in Residence (*Psychiatry and Biobehavioral Sciences*)  
 Scott H. Chandler, Ph.D. (*Physiological Science*)  
 Michael H. Chase, Ph.D., in Residence (*Physiology*)  
 Carmine D. Clemente, Ph.D. (*Anatomy and Cell Biology*)  
 Robert C. Collins, M.D. (*Neurology*)  
 Jean S. de Vellis, Ph.D., in Residence (*Anatomy and Cell Biology*)  
 V. Reggie Edgerton, Ph.D. (*Physiological Science*)  
 Jerome Engel, M.D., Ph.D. (*Neurology*)

Gordon L. Fain, Ph.D. (*Ophthalmology, Physiological Science*)  
 Debora B. Farber, Ph.D., in Residence (*Ophthalmology*)  
 Jack L. Feldman, Ph.D. (*Physiological Science*)  
 Joaquin M. Fuster, M.D., in Residence (*Psychiatry and Biobehavioral Sciences*)  
 C.R. Gallistel, Ph.D. (*Psychology*)  
 Louis J. Goldberg, D.D.S., Ph.D. (*Oral Biology*)  
 Ronald M. Harper, Ph.D. (*Anatomy and Cell Biology*)  
 Vincente Honrubia, M.D. (*Surgery*)  
 Bruce D. Howard, M.D. (*Biological Chemistry*)  
 Franklin B. Krasne, Ph.D. (*Psychology*)  
 Lawrence Kruger, Ph.D. (*Anatomy and Cell Biology*)  
 Michael S. Letinsky, Ph.D. (*Physiology*)  
 Michael Steven Levine, Ph.D., in Residence (*Psychiatry and Biobehavioral Sciences*)  
 John C. Liebeskind, Ph.D. (*Psychology*)  
 Roderick J.A. Little, Ph.D. (*Biomathematics*)  
 Michael T. McGuire, M.D. (*Psychiatry and Biobehavioral Sciences*)  
 Jean E. Merrill, Ph.D. (*Neurology*)  
 Paul E. Micevych, Ph.D. (*Anatomy and Cell Biology*)  
 Peter M. Narins, Ph.D. (*Biology; Distinguished Teaching Award*)  
 Elizabeth F. Neufeld, Ph.D. (*Biological Chemistry*)  
 Donald Novin, Ph.D. (*Psychology*)  
 Richard W. Olsen, Ph.D. (*Pharmacology*)  
 William M. Pardridge, M.D. (*Medicine*)  
 Leonard H. Rome, Ph.D. (*Biological Chemistry*)  
 Arnold B. Scheibel, M.D. (*Anatomy and Cell Biology, Brain Research Institute*)  
 John D. Schlag, M.D. (*Anatomy and Cell Biology*)  
 W. Donald Shields, M.D. (*Neurology, Pediatrics*)  
 Jerome M. Siegel, Ph.D., in Residence (*Psychiatry and Biobehavioral Sciences*)  
 Judith L. Smith, Ph.D. (*Physiological Science; Distinguished Teaching Award*)  
 Allan J. Tobin, Ph.D. (*Biology*)  
 John H. Walsh, M.D. (*Medicine*)  
 Claude G. Wasterlain, M.D., in Residence (*Neurology*)  
 Charles D. Woody, M.D., in Residence (*Psychiatry and Biobehavioral Sciences*)  
 Erán Zaidel, Ph.D. (*Psychology*)  
 Edward C. Carterette, Ph.D., Emeritus (*Psychology*)  
 George Eisenman, M.D., Emeritus (*Physiology*)  
 Donald J. Jenden, Ph.D., Emeritus (*Pharmacology*)  
 José P. Segundo, M.D., Emeritus (*Anatomy and Cell Biology*)  
 Bernice M. Wenzel, Ph.D., Emerita (*Physiology*)

### Associate Professors

Keith L. Black, M.D., in Residence (*Surgery*)  
 Harry T. Chugani, M.D., in Residence (*Neurology*)  
 Robin S. Fisher, Ph.D., in Residence (*Anatomy and Cell Biology*)  
 Eric Halgren, Ph.D., in Residence (*Psychiatry and Biobehavioral Sciences*)  
 Carolyn R. Houser, Ph.D., in Residence (*Anatomy and Cell Biology*)  
 Sherrel G. Howard, Ph.D. (*Pharmacology, Psychiatry and Biobehavioral Sciences*)  
 Wendy B. Macklin, Ph.D., in Residence (*Psychiatry and Biobehavioral Sciences*)  
 Anne M. Morin, Ph.D., in Residence (*Neurology*)  
 Michael J. Raleigh, Ph.D., in Residence (*Psychiatry and Biobehavioral Sciences*)  
 Arthur W. Toga, Ph.D. (*Neurology*)  
 S. Larry Zipursky, Ph.D. (*Biological Chemistry*)

### Assistant Professors

Utpal Banerjee, Ph.D. (*Biology*)  
 Christopher Evans, Ph.D., in Residence (*Psychiatry and Biobehavioral Sciences*)  
 Kym Fauli, Ph.D., in Residence (*Psychiatry and Biobehavioral Sciences*)  
 David L. Glanzman, Ph.D. (*Physiological Science*)  
 Nigel Maidment, Ph.D., in Residence (*Psychiatry and Biobehavioral Sciences*)  
 Jorge R. Mancillas, Ph.D. (*Anatomy and Cell Biology*)  
 Diane M. Papazian, Ph.D. (*Physiology*)

Erik S. Schweitzer, M.D., Ph.D. (*Anatomy and Cell Biology*)  
 Dwayne D. Simmons, Ph.D. (*Biology*)  
 Joseph B. Watson, Ph.D. (*Psychiatry and Biobehavioral Sciences*)

### Adjunct Professor

James F. McGinnis, Ph.D. (*Anatomy and Cell Biology*)

### Adjunct Associate Professors

Robert F. Ackermann, Ph.D. (*Neurology*)  
 Catia Sternini, M.D. (*Medicine*)

### Associate Researcher

Dennis J. McGinty, Ph.D. (*Anatomy and Cell Biology*)

## Scope and Objectives

For details on the B.S. program, see Chapter 5 on the College of Letters and Science.

The goal of the interdepartmental program is to educate students for careers in neuroscience research and teaching. Students completing this program should be able to address both traditional and novel problems in neuroscience, armed with contemporary concepts and techniques. The program recognizes that neuroscience studies the structure and organization of nervous systems; intercellular and intracellular communication, including the cellular and molecular basis of neurotransmitter production and reception; development, including the molecular and cellular basis of trophic interactions; behavior; cognition; and the neurobiological and molecular bases of neurological and neuropsychiatric disorders.

## Ph.D. Degree

### Admission

All applicants must satisfy the University minimum requirements. In addition, Graduate Record Examination (GRE) scores are required. Recommended preparation includes mathematics through calculus and courses in general chemistry, organic chemistry, biochemistry, physics, basic biology, and physiology. Three letters of recommendation are required.

Information regarding the program may be obtained by writing to the Neuroscience Office, 73-360 CHS, UCLA, Los Angeles, CA 90024-1761.

### Major Fields or Subdisciplines

Molecular neuroscience, cellular neuroscience, systems neuroscience, behavioral neuroscience, clinical neuroscience.

### Course Requirements

Basic course requirements include Neuroscience M201, M202, M203, M204, M205, 210A-210B-210C, 211A-211B-211C, one biostatistics course, and three additional advanced neuroscience courses. Each first-year student must also obtain research experience in the laboratories of at least two Neuroscience faculty members.

## Teaching Experience

Teaching experience is required for the degree and is available through teaching assistantships or other means.

## Qualifying Examinations

A written qualifying examination is required following completion of the core requirements. The objective of this examination is to test your basic knowledge and ability to relate knowledge in different neuroscience areas. After passing the written qualifying examination, you and your adviser select your doctoral committee to administer the University Oral Qualifying Examination.

When you have passed the oral examination, you are advanced to candidacy and may begin work on the dissertation.

## Final Oral Examination

The final oral examination is required.

## Graduate Courses

**M201. Neuroanatomy: Structure and Function of Nervous System.** (Same as Anatomy M202.) Lecture, three hours; laboratory, three hours. Prerequisites: Biology 166 or 171 or equivalent, consent of instructor. Anatomy of central and peripheral nervous system at the cellular histological and regional systems level. Emphasis on contemporary experimental approaches to morphological study of nervous system in discussions of circuitry and neurochemical anatomy of major brain regions. Consideration of representative vertebrate and invertebrate nervous systems. Mr. Scheibel (F)

**M202. Cellular Neurophysiology.** (Formerly numbered 202.) (Same as Physiological Science M202.) Lecture, three hours; discussion, one hour. Prerequisites: Biology 166 or 171 or equivalent, Physiological Science 111A or M180A or Physics 6B or equivalent. Advanced course in cellular physiology of neurons. Action and membrane potentials, channels and channel blockers, gates, ion pumps and neuronal homeostasis, synaptic receptors, drug-receptor interactions, transmitter release, modulation by second messengers, and sensory transduction. Mr. Fain (F)

**M203. Molecular Neurobiology.** (Same as Psychiatry M203.) Lecture, three hours; discussion, one hour. Prerequisites: Biological Chemistry 201A-201B or equivalent, basic biochemistry, consent of instructor. Introduction to neurochemistry for neuroscience students. Topics include protein structure and function, lipid structure and metabolism, nucleic acids/molecular biology. Mr. Campagnoni

**M204. Cellular and Molecular Developmental Neurobiology.** (Same as Anatomy M204, Biology M280, Physiology M204, and Psychiatry M204.) Lecture, three hours; discussion, one hour. Prerequisites: courses M201, M202, and M203, or Biological Chemistry 201A-201B, or consent of instructor. Cellular and molecular processes that regulate development of nervous systems of vertebrates and invertebrates. Topics include regional specification in early neurogenesis, generation of neuronal diversity, cell surface interactions and growth factors, neuronal and glial proliferation and migration, axonal outgrowth and guidance, synaptogenesis, trophic interaction, plasticity, regeneration, and aging. Mr. de Vellis, Ms. Macklin, Mr. Zipsky (W)

**M205. Behavioral and Systems Neuroscience.** (Same as Physiological Science M205 and Psychology M205Z.) Lecture, three hours. Prerequisites: courses M201, M202, M203, and M204, or consent of instructor. Introduction to fundamentals of behavioral and systems neuroscience, with emphasis on role of behavioral analysis in understanding the functioning of nervous system and identifying anatomical circuits, cell physiological processes, and molecular mechanisms that mediate behaviorally defined functions. Mr. Gallistel

**210A-210B-210C. Introduction to Current Literature in Neuroscience (2 units each).** Critical discussion of current research literature related to topics of the five core courses in neuroscience graduate curriculum. S/U grading. **210A.** Corequisites: courses M201, M202, M203. **210B.** Corequisite: course M204. **210C.** Corequisite: course M205.

**211A-211B-211C. Evaluation of Research Literature in Neuroscience (2 units each).** Prerequisites: courses M201, M202, M203, M204, and M205, or consent of instructor. Advanced critical analysis of current research in neuroscience. S/U grading.

**215. Seminar: Neuroscience (2 units).** (Formerly numbered 233.) Topics of current importance presented for discussion. S/U grading.

**M220A-M220B. Structural Neurobiology.** (Same as Anatomy M220A-M220B.) Lecture, two hours; interactive teaching based on assigned journal articles, one hour. Prerequisite: course M201. S/U or letter grading. **M220A.** Fine structure of nervous system elements and methods of molecular analysis. **M220B.** Advanced topics dealing with integrating structure at systems level.

Mr. Kruger and the Staff (W,Sp)

**M240. Cellular and Molecular Neurochemistry.** (Formerly numbered M221A.) (Same as Anatomy M221, Biological Chemistry M221, Pharmacology M221, and Psychiatry M221.) Lecture, three hours; discussion, one hour. Prerequisite: biochemistry. Contemporary neurochemistry topics — metabolic specialization and compartments, metabolism and function of ion channels, structure and function of neurotransmitters. Inborn errors and molecular genetics, molecular imaging, aging, and regeneration. Receptor/effector coupling. S/U or letter grading. Mr. de Vellis, Mr. Olsen (W)

**M246. Neuroactive Peptides: Molecular Biology to Function (2 units).** (Formerly numbered M235.) (Same as Anatomy M235 and Medicine M235.) Prerequisite: consent of instructor. Presentation of current knowledge of gut and brain peptides by surveying their chemistry, anatomy, and physiology. Experimental approaches used to study biologically active peptides. Review of current information about each of the major gut and brain peptides. S/U or letter grading. Mr. Brecha, Ms. Sternini

**M247. Neural Control of Cardiopulmonary Function.** (Same as Physiological Science M247.) Lecture, two hours; discussion, two hours. Prerequisites: Physiological Science 111A, 111B or 133 or 142 or M180A, M180B or equivalent. Cardiorespiratory homeostasis is accomplished via central nervous system (CNS) control of respiratory and circulatory pumping systems. Focus on CNS mechanisms underlying (1) generation of respiratory rhythm, sympathetic and parasympathetic tone, (2) determination of patterns of motor outflow, and (3) responses to changes in behavioral state or afferent signals. Emphasis on critical reading of literature. Mr. Feldman

**254. Interdisciplinary Research Seminar (2 units).** Lectures and discussions on many different disciplinary approaches to knowledge of brain function in order to broaden experience of students studying in fields other than that of lecturer; new information in depth from students in fields closely related to subject discussed. S/U grading.

**M255. Functional Organization of Behavior (2 units).** (Formerly numbered M201A-M201B-M201C.) (Same as Psychiatry M255.) Prerequisite: consent of instructor. Changes in neuronal properties supporting changes in learned behavior. Different types of learning. Role of neurotransmitters and second messengers in changing ion channels of neurons to support associative learning versus long-term potentiation of neurotransmission. S/U or letter grading. Mr. Woody

**257. Structure and Function of Limbic System (2 units).** (Formerly numbered M204.) Prerequisite: consent of instructor. Current knowledge of mammalian limbic system presented by surveying studies of its developmental anatomy, intrinsic synaptic organization, synaptic chemistry, afferent and efferent circuits, and dysfunctions in memory and cognition association with limbic system function. S/U or letter grading. Mr. Babb

**M258. Functional Neuropsychology (2 units).** (Formerly numbered M216.) (Same as Psychiatry M258.) Lecture, two hours; discussion, one hour. Prerequisites: graduate standing, consent of instructor. Interdisciplinary course integrating current research publications in neuroanatomy, molecular neurobiology, synaptic neurophysiology, event-related potentials, neuropsychology of amnesia, and cognitive psychology of normal memory into a realistic model. S/U or letter grading. Mr. Scheibel

**M259. Neurobiology of Sleep (3 units).** (Formerly numbered M217.) (Same as Psychiatry M249 and Psychology M296.) Lecture, one hour; discussion, two hours. Critical review of primary research publications concerning neural basis of sleep. Discussion of neural and biochemical control of REM and NREM sleep after reviewing sleep behavior and phenomenology, including developmental and comparative aspects. Presentation of relevant clinical phenomena. S/U or letter grading. Mr. McGinty, Mr. Siegel

**M260. Neuromuscular Factors in Movement Regulation.** (Same as Physiological Science M260.) Prerequisite: Physiological Science 138 or consent of instructor. Interaction of neural and muscular factors in regulation of muscle fiber properties and importance of these properties in neural strategies of movement regulation. S/U or letter grading. Mr. Edgerton

**M261. Neuronal Circuit Analysis (2 units).** (Same as Anatomy M261.) Lecture, two hours; discussion, one hour. Prerequisite: consent of instructor. Seminar with strong emphasis on specific reading assignments. Integrated view of neuronal circuit analysis at advanced level; layout and performance of a variety of networks serving cognitive or motor functions. Mr. Schlag (W)

**M262. Neural Systems for Motor Control.** (Formerly numbered M240.) (Same as Physiological Science M240.) Prerequisite: Physiological Science C143 or consent of instructor. Advanced topics on neural mechanisms related to control of posture, locomotion, and highly skilled arm and hand movements. Emphasis on role of movement-dependent feedback at spinal segments and within sensorimotor areas of cerebral cortex, with respect to modification of motor output. Ms. Smith

**M263. Neuronal Mechanisms Controlling Rhythmic Movements.** (Formerly numbered M243.) (Same as Physiological Science M263.) Prerequisite: Physiological Science C145 or consent of instructor. Advanced topics on brainstem mechanisms responsible for controlling cyclic and stereotypic movements such as mastication and locomotion. Emphasis on cellular neurophysiology and interaction between neuronal networks. Introduction to primary literature and techniques used in these areas. Students expected to critically evaluate data and conclusions drawn. Mr. Chandler

**M265A-M265B-M265C. Seminars: Neural Control of Movement (2 to 4 units each).** (Same as Physiological Science M294A-M294B-M294C.) Prerequisite: course M247 or M262 or M263 or consent of instructor. Selected topics on neural determinants of movement behavior. Students required to present two-hour seminar.

**M266A-M266B-M266C. Seminars: Cellular Neuroscience (2 to 4 units each).** (Same as Physiological Science M295A-M295B-M295C.) Prerequisite: course M202 or consent of instructor. Selected topics in sensory transduction, cellular integration, synaptic processing, central nervous system function, and learning. Students required to present two-hour seminar.

Mr. Fain, Mr. Feldman, Mr. Glanzman

**271. Neurobiology of Disease (2 units).** (Formerly numbered 200A-200B-200C.) Analysis of clinical neurological and psychiatric disorders from perspective of basic neuroscience. Mr. Collins

**M273. Neural Basis of Memory.** (Same as Psychiatry M270.) Lecture, two hours; discussion, one hour. Anatomical, physiological, and neurological data integrated into models for how behavioral phenomena of memory arise. Discussion of invertebrate memory, cortical conditioning, hippocampus and declarative memory, and frontal lobes and primary memory.

Mr. Woody

**274. Computational Neuroscience.** Lecture, 90 minutes; discussion, 90 minutes. Prerequisites: courses M201, M202. Systematic introduction to computational neuroscience and hands-on experience in neural simulations. Computational models at synaptic, neuronal, and network levels. Sensory, motor, memory, and attentional systems and some higher cognitive functions, including language and consciousness. S/U or letter grading. Mr. Nenov

**275. Advanced Techniques in Neurobiology (2 units).** Lecture, one hour; laboratory, one hour. Prerequisites: basic biology and chemistry. Designed to provide introduction and, when possible, practical demonstration of a number of techniques used in neurochemical research, with emphasis on techniques used for identification, measurement, and visualization of compounds thought to be important as mediators of intercellular communication in central nervous system. S/U grading.

Mr. Evans, Mr. Faull, Mr. Maidment

**596. Directed Individual Study or Research (2 to 12 units).** Prerequisite: consent of instructor.

Mr. Tobin

**597. Preparation for Ph.D. Qualifying Examinations (2 to 12 units).** Prerequisite: consent of instructor.

Mr. Tobin

**599. Dissertation Research for Ph.D. Candidates (4 to 12 units).** Designed for students requiring special instruction or time to work on dissertation.

Mr. Tobin

## Obstetrics and Gynecology

27-117A Center for the Health Sciences, (310) 206-2056

### Chairs

Roy M. Pitkin, M.D., *Executive Chair*  
Jonathan S. Berek, M.D., *Vice Chair, UCLA Medical Center*

Charles R. Brinkman III, M.D., *Chair, Harbor-UCLA*  
Ezra C. Davidson, M.D., *Chair, King/Drew*  
George Mikhail, M.D., *Chair, Olive View-UCLA*  
Lawrence Platt, M.D., *Chair, Cedars-Sinai*

## Scope and Objectives

The medical student program in obstetrics and gynecology is designed to provide firm background in the essentials of women's health. Through a combination of didactic instruction and supervised clinical experience, students acquire the relevant clinical skills of history taking and physical examination and learn reproductive physiology from infancy to the postmenopausal period; antepartum, intrapartum, and postpartum obstetric care; and recognition and management of various gynecologic disorders. Third-year students work in ambulatory clinics and on inpatient services during a six-week core clerkship. Greater depth of experience is provided by elective clerkships during the fourth year which emphasize subspecialties such as maternal/fetal medicine, reproductive endocrinology, gynecologic oncology, and family planning.

For further details on the Department of Obstetrics and Gynecology and a listing of the courses offered, see the *Announcement of the UCLA School of Medicine*.

## Ophthalmology

2-142 Stein Eye Institute, (310) 825-5053

### Chair

Bradley R. Straatsma, M.D.

### Vice Chairs

Sherwin J. Isenberg, M.D. (*Harbor-UCLA*)  
Bartly J. Mondino, M.D. (*Wasserman Professor of Ophthalmology*)  
Arthur L. Rosenbaum, M.D.

## Scope and Objectives

Ophthalmology is the medical science that encompasses knowledge concerning the eyes and the visual system. Derived from many basic and clinical fields, this knowledge must be synthesized by the physician and applied to the prevention, diagnosis, medical management, and surgical therapy of ocular disease.

In response to the steadily increasing incidence and growing importance of ocular disorders, the Department of Ophthalmology and the Jules Stein Eye Institute (including the Doris Stein Eye Research Center) are closely coordinated to form a comprehensive center for research in the sciences related to vision, for the care of patients with disease of the eyes and related structures, and for education in the broad field of ophthalmology.

The Department of Ophthalmology provides instruction to medical students during the second, third, and fourth years. Through lectures,

demonstrations, discussions, and the opportunity to observe patients and review data on cases with a variety of ocular conditions, students gain knowledge and experience in ophthalmology.

For further details on the Department of Ophthalmology and a listing of the courses offered, see the *Announcement of the UCLA School of Medicine*.

## Orthopaedic Surgery

76-134 Center for the Health Sciences, (310) 825-2744

### Chair

Gerald A.M. Finerman, M.D., *Acting*

## Scope and Objectives

The medical student program in orthopedic surgery is designed to provide experience in understanding the diagnosis and management of disorders of the musculoskeletal system. Through a combination of didactic instruction and supervised clinical experience, students acquire the clinical skills of history taking and physical examination of the musculoskeletal system. Diagnosis and orthopedic management of bone and soft tissue trauma, skeletal development defects, tumor, spinal disorders, hand and foot disorders, and arthritis are primary objectives. Third-year students work in ambulatory clinics and on inpatient services during their core surgical clerkship. Fourth-year electives provide the opportunity for in-depth experience on rotations at the UCLA Medical Center and affiliated institutions and emphasize subspecialties such as joint replacement, sports medicine, orthopedic oncology, hand surgery, and spinal surgery.

For further details on the Department of Orthopaedic Surgery and a listing of the courses offered, see the *Announcement of the UCLA School of Medicine*.

## Pathology and Laboratory Medicine

1P-109D Center for the Health Sciences, (310) 825-5719

### Professors

Marcel A. Baluda, Ph.D.  
Judith A. Berliner, Ph.D., *in Residence*  
Alistair J. Cochran, M.D., *in Residence*  
Rita B. Effros, Ph.D., *in Residence*

Richard A. Gatti, M.D., *in Residence*  
 Oliver Hankinson, Ph.D., *in Residence*  
 Faramarz Naeim, M.D., *in Residence*  
 Donald E. Paglia, M.D.  
 Lawrence D. Petz, M.D., *in Residence*  
 David D. Porter, M.D.  
 Denis O. Rodgerson, Ph.D., *in Residence*  
 Dorothy L. Rosenthal, M.D., *in Residence*  
 George S. Smith, M.D., *Acting Chair*  
 Julien L. Van Lancker, M.D.  
 Pasquale A. Cancelli, M.D., *Emeritus*  
 M. Anthony Verity, M.D., *Emeritus*  
 Roy L. Walford, M.D., *Emeritus*

#### Associate Professors

Sanford H. Barsky, M.D.  
 Jonathan Braun, M.D., Ph.D.  
 Thomas A. Drake, M.D., *in Residence*  
 Nir Kossovsky, M.D.  
 James H. McBride, Ph.D., *in Residence*  
 Harry V. Vinters, M.D.

#### Assistant Professors

Linda G. Baum, M.D., Ph.D.  
 Wayne W. Grody, M.D., Ph.D., *in Residence*  
 Elizabeth A. Wagar, M.D.

#### Adjunct Associate Professor

Neil Sidell, Ph.D.

## Scope and Objectives

Pathology is, by definition, the science of disease. Its main purpose is to unravel disease mechanisms. Without it, progress in prevention, diagnosis, and therapy are left to chance. Yet, among medical disciplines, it is one of the youngest because scientific concepts of disease, based on direct observation of diseased organs, developed only in the last 150 years.

Once normal molecules, cells, and organs have been damaged, the result of the injury manifests itself by distortions of behavior at the molecular, cellular, and organ levels. The study of these injuries and reactions to injuries constitutes a body of knowledge well worth mastering for its own sake. Students, however, must also learn to use the existing tools or develop the new tools needed to dissect the events that follow injury. Although education in methodology is not, in principle, different in pathology from that in all other biomedical sciences, it is very different in scope.

A combined education in breadth and depth is indispensable; it is this education, as it is applied to injuries and reaction to injuries, that is the goal of the Ph.D. program in Experimental Pathology.

## Master of Science Degree

Students are only accepted into the program for the purpose of obtaining a Ph.D. in Experimental Pathology. However, the department also awards an M.S. degree in Experimental Pathology in cases where a student is unable to finish the full Ph.D. program but whose completed work is adequate to the standards and minimum requirements set for a master's degree.

The general requirements for the M.S. degree include completion of the core courses (Pathology and Laboratory Medicine 231A, 233, 234A-234F, 250A-250B-250C) and six elective units required of all experimental pathology graduate students. A total of eight units of 500-series courses may be applied toward the 36 units required for the degree; four units may be applied toward the 35-unit graduate course requirement.

You must pass the written qualifying examination at the master's level. A thesis is also required, which encompasses individual research.

## Ph.D. in Experimental Pathology

### Admission

In addition to the University minimum requirements, Graduate Record Examination (GRE) General Test scores and three letters of recommendation are required. There is no application form in addition to the one used by UCLA Graduate Application Processing. Because of the sequencing of classes, applicants are generally considered for admission to Fall Quarter only. For departmental brochures, write to the Chair, Department of Pathology and Laboratory Medicine, 1P-109D CHS, UCLA, Los Angeles, CA 90024-1732.

Students intending to take advanced degrees in the Department of Pathology and Laboratory Medicine must have a bachelor's degree in physical or biological sciences or in the premedical curriculum. M.D.s are also encouraged to apply. Minimum course requirements for admission normally include one year of calculus, physics, general chemistry, organic chemistry, and biological sciences. One course each in biological chemistry, cell biology, molecular biology, immunology, and genetics is highly recommended and is required before taking the written qualifying examination. In some cases, deficiencies in the prerequisites may be fulfilled in the first year of study.

### Course Requirements

*Required:* Pathology and Laboratory Medicine 231A, 233, 234A-234F, 250A-250B-250C. Third-year students are required to attend the graduate seminar but do not present papers. Three laboratory rotations (course 596) must be taken to intelligently select a thesis adviser. In addition you must select six units from remaining pathology courses and related biomedical areas of interest at the upper division or graduate level. Additional electives may be required by your adviser and thesis committee.

### Teaching Experience

You may assist for one or two terms in medical or dental pathology courses to gain teaching experience.

## Qualifying Examinations

After the core course requirements are completed (usually at the end of the second year), a comprehensive written qualifying examination covering core courses and required basic knowledge is administered. If examiners feel that some questions should be elaborated on orally, you must do this within three months of the written examination. If failed, the examination may be repeated.

Six months to one year after completion of the written examination, the University Oral Qualifying Examination is administered by the doctoral committee. This examination normally includes discussion of the subject matter of your proposed dissertation topic. You are expected to have done preliminary work before the examination and to demonstrate wide and comprehensive knowledge of your special subject. After passing, you are advanced to candidacy.

### Final Oral Examination

All candidates are required to defend their dissertation at an oral examination open to the public. The purpose of the dissertation is to demonstrate ability for independent investigation and proficiency in the field.

## Upper Division Course

**199. Special Studies (2 units).** Supervised laboratory research, 10 hours. Prerequisite: consent of instructor. Students select instructor among eligible research faculty and carry out independent laboratory research project under instructor supervision. P/NP or letter grading.

## Graduate Courses

**200A. Dental Pathology (3 units).** Lecture, 90 minutes; laboratory, three hours. Prerequisite: consent of instructor. Fundamental causes of disease processes, using as examples selected lesions or diseases of major organ systems. Ms. Bhuta and the Staff (F)

**M215. Interdepartmental Course: Tropical Medicine (2 units).** (Same as Medicine M215, Microbiology and Immunology M215, and Pediatrics M215.) Lecture, two and one-half hours. Prerequisites: basic courses in microbiology and parasitology of infectious diseases in School of Medicine or Public Health. Study of current knowledge about diseases prevalent in tropical areas of the world. Major emphasis on infectious diseases, with coverage of problems in nutrition and exotic noninfectious diseases. Syllabus supplements topics covered in classroom. S/U grading. Mr. Turner (Sp, alternate years)

**231A. Pathological Anatomy and Physiology (6 units).** Lecture, two hours; discussion, six hours; laboratory, four hours; other, six hours. Prerequisites: graduate standing, completion of curriculum satisfying basic requirements for study of human pathology. Lectures, demonstrations, and individual study of a student loan collection of microscopic slide preparations and of specimens from recent autopsies. Kodachrome photomicrographs and projection of microslides. Concentration in area of general pathology. Mr. Braun and the Staff (F)

**231B-231C. Pathophysiology of Disease (6 units each).** Prerequisites: course 200A, graduate standing, completion of curriculum satisfying basic requirements for study of human pathology. Lectures, demonstrations, and individual study of a student loan collection of microscopic slide preparations and of specimens from recent autopsies. Kodachrome photomicrographs and projection of microslides. Concentration in area of general pathology. In Progress grading. Mr. Naeim and the Staff (W,Sp)

**232. Topics in Vertebrate Neurobiology (2 units).** Introduction to cell biology of vertebrate central nervous system, with special reference to its development, structure, and potential disease processes.

**233. General Pathology Seminar (3 units).** Lecture, two hours; discussion, one hour. Corequisite: course 231A. Designed to provide students with in-depth understanding of topics in course 231A. Reading and discussion of current publications pertaining to general pathology, with emphasis on cell injury/cell death and inflammation/fibrosis. Ms. Berliner (F)

**234A-234F. Molecular and Cellular Foundations of Disease (2 units each).** Lecture, 90 minutes; discussion, 90 minutes. Prerequisites: graduate standing, background in biochemistry, molecular biology, and genetics. Investigation of the disease process. Two topics (four weeks each) offered per term; topics include genetic and metabolic disorders, infectious diseases, oncology, immunology, and nutritional diseases. Mr. McBride and the Staff (W,Sp)

**245. Environmental Pathology.** Prerequisites: graduate standing, consent of instructor. Designed to explore interrelationships of man with his total environment. Presentation of series of special topics to discuss effect on man of changes in compositions of air, water, soil, and other materials. S/U grading.

**250A-250B-250C. Pathology Graduate Student Seminars (2 units each).** Limited to and required of all students in experimental pathology. Review and discussion of current literature and research in special topics of experimental pathology. Ms. Berliner and the Staff (W,Sp)

**254. Seminar: Experimental Neuropathology (1 unit).** Prerequisite: consent of instructor. Weekly seminar series presented by experts working at forefront of research on diseases of nervous system. New experimental approaches and laboratory model systems for studying diseases such as Alzheimer's and Huntington's diseases, epilepsy, neuroblastoma, and multiple sclerosis. S/U grading. Mr. Sidell, Mr. Verity

**255. Mapping the Human Genome (2 units).** Prerequisite: consent of instructor. Basic molecular genetic and cytogenetic techniques of gene mapping. Selected regions of human genomic map scrutinized in detail, particularly gene families and clusters of genes that have remained linked from mouse to human. Discussion of localizations of disease genes. S/U or letter grading. Mr. Gatti (Sp)

**M256. Seminar: Viral Oncology (2 units).** (Same as Microbiology and Immunology M256.) Advanced research seminar designed to consider current developments in the field. Selection of current subjects and publications dealing with tumor viruses, oncogenesis, development, and cellular regulation. Mr. Baluda

**M257. Introduction to Toxicology.** (Same as Pharmacology M257.) Prerequisite: Pharmacology 241 or consent of instructor. Biochemical and systemic toxicology, basic mechanisms of toxicology, and interaction of toxic agents with specific organ systems. (Sp)

**M258. Pathologic Changes in Toxicology.** (Same as Pharmacology M258.) Designed to give students experience in learning normal histology of tissues which are major targets of toxin and the range of pathologic changes that occur in these tissues (liver, bladder, lung, kidney, nervous system, and vascular system). Mr. Van Lancker (W)

**262. Biology of Aging (2 units).** Lecture, one hour; discussion, one hour. Prerequisite: graduate standing. Introduction to biology of aging, with emphasis on mammalian and cellular aging — survival curves, biochemical, immunological, immunogenetic, and neuroendocrine alterations over the life cycle, accelerated aging, life-extension strategies; major theories of aging. S/U or letter grading.

Ms. Effros, Mr. Walford (W)

**M293. Major Concepts in Oncology.** (Same as Microbiology and Immunology M293 and Oral Biology M293.) Lecture, three hours. Prerequisite: graduate standing or consent of instructor. Designed for graduate students contemplating research in oncology. Topics include cancer pathophysiology, genetics, membranes, macromolecular synthesis and control, cell cycle, growth control; physical, chemical, and viral oncogenesis, epidemiology of cancer; tumor immunology; principles of cancer surgery, radiation therapy, and chemotherapy. S/U or letter grading.

Mr. Barsky, Mr. Hankinson (W)

**596. Directed Individual Study or Research (4 to 12 units).** Individual research with members of the staff or of other departments, the latter for purpose of supplementing programs available in department. S/U grading.

**597. Preparation for Qualifying Examinations (2 to 8 units).** Prerequisite: one year of pathology coursework. Individual study for qualifying examinations. S/U grading.

**599. Preparation of Ph.D. Dissertation (2 to 8 units).** Prerequisite: completion of qualifying examinations and majority of Ph.D. research. Writing and completion of dissertation. S/U grading.

## Pediatrics

12-335 Davies Children's Center,  
(310) 825-4128

### Chairs

William F. Friedman, M.D. (*James H. Nicholson Professor of Pediatric Cardiology*), Executive Chair

Barbara M. Lippe, M.D., *Executive Vice Chair*  
Robert B. Ettenger, M.D., *Vice Chair, Clinical Affairs, UCLA Medical Center*

E. Richard Stiehm, M.D., *Vice Chair, Academic Affairs, UCLA Medical Center*

S. Douglas Frasier, M.D., *Chair, Olive View-UCLA*  
Rosemary D. Leake, M.D., *Chair, Harbor-UCLA*  
David L. Rimoin, M.D., Ph.D., *Chair, Cedars-Sinai*  
Robert J. Schlegel, M.D., *Chair, King/Drew*

## Scope and Objectives

The Department of Pediatrics encompasses four teaching hospitals: UCLA, Harbor-UCLA, King/Drew, and Cedars-Sinai Medical Centers. The UCLA Medical Center integrates its clinical program and teaching activities with the Olive View-UCLA Medical Center. The clinical fundamentals course offers medical students detailed instruction in the techniques of the clinical examination of pediatric patients.

The required six-week clinical clerkship in pediatrics is given at one of the four medical centers. In-depth electives in the Department of Pediatrics are listed in the *School of Medicine Handbook of Clinical Courses*, as are the advanced clinical clerkships.

For further details on the Department of Pediatrics and a listing of the courses offered, see the *Announcement of the UCLA School of Medicine*.

## Pharmacology

23-126 Center for the Health Sciences, (310) 825-5294

### Professors

Jorge R. Barrio, Ph.D.  
Gautam Chaudhuri, M.D., Ph.D.  
Arthur K. Cho, Ph.D., *Vice Chair*  
Bernard K-K. Fung, Ph.D., *in Residence*  
Mark A. Goldberg, M.D., Ph.D., *in Residence*  
Edward J. Hoffman, Ph.D.  
Sung-Cheng (Henry) Huang, D.Sc.  
Louis J. Ignarro, Ph.D.  
John C. Mazziotta, M.D., Ph.D.  
Richard W. Olsen, Ph.D.  
Michael E. Phelps, Ph.D. (*Jennifer Jones Simon Professor of Biophysics*), Chair  
Heinrich R. Schelbert, M.D., Ph.D., *Vice Chair*  
Werner E. Flacke, M.D., *Emeritus*  
Robert George, Ph.D., *Emeritus*  
William L. Hewitt, M.D., *Emeritus*  
Donald J. Jenden, Ph.D. (h.c.), B.Sc., M.B., B.S., *Emeritus*  
Peter Lomax, M.D., D.Sc., *Emeritus*  
Dermot B. Taylor, M.D., *Emeritus*

### Associate Professors

Denis B. Buxton, Ph.D.  
Don H. Catlin, M.D.  
Cameron Gundersen, Ph.D.  
Sherrel G. Howard, Ph.D.  
Jamshid Maddahi, M.D.  
Nagichettiar Satyamurthy, Ph.D.

### Assistant Professors

Richard C. Brunken, M.D.  
Simon R. Chery, Ph.D.  
Magnus Dahlbom, Ph.D.  
Jon M. Fukuto, Ph.D.  
Carl Hoh, M.D.  
William Melega, Ph.D.

### Adjunct Professor

Yi-Han Chang, Ph.D.

### Adjunct Associate Professor

M. David Fairchild, M.D.

### Visiting Assistant Professor

Johannes Czernin, M.D.

## Scope and Objectives

The Department of Pharmacology offers instruction for undergraduate, graduate, and medical students. It includes systematic study of the effects of drugs in normal and pathological states, the mechanisms by which these effects are exerted, and the factors influencing their absorption, distribution, and biological disposition. Consideration is also given to the medical and social problems created by the increasing use of drugs by both the medical profession and the public.

Although the department offers only graduate degrees, upper division undergraduate courses are offered with enrollment restrictions as indicated in the course descriptions.

## Master of Science Degree

The Pharmacology Department offers the Ph.D. degree, and students may obtain the M.S. degree; however, the department normally does not admit candidates for the M.S. degree only.

## Ph.D. Degree

### Admission

In addition to meeting University requirements for graduate admission, you must have received a bachelor's degree in a biological or physical science or in the premedical curriculum. Graduate Record Examination (GRE) scores, Test of English as a Foreign Language (TOEFL) scores for international students, and three letters of recommendation are also required.

In suitable cases, students who have course deficiencies may be admitted to graduate standing, but any deficiencies must be removed within a specified time. The following courses must be taken at UCLA only if mastery of the subject matter has not been demonstrated at the time of admission by completion of an equivalent course within 36 months with a grade of B or better, as evaluated by the faculty graduate training committee: Pharmacology 211A-211B, M258, Biological Chemistry 201A-201B or Chemistry and Biochemistry 153B and 153C, Physiology 201A-201B, and one biostatistics course.

Prospective students may write for a departmental brochure to the Graduate Student Office, Department of Pharmacology, 23-126 CHS, UCLA, Los Angeles, CA 90024-1735.

### Major Fields or Subdisciplines

Cardiovascular pharmacology, chemical pharmacology, clinical pharmacology, immunopharmacology, neuroendocrine pharmacology, neuropharmacology, psychopharmacology.

### Course Requirements

**Required:** Pharmacology 200 (three terms), 234A-234B, 237A-237B, 241, 251 (must be taken every term), Anatomy and Cell Biology M203A-M203B.

All coursework should be completed by the end of the sixth term and prior to taking the departmental comprehensive examinations.

The Pharmacology Department provides a system of laboratory rotations (course 200) in order to familiarize students with a variety of pharmacological research areas and techniques. During your first six terms in the department, you participate in projects of your choosing. If possible, two of these are during the regular academic year and the third during the summer. You also become familiar with the literature relevant to the various research

projects and thus establish a basis for the selection of your own research area. If you have already chosen a research area at the time you enter the department, you may benefit by working in the related laboratory during the previous summer. This would provide an uninterrupted period of over two months to work on a research project.

As part of course 200 you must submit a report of your activities in the various research groups by the end of the term. The report should include the nature of the project, how you participated, the results obtained, and a critical evaluation of the project.

### Teaching Experience

Seminar presentations are required of all students in the graduate program.

### Qualifying Examinations

Examinations are given in all courses except seminars and research. These are in the form of written examinations, oral examinations, term papers, and/or laboratory practicals.

After completing the first two years of study, you are required to take a departmental comprehensive examination consisting of a written part and an oral part. You are then recommended for continuation toward the Ph.D. degree, for further remedial study, or for termination. Questions are intended to test for a rational, analytical approach to problem solving and for ability to integrate material learned in different courses. You are expected to know basic principles of pharmacology and the status of topics of current interest in pharmacology.

After passing the departmental comprehensive examination, you must take the University Oral Qualifying Examination within 18 months. This examination is administered by the doctoral guidance committee. Most questions concentrate on the background literature, experimental methods, and implications of your field of interest and dissertation project. When you pass this examination, you are eligible to petition the Graduate Division for advancement to Ph.D. candidacy.

If you fail any one of the above required examinations, you may be reexamined at a later date determined by the guidance committee.

### Final Oral Examination

A final oral examination is administered after submission of the dissertation.

### Articulated Degree Program

The Department of Pharmacology offers an articulated M.D./Ph.D. program with the UCLA School of Medicine. Candidates must be accepted by the School of Medicine Admissions Office in order to qualify.

## Upper Division Courses

**110. Drugs: Mechanisms, Uses, and Misuse.** Lecture, four hours (seven weeks); discussion, four hours (three weeks). Prerequisites: Biology 5, 6, 9 or equivalent, Chemistry 15 or equivalent. Introduction to pharmacology for undergraduate students, emphasizing principles underlying mechanism of action of drugs, their development, control, rational use, and misuse. Mr. Cho (W)

**M115. Introduction to Pharmacology and Therapeutics (2 units).** (Same as Nursing M115.) Prerequisite for non-nursing students: consent of instructor. Systematic review of major drug groups used therapeutically, the most commonly used members in each group, differences among them, and their mechanisms of action. Mr. Cho and the Staff (W)

**199. Special Studies (2 to 8 units).** Prerequisite: consent of instructor and department chair. Special studies in pharmacology, including either reading assignments or laboratory work or both, designed for proper training of students. (F,W,Sp)

## Graduate Courses

**200. Introduction to Laboratory Research (2 to 4 units).** Prerequisite: consent of instructor. Individual projects in laboratory research for beginning graduate students. At end of each term students submit to their supervisor a report covering research performed. Pharmacology graduate students must take this course three times during their first two years in residence. (F,W,Sp)

**203. Clinical Pharmacology (2 units).** Lecture, zero to two hours; discussion, zero to two hours. Prerequisites: courses 211A-211B. Series of lectures and case presentations designed to illustrate principles of pharmacology in a clinical context, and solution of practical therapeutics by reference to pharmacokinetics, mechanisms of action, and disposition of drugs. Mr. Conolly in charge (Sp)

**211A-211B. Principles of Pharmacology (4 units, 2 units).** Lecture, three to eight hours; discussion, zero to nine hours. Prerequisites: mammalian physiology, biochemistry. Systematic consideration of principles governing interaction between drugs and biological systems and of principal groups of drugs used in therapeutics. Particular attention on modes of action, pharmacokinetics, and disposition to provide a scientific basis for their rational use in medicine. Mr. Ignarro in charge (F,W)

**212A-212B. Graduate Commentary: Clinical Pharmacology (2 units each).** Prerequisites: mammalian physiology, biochemistry. Supplementation of topics covered in course 203. Primarily for graduate students.

**M221. Cellular and Molecular Neurochemistry.** (Formerly numbered M221A.) (Same as Anatomy M221, Biological Chemistry M221, Neuroscience M240, and Psychiatry M221.) Lecture, three hours; discussion, one hour. Prerequisite: biochemistry. Contemporary neurochemistry topics — metabolic specialization and compartments, metabolism and function of ion channels, structure and function of neurotransmitters. Inborn errors and molecular genetics, molecular imaging, aging, and regeneration. Receptor/effecter coupling. S/U or letter grading. Mr. de Vellis, Mr. Olsen (W)

**234A-234B-234C. Experimental Methods in Pharmacology (2 units each).** Prerequisite: consent of instructor. Survey of experimental methods and instrumentation used in analysis, identification, and study of mechanisms of action of pharmacologically active compounds. Mr. Chang, Mr. Fukuto (F,W,Sp)

**236. Neuropharmacology.** Prerequisite: neurophysiology. Advanced neuropharmacology, including actions and modes of action of drugs acting on central nervous system, interactions between drugs and nervous tissue, movements of drugs through blood brain barrier, and distribution to central nervous system; problems of central transmission. (W)

**237A-237B-237C. Research Frontiers in Cellular and Molecular Pharmacology.** Prerequisites: course 241, consent of instructor. Detailed examination of mechanisms of drug action at organismal, tissue, cellular, and molecular levels, emphasizing receptors, receptor/effector coupling, neurotransmitters, autonomic and central nervous system pharmacology.

Mr. Barrio, Ms. Howard, Mr. Olsen (F,W,Sp)

**238. Behavioral Toxicology.** Prerequisite: consent of instructor. Lectures and discussions designed to examine effects of exposures to a wide variety of chemical and physical agents on behavior of total organism as it adjusts to changes in its physical and social environments. Such effects may be reflected as subtle disturbances of behavior before classic symptoms of toxic states become apparent. Consideration to methodologies by which such disturbances may be measured, to state of present knowledge, and to application of knowledge in regulating risks of both prenatal and postnatal exposure. Particular emphasis on relevance of this knowledge to human behavior. (Sp)

**241. Introduction to Chemical Pharmacology.** Prerequisite: organic and biological chemistry. Introduction to general principles of pharmacology. Role of chemical properties of drugs in their distribution, metabolism, and excretion. Mr. Cho (F)

**251. Seminar: Pharmacology (2 units).** Seminars presented by students, faculty, and guest lecturers on a variety of topics. S/U grading.

**253. Seminar: Environmental Toxicology (2 units).** Prerequisite: consent of instructor. Oral reports and discussions of current research on chemical pollutants in environment, their effects on biological systems, and mechanism of these effects.

Mr. Cho (F,W,Sp)

**M255. Biological Catalysis.** (Same as Biological Chemistry M255 and Chemistry M255.) Prerequisites: Chemistry 110A and 153A, or equivalent, or consent of instructor. Reaction mechanisms in molecular biology; experimental approaches for study of enzymes, including kinetics, isotopic labeling, stereochemistry, chemical modification, and spectroscopy; design of pharmacologically active agents and artificial enzymes. Drug metabolism and interactions addressed on a mechanistic level.

Mr. Cho, Mr. Fukuto, Mr. Sigman (Sp)

**M257. Introduction to Toxicology.** (Same as Pathology M257.) Prerequisite: course 241 or consent of instructor. Biochemical and systemic toxicology, basic mechanisms of toxicology, and interaction of toxic agents with specific organ systems.

Mr. Cho, Mr. Froines (Sp)

**M258. Pathologic Changes in Toxicology.** (Same as Pathology M258.) Designed to give students experience in learning normal histology of tissues which are major targets of toxin and the range of pathologic changes that occur in these tissues (liver, bladder, lung, kidney, nervous system, and vascular system).

Mr. Van Lancker (W)

**261. Introduction to Clinical Pharmacology (2 units).** Prerequisite: consent of instructor. Lectures, case presentations, and discussions designed to acquaint graduate students with special problems and effects encountered in clinical use of drugs, including absorption, metabolism and excretion, drug interactions and interference with clinical laboratory analysis. (W)

**291. Special Topics in Pharmacology (2 to 4 units).** Prerequisite: consent of instructor. Examination in depth of topics of current importance in pharmacology. Emphasis on recent contributions of special interest to advanced Ph.D. candidates, academic staff, or visiting faculty. May be taken twice for credit. (F,W,Sp)

**596. Directed Individual Research in Pharmacology (4 to 12 units).**

**599. Research for and Preparation of Ph.D. Dissertation (4 to 12 units).**

## Physiology

53-237 Center for the Health Sciences, (310) 825-6717

### Professors

Francisco J. Bezanilla, Ph.D.  
 Michael H. Chase, Ph.D., *in Residence*  
 Sergio Ciani, Ph.D.  
 Jared M. Diamond, Ph.D., *Executive Vice Chair*  
 Joy S. Frank, Ph.D., *in Residence*  
 Alan D. Grinnell, Ph.D.  
 Earl Homsher, Ph.D.  
 H. Ronald Kaback, M.D.  
 Glenn A. Langer, M.D. (*Castera Professor of Cardiology*)  
 Michael S. Letinsky, Ph.D.  
 Kenneth D. Philipson, Ph.D., *in Residence*  
 Gordon Ross, M.D.  
 Eduardo H. Rubinstein, M.D., Ph.D.  
 George Sachs, M.D., D.Sc. (*Leon J. Tiber, M.D., and David S. Alpert, M.D., Professor of Medicine*)  
 Oscar U. Scremin, M.D.  
 John McD. Tormey, M.D., *Vice Chair for Instruction*  
 Julio Vergara, Ph.D.  
 Ernest M. Wright, D.Sc., *Chair*

### Professors Emeriti

Allan J. Brady, Ph.D.  
 Jennifer S. Buchwald, Ph.D.  
 George Eisenman, M.D.  
 Donald B. Lindsley, Ph.D.  
 Wilfried F.H.M. Mommaerts, Ph.D.  
 Ralph R. Sonnenschein, M.D.  
 Bernice M. Wenzel, Ph.D.

### Associate Professors

Sally J. Krasne, Ph.D.  
 Emeran A. Mayer, M.D.

### Assistant Professors

Linda Demer, M.D., Ph.D.  
 Thomas J. O'Dell, Ph.D.  
 Diane M. Papazian, Ph.D.  
 Nancy L. Wayne, Ph.D.

### Lecturer

Jessie O. Washington, D.V.M.

### Adjunct Professor

Arthur Peskoff, Ph.D.

### Academic Coordinator

Kenneth P. Roos, Ph.D.

## Scope and Objectives

Physiology is the science of the functional activities of the human body. This covers a wide range, including observations on humans and experiments on animals and model systems in order to understand principles. Physiology is the science most directly relevant to human medicine in all its specialties and to understanding all environmental factors affecting human life. It is also a pure science of great challenge because of the complexity of its problems and its extensive interaction with mathematical, physical, biochemical, and engineering sciences, as well as with other branches of biology.

Within the prescribed curriculum, students may specialize in cellular and molecular physiology, theoretical and mathematical physiology, neurobiology, communication and information, organ systems and integrative phenomena, and behavioral physiology.

In a recent survey conducted by the Conference Board of the Associated Research Councils, UCLA's Physiology Department was judged fifth best in the nation in terms of the quality of its faculty. In addition to the Ph.D. program, the department offers postdoctoral training in research and welcomes students interested in articulated M.D./Ph.D. programs.

## Ph.D. Degree

### Admission

Candidates for admission to graduate standing in the Department of Physiology are expected to pursue the Ph.D. degree. The department does not admit candidates for the M.S. degree. Ph.D. students must conform to the general admission requirements set by the Graduate Division and have received a bachelor's degree in a biological or physical science or in the premedical curriculum. In general, at the time of admission, you should have completed courses in mathematics through calculus and differential equations, physics, chemistry (including quantitative analysis, physical and organic chemistry, biochemistry), and biology or zoology.

In certain cases, at the discretion of the department, students lacking some of the preparation but having a strong background in areas pertinent to physiology may be admitted to graduate standing, provided that deficiencies are made up. Successful completion of the first-year curriculum requires knowledge of physical chemistry (at least equivalent to Chemistry and Biochemistry 110A and 156) and differential equations (equivalent to Mathematics 33A). It is strongly recommended that these or equivalent courses be taken prior to admission. If not, these deficiencies must be removed within a specified time after admission, which would likely extend the first-year curriculum into the second year.

The Graduate Record Examination (GRE) General Test is required as well as the Subject Test in Biology or in your major field. Medical College Admission Test (MCAT) scores are accepted in lieu of the GRE. Three letters of recommendation are required and should be addressed to the Director of Graduate Studies. Completion of a master's program is not required.

An application packet and/or departmental brochure is available from the Graduate Student Office, Department of Physiology, 53-237 CHS, UCLA, Los Angeles, CA 90024-1751.

### Major Fields or Subdisciplines

Major fields include cellular physiology and biophysics, molecular physiology, and integrative physiology. Subdisciplines include cellular and molecular electrophysiology, membrane trans-

port, cellular signal transduction, channel and transporter structure and function, muscle physiology, fundamental neurophysiology, neuromuscular physiology, and cardiovascular, gastrointestinal, respiratory, and reproductive physiology.

### Course Requirements

During your first year you must take Physiology M204 (or Neuroscience M205), M209A, 211, M212, M213, and Biological Chemistry CM253. Two laboratory rotations are also required. In your second year you complete 12 units of special topics courses (Physiology 220 through 250C or comparable courses in other departments) pertaining to your research interest(s). Additionally you must take three seminar courses in physiology or other relevant departments during your graduate career.

### Qualifying Examinations

The written comprehensive examination is given during the summer following completion of your second year, by which time you will have nominated your doctoral committee. The purpose of the examination is to assess your ability to read and critically evaluate research papers in your area of interest. The examination is number coded and read by selected faculty members; a pass/fail grade is assigned by the graduate program committee.

The University Oral Qualifying Examination takes place by the end of the Fall Quarter of your third year and is designed to establish that you can independently identify significant research questions, put them in context of existing knowledge in physiology, and design appropriate and realistic protocols for testing hypotheses, and to assure that your dissertation project is appropriate and feasible. You must present an original proposal which is outside your immediate research interest and provide a brief summary of your proposed dissertation project.

Eight to 12 months after the oral qualifying examination, you make a midstream oral presentation at which you apprise your doctoral committee of your research progress, gain approval of any significant changes in research direction, and receive additional help or guidance from your committee to assure your dissertation is completed in a timely fashion.

### Final Oral Examination

Although a dissertation defense is optional at the discretion of your doctoral committee, a public oral presentation of your dissertation research is required.

### Upper Division Courses

**100. Elements of Human Physiology (6 units).** Prerequisite: dental student standing or consent of instructor. Primarily for first-year dental students. Major organic body functions. With special supplementation, a suitable introduction to the field for graduate students for whom the 201A-201B course sequence is too extensive. (F)

**199. Special Studies (1 to 8 units).** Prerequisite: consent of instructor. Special studies in physiology, including either reading assignments or laboratory work or both, designed for proper training of students.

### Graduate Courses

**201A-201B. Organ System Physiology (6 units each).** Lecture, six hours; laboratory, three and one-half hours. Prerequisite: medical student standing or enrollment in qualified graduate program, consent of instructor. Recommended corequisites: courses M203A-M203B. Runs throughout School of Medicine's second semester. Lectures, laboratories, and conferences. Properties of biological membranes. Contractility of muscle. Epithelial transport. Cardiovascular, renal, respiratory, and gastrointestinal systems. Fluid and electrolyte balance. To receive credit, both courses must be taken together in same academic year. In Progress grading. Mr. Tormey and the Staff (W,Sp)

**M203A-M203B. Basic Neurology.** (Formerly numbered 203A-203B.) (Same as Anatomy M203A-M203B.) Prerequisites: medical student standing or enrollment in qualified graduate program, consent of instructor. Runs throughout School of Medicine's second semester. Lectures, conferences, demonstrations, and laboratory procedures necessary to understand functions of nervous system. To receive credit, both courses must be taken together in same academic year. In Progress grading.

Mr. Letinsky, Mr. Schlag, and the Staff (W,Sp)

**M204. Cellular and Molecular Developmental Neurobiology.** (Same as Anatomy M204, Biology M280, Neuroscience M204, and Psychiatry M204.) Lecture, three hours; discussion, one hour. Prerequisites: Neuroscience M201, M202, and M203, or Biological Chemistry 201A-201B, or consent of instructor. Cellular and molecular processes that regulate development of nervous systems of vertebrates and invertebrates. Topics include regional specification in early neurogenesis, generation of neuronal diversity, cell surface interactions and growth factors, neuronal and glial proliferation and migration, axonal outgrowth and guidance, synaptogenesis, trophic interaction, plasticity, regeneration, and aging.

Mr. de Vellis (W)

**M209A. Cell Molecular Structure and Function (5 units).** (Same as Anatomy M209A.) Lecture, four hours; discussion, one hour. Prerequisites: graduate standing, college-level biochemistry, consent of instructor. Introduction to cell biology for graduate students in basic medical sciences. Topics include membrane structure, assembly, and function; biogenesis of organelles, intercellular and intracellular signaling, immunity and gene structure, function and replication.

Mr. Bok, Mr. Homsher (F)

**211. Integrative and Regulatory Biology (2 units).** Lecture, one hour; discussion, one hour. Prerequisite: graduate standing; for advanced undergraduates in physiological science, life sciences, engineering, or other relevant disciplines: consent of instructors. Biological safety margins, reserve capacities, and evolutionary matching of physiological capacities to natural loads. Dynamical system models of physiologic processes.

Mr. Diamond, Mr. Garfinkel (W)

**M212. Introduction to Cellular Physiology and Biophysics (6 units).** (Same as Biology M237 and Physiological Science M212.) Lecture, five hours. Prerequisite: graduate standing; for upper division undergraduates: consent of instructor. Development of fundamental physiological and biophysical concepts associated with all membranes, membrane channels and transporters, membrane potential, membrane excitability, electrical signal transmission and transduction, and muscle contraction and their application to study of basic cellular processes. Emphasis in laboratory on development of skills using computer programming languages, spreadsheets, and graphics for modeling and analysis of cellular processes.

Mr. Ciani and the Staff (W)

**M213. Integrative Physiology (6 units).** (Same as Physiological Science M213.) Lecture, four hours; tutorial, one hour. Prerequisite: graduate standing; for upper division undergraduates: consent of instructor. Advanced treatment of fundamental human organ systems. Topics include homeostatic regulation and cardiopulmonary, renal, gastrointestinal, and muscle function, with emphasis on molecular, cellular, and physical principles underlying integrative behavior of these systems.

Mr. Feldman, Mr. Wright (Sp)

**220. Methods in Cell Physiology (6 units).** (Formerly numbered 213.) Prerequisite: consent of instructor. Linear circuit analysis, including admittance, transfer admittance, transfer function, and filters using transform methods. Application of these concepts to electronic analog circuits in lectures and laboratory, with emphasis on operational amplifiers. Applications to electrophysiology include microelectrode amplifiers, voltage clamp and patch clamp techniques, with circuit analysis and noise considerations. Digital electronics cover logic gates, sequential circuits, and A/D and D/A conversion, with introduction to sampling theory.

Mr. Bezanilla, Mr. Vergara (F)

**221. Cell Physiology: Excitability (6 units).** (Formerly numbered 214.) Prerequisite: course 220 or consent of instructor. In-depth coverage of general properties of excitable cells, linear cable properties, nonlinear conductance changes, and generation and propagation of the nerve impulse. Voltage gating and gating currents, as well as relationship between macroscopic conductance and single channel properties discussed in analytical detail using original publications.

Mr. Bezanilla, Mr. Vergara (W)

**222. Cell Physiology: Cellular Interaction.** (Formerly numbered 215.) Prerequisite: consent of instructor. Simple and complex cellular interactions in nervous system. Study of synaptic transmission to higher-level cell-cell interactions, culminating in examination of mechanisms of central nervous system functions.

Mr. Letinsky (Sp)

**M223. Membrane Molecular Biology (6 units).** (Same as Biological Chemistry M223.) Lecture, five hours. Prerequisites: Biological Chemistry CM253 or consent of instructor, graduate or selected upper division undergraduate standing. Advanced course in molecular aspects of membrane physiology and biochemistry covering lipids and physical chemistry of biological membranes; membrane biogenesis and targeting of proteins to membranes; pumps, carriers, and channels; receptors and transmembrane signaling.

Mr. Kaback, Ms. Papazian, and the Staff (W)

**224. Transport Systems in Cell Membranes.** (Formerly numbered 217B.) Prerequisite: consent of instructor. Properties of pumps and carriers in cell membranes and ion (Na, K, H, and Ca) transport across plasma membranes of single cells and epithelia.

Mr. Sachs, Mr. Wright

**226. Excitation-Contraction Coupling in Muscle (2 to 6 units).** (Formerly numbered 221A.) Prerequisite: consent of instructor. Detailed study of relationship between membrane excitation and contractile activation in muscle.

Mr. Vergara (Sp)

**227. Biochemistry and Mechanics of Muscle (2 to 6 units).** (Formerly numbered 221B.) Prerequisite: consent of instructor. Detailed study of biochemistry, energetics, and contractile mechanisms in muscle.

Mr. Homsher

**228. Epithelia: Structure and Function (2 units).** Prerequisite: consent of instructor. Lectures and seminars on physiology of epithelia cells, with particular emphasis on membrane transport. S/U grading.

Mr. Wright (W)



**229. Ion Permeation and Gating Kinetics of Channels and Carriers in Biological Membranes.** Lecture, three hours; discussion, one hour. Prerequisite: graduate standing or consent of instructor. Theoretical methods for modeling ion permeability and gating kinetics of membrane channels and carriers. For description of fluxes, analysis of approaches based on electrodiffusion and statistical mechanics. For study of gating, analysis in depth of current transients, current fluctuations, and single-channel currents. S/U grading. Mr. Ciani (W)

**250A-250B-250C. Critical Topics in Physiology (2 to 8 units each).** (Formerly numbered 212A-212B-212C.) Prerequisite: consent of instructor. Advanced treatment of critical topics in physiology by staff for graduate and postdoctoral students in biomedical sciences.

**260. Use of Laboratory Animals in Research.** Prerequisite: consent of instructor. Introductory course for graduate students in medical and biological sciences, covering principles and practical problems in handling and use of common laboratory animal species. Mr. Washington

**M270A-M270B-M270C. Cell, Molecular, and Integrative Biology Seminars (1 unit each).** (Same as Anatomy M270A-M270B-M270C.) Prerequisite: graduate standing or consent of instructor(s). Presentation of weekly seminars on current topics in cell and molecular biology by faculty members from Anatomy and Cell Biology, Physiology, and other UCLA departments, in addition to invited lecturers. S/U grading.

Mr. de Vellis, Mr. Grinnell (F,W,Sp)

**596. Directed Individual Study or Research (2 to 12 units).** Prerequisite: consent of instructor.

**597. Preparation for M.S. Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 12 units).** Prerequisite: consent of instructor.

**598. Thesis Research for M.S. Candidates (2 to 12 units).** Prerequisite: consent of instructor.

**599. Dissertation Research for Ph.D. Candidates (2 to 12 units).** Prerequisite: consent of instructor.

## Psychiatry and Biobehavioral Sciences

C8-202 NPI&H, (310) 825-0770

### Professors

Robert F. Asarnow, Ph.D., *in Residence (Medical Psychology)*

D. Frank Benson, M.D.

Nicholas G. Blurton Jones, Ph.D. (*Biobehavioral Sciences*)

Nathaniel A. Buchwald, Ph.D., *in Residence (Biobehavioral Sciences)*

Anthony T. Campagnoni, Ph.D., *in Residence (Biobehavioral Sciences)*

Dennis P. Cantwell, M.D. (*Joseph Campbell Professor of Child Psychiatry*)

Stephen D. Cederbaum, M.D., *in Residence*

Robert H. Coombs, Ph.D., *in Residence (Biobehavioral Sciences)*

Barbara F. Crandall, M.D., *in Residence*

Jeffrey L. Cummings, M.D., *in Residence*

Frank A. DeLeon Jones, M.D., *in Residence*

Jean S. de Vellis, Ph.D., *in Residence (Biobehavioral Sciences)*

Robert B. Edgerton, Ph.D., *in Residence (Biobehavioral Sciences)*, Associate Chair,

Academic Affairs

Fawzy I. Fawzy, M.D., *in Residence*, Associate Chair

Arvan L. Fluharty, Ph.D., *in Residence (Biobehavioral Sciences)*

Steven R. Forness, Ed.D., *in Residence (Biobehavioral Sciences)*

Betty Jo Freeman, Ph.D., *in Residence (Medical Psychology)*

Joaquin M. Fuster, M.D., *in Residence*

Rosslyn Gaines, Ph.D., *Recalled, in Residence (Medical Psychology)*

Gary C. Galbraith, Ph.D., *in Residence (Medical Psychology)*

Ronald G. Gallimore, Ph.D., *in Residence (Biobehavioral Sciences)*

Michael J. Goldstein, Ph.D. (*Medical Psychology*)

Richard Green, M.D., J.D., *in Residence*

Milton Greenblatt, M.D., *Recalled, Vice Chair*

Donald Guthrie, Ph.D., *in Residence (Biobehavioral Sciences)*

Constance L. Hammen, Ph.D. (*Medical Psychology*)

Frank W. Hayes, M.D., *in Residence*

Lissy F. Jarvik, Ph.D., M.D.

Murray E. Jarvik, M.D., Ph.D., *Recalled*

Joseph R. Jedrychowski, D.D.S. (*Biobehavioral Sciences*)

Allen W. Johnson, Ph.D. (*Biobehavioral Sciences*)

Marvin Karno, M.D., *in Residence*

Barbara Keough, Ph.D., *Recalled*

Keith T. Kernan, Ph.D., *in Residence (Biobehavioral Sciences)*

Arthur S. Kling, M.D., *in Residence, Vice Chair*

Michael Steven Levine, Ph.D., *in Residence (Neuroanatomy)*

Robert P. Liberman, M.D., *in Residence*

Stephen R. Marder, M.D., *in Residence*

Michael T. McGuire, M.D.

Milton H. Miller, M.D., *Vice Chair*

Jim Mintz, Ph.D., *in Residence (Medical Psychology)*

Kazuo Nihira, Ph.D., *in Residence (Medical Psychology)*

Ernest P. Noble, M.D., Ph.D. (*Thomas P. and Katherine K. Pike Professor of Alcohol Studies*)

Keith H. Nuechterlein, Ph.D., *in Residence (Medical Psychology)*

Edward M. Ornitz, M.D., *in Residence*

Alfonso Paredes, M.D., *in Residence*

Robert O. Pasnau, M.D., *in Residence*

Morris J. Paulson, Ph.D., *Recalled*

Edward R. Ritvo, M.D., *in Residence*

Don A. Rockwell, M.D., *Vice Chair*

Paul Satz, Ph.D., *in Residence (Neuropsychology)*

Arnold B. Scheibel, M.D.

Eustace A. Serafetinides, M.D., Ph.D., *in Residence*

David Shapiro, Ph.D. (*Medical Psychology*)

Jerome M. Siegel, Ph.D., *in Residence (Biobehavioral Sciences)*

Marian D. Sigman, Ph.D., *in Residence (Medical Psychology)*

James Q. Simmons, M.D., *in Residence, Associate Chair, Clinical Affairs*

George F. Solomon, M.D., *in Residence*

S. Stefan Soltysik, M.D., Ph.D., *in Residence (Neurophysiology)*

Robert S. Sparkes, M.D.

Maurice B. Sterman, Ph.D., *in Residence (Biobehavioral Sciences)*

Michael A. Strober, Ph.D., *in Residence (Medical Psychology)*

Peter E. Tanguay, M.D., *in Residence, Vice Chair*

Claudewell S. Thomas, M.D., *in Residence, Vice Chair*

Gary L. Tischler, M.D., *in Residence, Executive Chair*

Bernard Towers, M.D., *Recalled*

J. Thomas Ungerleider, M.D., *in Residence*

Jaime R. Villablanca, M.D., *in Residence (Neurophysiology)*

Dora B. Weiner, Ph.D., *in Residence (Medical Humanities)*

Herbert Weiner, M.D., *Recalled*

Thomas S. Weisner, Ph.D., *in Residence (Biobehavioral Sciences)*

David K. Wellisch, Ph.D., *in Residence (Medical Psychology)*

Kenneth B. Wells, M.D., *in Residence*

Louis Jolyon West, M.D.

Charles D. Woody, M.D., *in Residence (Biobehavioral Sciences)*

Gail E. Wyatt, Ph.D., *in Residence (Medical Psychology)*

Joel Yager, M.D., *in Residence, Associate Chair, Education*

Joe Yamamoto, M.D., *in Residence*

Arthur Yuwiler, Ph.D., *in Residence (Biobehavioral Sciences)*

### Professors Emeriti

T. George Bidder, M.D.

Norman Q. Brill, M.D.

Ching-Pio Chien, M.D.

Kenneth M. Colby, M.D.

Samuel Eiduson, Ph.D.

Barbara Fish, M.D.

Don E. Flinn, M.D.

John Garcia, Ph.D.

Edward Geller, Ph.D.

John Hanley, M.D.

Frank M. Hewett, Ph.D.

Chester D. Hull, Ph.D.

Harry J. Jerison, Ph.D.

John G. Kennedy, Ph.D.

Lewis L. Langness, Ph.D.

Judd Marmor, M.D.

James T. Marsh, Ph.D.

Ivan N. Mensh, Ph.D.

George J. Popjak, M.D.

Douglass R. Price-Williams, Ph.D.

Fredrick C. Redlich, M.D.

Alexander C. Rosen, Ph.D.

Robert T. Rubin, Ph.D., M.D.

Edwin S. Schneidman, Ph.D.

Arthur B. Silverstein, Ph.D.

Ralph E. Worden, M.D.

Henry H. Work, M.D.

### Associate Professors

Joan R. Asarnow, Ph.D., *in Residence (Medical Psychology)*

Lewis R. Baxter, M.D., *in Residence*

Carole H. Browner, Ph.D., *in Residence (Biobehavioral Sciences)*

Rochele Caplan, M.D., *in Residence*

Robin S. Fisher, Ph.D., *in Residence (Biobehavioral Sciences)*

Frederick D. Frankel, Ph.D., *in Residence (Medical Psychology)*

Thomas R. Garrick, M.D., *in Residence*

Eric Halgren, Ph.D., *in Residence (Medical Psychology)*

Sherrrel G. Howard, Ph.D. (*Biobehavioral Sciences*)

Bruce L. Kagan, M.D., Ph.D., *in Residence*

Ira M. Lesser, M.D., *in Residence*

Keh-Ming Lin, M.D., *in Residence*

Wendy B. Macklin, Ph.D., *in Residence (Biobehavioral Sciences)*

Robert S. Pynoos, M.D., *in Residence*

Michael J. Raleigh, Ph.D., *in Residence (Biobehavioral Sciences)*

Andrew T. Russell, M.D., *in Residence*

Walid O. Shekim, M.D., *in Residence*

Esther Sinclair, Ph.D., *in Residence (Medical Psychology)*

Gary W. Small, M.D., *in Residence*

Belinda Tucker, Ph.D., *in Residence (Biobehavioral Sciences)*

Alexander J. Tymchuk, Ph.D., *in Residence (Medical Psychology)*

### Assistant Professors

Kyle B. Boone, Ph.D., *in Residence (Neuropsychology)*

Joel T. Braslow, M.D., *in Residence*

Spencer Eth, M.D., *in Residence*

Christopher Evans, Ph.D., *in Residence (Biobehavioral Sciences)*

Kym Faulk, Ph.D., *in Residence (Biobehavioral Sciences)*

Itzhak Fried, M.D., Ph.D., *in Residence*  
 Melissa Hines, Ph.D., *in Residence (Biobehavioral Sciences)*  
 Margaret Kemeny, Ph.D., *in Residence (Biobehavioral Sciences)*  
 Christopher Kessler, M.D., *in Residence*  
 Gregory B. Leong, M.D., *in Residence*  
 Andrew F. Leuchter, M.D., *in Residence*  
 Nigel Maidment, Ph.D., *in Residence (Biobehavioral Sciences)*  
 James T. McCracken, M.D., *in Residence*  
 Martin E. Mueller, M.D., *in Residence*  
 Samuel Nathan, M.D., Ph.D., *in Residence*  
 Todd F. Sadow, M.D., *in Residence*  
 Karen J. Saywitz, Ph.D., *in Residence (Biobehavioral Sciences)*  
 Andrew Shaner, M.D., *in Residence*  
 Barbara Silver, M.D., *in Residence*  
 Tony L. Strickland, Ph.D., *in Residence (Biobehavioral Sciences)*  
 Margaret L. Stuber, M.D., *in Residence*  
 Jerome Vaccaro, M.D., *in Residence*  
 Wilfred G. Van Gorp, Ph.D., *in Residence (Biobehavioral Sciences)*  
 Walter B. Van Vort, M.D., *in Residence*  
 James A. Waschek, Ph.D., *in Residence (Biobehavioral Sciences)*  
 Joseph B. Watson, Ph.D., *in Residence (Biobehavioral Sciences)*

#### Lecturers

Veronica Abney, M.S.W. (*Social Work*)  
 James C. Allen, M.A. (*Mental Health Administration*)  
 Linda A. Andron, M.S.W. (*Social Work*)  
 Barbara A. Bass, M.S.W. (*Social Work*)  
 Diane J. Bass, M.S.W. (*Social Work*)  
 Emma Conner, M.S.W. (*Social Work*)  
 Angela Farrell, M.S.W. (*Social Work*)  
 David J. Fisher, Ph.D. (*Biobehavioral Sciences*)  
 Florence Frisch, M.S.W. (*Social Work*)  
 Mary Lou Gottlieb, M.S.W. (*Social Work*)  
 Joan E. Johnson, M.S.W. (*Social Work*)  
 Martha B. Jura, Ph.D. (*Biobehavioral Sciences*)  
 David T.A. Kaplan, M.S.W. (*Social Work*)  
 Barbara Korne, M.S.W., L.C.S.W. (*Social Work*)  
 Myrtle Mandiberg, M.A. (*Biobehavioral Sciences*)  
 Rosemarie Matic, B.S. (*Physical Therapy*)  
 Miriam A. Meyer, M.S.W. (*Social Work*)  
 Natalie R. Newman, M.A. (*Biobehavioral Sciences*)  
 Terri A. Price, M.A. (*Biobehavioral Sciences*)  
 Janice Roper, R.N., Ph.D. (*Nursing*)  
 Lisa Sato, M.S. (*Physical Therapy*)  
 Naomi Siegel, L.C.S.W. (*Social Work*)  
 Cheryl Spurlock, L.C.S.W. (*Social Work*)  
 Alice Sutton, M.S.W. (*Social Work*)  
 Julie Talley, B.S. (*Biobehavioral Sciences*)  
 Donna Warren, R.N., M.N., C.S. (*Nursing*)

#### Adjunct, Visiting, and Clinical Professors

Jampur V. Ananth, M.D., *Adjunct*  
 Christiane A.M. Baltaxe, Ph.D., *Adjunct (Biobehavioral Sciences)*  
 James Birren, Ph.D., *Adjunct (Biobehavioral Sciences)*  
 Annette M. Brodsky, Ph.D., *Adjunct (Medical Psychology)*  
 Warren S. Brown, Ph.D., *Adjunct (Biobehavioral Sciences)*  
 John R. Elpers, M.D., *Adjunct*  
 Calvin J. Frederick, Ph.D., *Adjunct (Medical Psychology)*  
 Irene T. Goldenberg, Ed.D., *Adjunct (Medical Psychology)*  
 Roderic Gorney, M.D., Ph.D., *Recalled, Adjunct*  
 Saul I. Harrison, M.D., *Adjunct*  
 Christoph M. Heinicke, Ph.D., *Adjunct (Medical Psychology)*  
 Jean C. Holroyd, Ph.D., *Adjunct (Medical Psychology)*  
 Melvin R. Lansky, M.D., *Adjunct*  
 Charles P. McCreary, Ph.D., *Clinical (Medical Psychology)*  
 James F. McGinnis, Ph.D., *Adjunct (Biobehavioral Sciences)*

James G. Miller, M.D., Ph.D., *Adjunct*  
 Armando Morales, D.S.W., *Adjunct (Social Work)*  
 Paul R. Munford, Ph.D., *Adjunct (Medical Psychology)*  
 Michel Philippart, M.D., *Adjunct*  
 H. Rebecca Rausch, Ph.D., *Adjunct (Neuropsychology)*  
 Kiki V. Roe, Ph.D., *Adjunct (Medical Psychology)*  
 Abraham Rosenberg, Ph.D., *Adjunct (Biobehavioral Sciences)*  
 Mary Jane Rotheram-Borus, Ph.D., *Visiting*  
 Iradj Siassi, M.D., *Adjunct*  
 Paul F. Slawson, M.D., Ph.D., *Adjunct*

#### Adjunct, Visiting, and Clinical Associate Professors

V. Charles Charuvastra, M.D., *Adjunct*  
 Milton S. Davis, Ph.D., M.D., *Adjunct*  
 Armen Djenderedjian, M.D., *Clinical*  
 L. Jaime Fitten, M.D., *Adjunct*  
 Frank Gawin, M.D., *Visiting*  
 Michael Gitlin, M.D., *Visiting*  
 Victor Haddox, M.D., J.D., *Adjunct*  
 Jeffrey S. Hammer, M.D., *Clinical*  
 Behnaz Jalali, M.D., *Clinical*  
 David J. Martin, Ph.D., *Clinical*  
 Ricardo P. Mendoza, M.D., *Clinical*  
 Bruce Naliboff, Ph.D., *Clinical*  
 Mary J. O'Connor, Ph.D., *Adjunct (Medical Psychology)*  
 James J. Preis, J.D., *Adjunct (Law)*  
 Warren R. Procci, M.D., *Adjunct*  
 Albert Sattin, M.D., *Clinical*  
 James E. Spar, M.D., *Clinical*  
 Jeffery N. Wilkins, M.D., *Adjunct*  
 Boghos Yeravanian, M.D., *Visiting*

#### Adjunct, Visiting, and Clinical Assistant Professors

Mahmoud Ajang, M.D., *Clinical*  
 Lori Altshuler, M.D., *Clinical*  
 Sylvia Askin-Edgar, M.D., *Clinical*  
 Beth Bernstein, M.D., *Clinical*  
 Sylvia Boris, Ph.D., *Clinical*  
 Leslie A. Brothers, M.D., *Clinical*  
 Vivien K. Burt, M.D., Ph.D., *Clinical*  
 Alexander Bysritsky, M.D., Ph.D., *Clinical*  
 Kathleen A. Daly, M.D., *Clinical*  
 Mark De Antonio, M.D., *Visiting*  
 Pamela Diefenbach, M.D., *Visiting*  
 Steven Ganzell, Ph.D., *Clinical (Medical Psychology)*  
 Buford Gibson, M.D., *Clinical*  
 Charles S. Grob, M.D., *Visiting*  
 Barry Guze, M.D., *Clinical*  
 Neil Hartman, M.D., Ph.D., *Clinical*  
 Yih-Ing Hser, Ph.D., *Adjunct (Psychology)*  
 Karen Ito, Ph.D., *Visiting (Biobehavioral Sciences)*  
 Albert-Jan Kettens, M.D., *Clinical*  
 Bryan King, M.D., *Clinical*  
 Ralph Jan Koek, M.D., *Clinical*  
 Robert J. Myatt, Ph.D., *Visiting (Medical Psychology)*  
 Robert E. Neshkes, M.D., *Clinical*  
 Vijay M. Ranganath, M.D., *Clinical*  
 Rochelle Reno, Ph.D., *Adjunct (Medical Psychology)*  
 Robert P. Rose, M.D., Ph.D., *Clinical*  
 Jacob Samler, M.D., *Clinical*  
 Joan F. Scheibel, M.D., Ph.D., *Clinical*  
 Stephen B. Seager, M.D., *Clinical*  
 Pranav Shah, M.D., *Clinical*  
 Daniel Siegel, M.D., *Visiting*  
 Christine Skotzko, M.D., *Clinical*  
 Susan L. Smalley, Ph.D., *Adjunct (Biobehavioral Sciences)*  
 Paula Stoessel, Ph.D., *Visiting*  
 B. Thomas Strouse, M.D., *Clinical*  
 David L. Sultzter, M.D., *Clinical*  
 Douglas Tucker, M.D., *Clinical*  
 Bradley Warren, M.D., *Visiting*  
 William C. Wirshing, M.D., *Adjunct*  
 Frisca L. Yan-Go, M.D., *Clinical*  
 Bonnie Zima, M.D., *Clinical*

## Scope and Objectives

The Department of Psychiatry and Biobehavioral Sciences offers interdisciplinary courses related to the mental health professions of the biobehavioral sciences in addition to its programs for psychiatry interns and residents and for medical students (courses for medical students are listed in the *Announcement of the UCLA School of Medicine* and the *School of Medicine Handbook of Clinical Courses*).

Enrollment in department courses is limited to registered UCLA students, students registered in programs officially affiliated with UCLA, and students enrolled concurrently through UCLA Extension. Students who meet these requirements, but who are not affiliated with a departmental training program, must also meet required course prerequisites determined by specific educational programs. Additional information is available from the department office.

## Programs

The **Developmental Disabilities Immersion Program** is cosponsored by the Department of Psychology, the Department of Psychiatry and Biobehavioral Sciences, and the Office of Instructional Development — Field Studies Development. Each year a group of 30 students is selected for the program which runs during Winter/Spring Quarters. Students participate in courses, fieldwork, and research at selected University and community facilities serving persons with developmental disabilities. Required courses include Psychology/Psychiatry M180A, M180B, M181A-M181B. Students also take other courses related to developmental disabilities. Many of the courses fulfill psychology undergraduate major requirements. Student individualized research projects are also part of the immersion experience. Students interested in the program should contact the Office of Instructional Development — Field Studies Development (70 Powell Library) or the Psychology Undergraduate Advising Office (1531 Franz Hall).

The department offers a 12-month **Clinical Psychology Internship**, which is a Graduate Division certificate program. Students enrolled in clinical psychology programs at APA-approved universities are eligible to apply. Applications are accepted through December 1. The primary goals of the internship are to provide a year of intensive exposure to a wide variety of clinical and human services experiences and to maximize the personal growth of each professional. Students interested in this certificate program should contact the Psychology Internship Training Office, 68-265 NPI&H (310-825-6606).

Information on clinical practicums which are offered in conjunction with other educational institutions and UCLA departments may be obtained from the department office.

## Upper Division Courses

**M112. Laboratory for Naturalistic Observations: Developing Skills and Techniques.** (Same as Anthropology M136Q.) Prerequisite: consent of instructor. Skill of observing and recording behavior in natural settings, with emphasis on field training and practice in observing behavior. Group and individual projects. Discussion of some of the uses of observations and their implications for research in social sciences. (W)

**M119. Evolution of Intelligence.** (Same as Psychology M119K.) Lecture, two hours; discussion, two hours. Prerequisites: Psychology 15 or 115, introductory statistics course, junior or senior standing, consent of instructor. Intelligence treated as neural information-processing capacity; its evolution in vertebrates correlated with evolution of enlarged brains. Quantitative approaches in evolutionary biology and neurosciences. Mr. Jerison (W)

**M142. Advanced Statistical Methods in Psychology.** (Same as Psychology M142.) Lecture, two hours; discussion, 90 minutes. Prerequisite: Psychology 41. Survey of statistical techniques commonly used in psychology, education, and behavioral and social sciences: correlational techniques, analysis variance, and multiple regression. Mr. Nihira (W)

**M180A. Contemporary Problems in Mental Retardation.** (Same as Psychology M180A.) Prerequisites: Psychology 10, 41, and 127 or 130. Corequisites: courses M181A-M181B. Limited to Immersion Program students. Presentation of concepts, issues, and research techniques in the area of mental retardation. Biological, psychological, and community questions concerning causes and treatment of developmental disabilities, as well as systems for care and training of retarded individuals. Lectures, directed reading, and discussion. Mr. Galbraith (W)

**M180B. Contemporary Issues in Mental Retardation.** (Same as Psychology M180B.) Prerequisite: course M180A. Limited to Immersion Program students. Psychoeducational issues in mental retardation relating literature to ongoing field experiences through lectures, discussions, media, and six student papers. Mr. Fluharty (Sp)

**M181A-M181B. Research in Contemporary Problems in Mental Retardation.** (Same as Psychology M181A-M181B.) Corequisites: courses M180A, M180B. Research experience. In Progress grading. Mr. Fluharty and the Staff (W,Sp)

**M190. Ethology: Physiology of Behavior and Learning in Animals.** (Same as Psychology M119J.) Prerequisites: Psychology 115, junior standing. Basic course for undergraduate students which integrates systematic overview of common forms of behavioral plasticity and standard training procedures in laboratory animals (in behavioral, neurophysiological, and pharmacological studies) with broad biological, evolutionary perspective. Mr. Soltysik (W)

**191. Biological Bases of Psychiatric Disorders.** Lecture, three hours. Prerequisites: Neuroscience M101A-M101B-M101C or consent of instructor. Underlying brain systems involved in a number of psychiatric neurologic disorders, including schizophrenia, depression, obsessive/compulsive disorder, as well as neurologic disorders exemplified by both clinical treatment and experimental research. P/NP or letter grading. Mr. Levine and the Staff

**199. Special Studies in Psychiatry (2 to 4 units).** Prerequisite: consent of instructor and department chair, based on written proposal outlining course of study (to be structured by instructor and student at time of initial enrollment). Additional information and course proposal forms are available in Office of Education, C8-202 NPI&H. Mr. Yager

## Graduate Courses

**M203. Molecular Neurobiology.** (Same as Neuroscience M203.) Lecture, three hours; discussion, one hour. Prerequisites: Biological Chemistry 201A-201B or equivalent, basic biochemistry, consent of instructor. Introduction to neurochemistry for neuroscience students. Topics include protein structure and function, lipid structure and metabolism, nucleic acids/molecular biology. Mr. Campagnoni (F)

**M204. Cellular and Molecular Developmental Neurobiology.** (Same as Anatomy M204, Biology M280, Neuroscience M204, and Physiology M204.) Lecture, three hours; discussion, one hour. Prerequisites: Neuroscience M201, M202, and M203, or Biological Chemistry 201A-201B, or consent of instructor. Cellular and molecular processes that regulate development of nervous systems of vertebrates and invertebrates. Topics include regional specification in early neurogenesis, generation of neuronal diversity, cell surface interactions and growth factors, neuronal and glial proliferation and migration, axonal outgrowth and guidance, synaptogenesis, trophic interaction, plasticity, regeneration, and aging. Mr. de Vellis, Ms. Macklin (W)

**205. Madness in the Enlightenment: Care and Cure of Mental Illness in the Age of Reason.** Prerequisites: graduate standing, consent of instructor. Exploration of writings of physicians and reformers of the Enlightenment who studied the mentally ill, treated them, and recorded their theories, findings, and recommendations between ca. 1750 and 1850. Ms. Weiner

**207A-207B-207C. Hypnosis Seminars (2 units each).** Prerequisite: psychology intern, psychiatry resident, member of (or trainee in) one of the licensed mental health professions, or consent of instructor. Experiential seminar intended to prepare mental health professionals for clinical applications, involving didactics, demonstration, practice, and feedback. Following training in inductions and development of classic hypnotic phenomena (e.g., age regression, hypnoanesthesia), focus on psychotherapeutic applications, including direct symptom removal, behavioral methods, and hypnoanalysis. Emphasis on developing skill for application in clinical practice. S/U grading. Ms. Holroyd (F,W,Sp)

**208A-208B-208C. Clinical Neuropsychology (2 units each).** Lecture, 90 minutes. Prerequisites: graduate or postgraduate standing, consent of instructor. Introduction and review of neuropsychological concepts, including functional neuroanatomical systems of the brain, analytic and synthetic activities of the brain, effects of generalized and focal brain impairment on behavior, and introduction to use of neuropsychological test instruments. Mr. Asarnow (W), Mr. Green (F)

**M210. Seminar: Psychocultural Studies.** (Same as Anthropology M234.) Seminar, three hours. Devoted to present state of research in psychocultural studies. Survey of work in child development and socialization, personality, psychobiology, transcultural psychiatry, deviance, learning, perception, cognition, and psychocultural perspectives on change. Mr. Kernan (W)

**M211. Sociocultural Perspectives on Mental Retardation.** (Same as Anthropology M234R.) Lecture, three hours. Prerequisite: consent of instructor. Exploration of concepts such as "intelligence," "competence," and "adaptive behavior" in varying non-Western societies as background to study of the phenomenon of mental retardation in the West, particularly the U.S. Topics include cross-cultural perspectives, history of institutional confinement, policies of deinstitutionalization and normalization, and current issues involving adaptation and "quality of life." Discussion of topics such as communicative competence, work, crime, deviance, sexuality, and marriage. May be repeated for credit. Mr. Edgerton

**M213A-M213B. The Individual in Culture.** (Same as Anthropology M235A-M235B.) Lecture, three hours. Course M213A is prerequisite to M213B. In Progress grading. Mr. Edgerton

**M214. Cross-Cultural Studies of Socialization and Children.** (Same as Anthropology M236P.) Seminar, three hours. Selected topics in cross-cultural study of socialization and child training. Methods, ethnographic data, and theoretical orientations. Emphasis on current research. Mr. Weisner (F)

**M215. Culture, Adaptation, and Intervention.** (Same as Anthropology M235S.) Prerequisite: consent of instructors. Role of ecological, social, and cultural influences on family adaptation, child competence, and interventions, including theory, empirical research, and applied/policy topics. Review and critique of current research in this field. Mr. Gallimore, Mr. Weisner (W)

**M219A-M219B. Basic Core Courses: Mental Retardation Research (2 units each).** (Same as Anthropology M237A-M237B.) Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. Required of all MRRC trainees. Systematic overview of mental retardation and sciences basic to this field of study. Language, methods, aims, and contributions of various disciplines that contribute to the field. Last two weeks of second term are spent discussing and preparing multidisciplinary research designs with potential for prevention or amelioration of mental retardation. S/U grading. Mr. Buchwald, Mr. Edgerton, Mr. Levine

**M221. Cellular and Molecular Neurochemistry.** (Formerly numbered M221A.) (Same as Anatomy M221, Biological Chemistry M221, Neuroscience M240, and Pharmacology M221.) Lecture, three hours; discussion, one hour. Prerequisite: biochemistry. Contemporary neurochemistry topics — metabolic specialization and compartments, metabolism and function of ion channels, structure and function of neurotransmitters. Inborn errors and molecular genetics, molecular imaging, aging, and regeneration. Receptor/effector coupling. S/U or letter grading. Mr. de Vellis, Mr. Olsen (W)

**M222. Transcultural Psychiatry.** (Same as Anthropology M234P.) Lecture, three hours. Prerequisite: consent of instructor. Consideration of psychiatric topics in cross-cultural perspective, such as studies of drug use, deviance, suicide, homicide, behavioral disorders, "culture specific" syndromes, non-Western psychiatries, and questions of "sick" societies. May be repeated for credit. Mr. Edgerton (Sp)

**223A-223B-223C. MMPI Seminars and Case Conferences (2 units each).** (Formerly numbered 223.) Prerequisite: psychology intern, psychiatry resident, or consent of instructor. Seminar and case conference on interpretation of Minnesota Multiphasic Personality Inventory (MMPI) — theory, principles, and research into personality types. Mr. Caldwell (F,W,Sp)

**226A-226B. Childhood Psychopathology Research Seminars (2 units each).** Seminar, 90 minutes. Current research in causes and behavioral manifestations of childhood psychopathology. Discussion on diagnosis and etiology of childhood disturbances. Ms. Sigman, Mr. Tanguay (F,W)

**231. Hispanic Mental Health Issues and Treatment (2 units).** Prerequisite: consent of instructor. Mental health issues and needs of Hispanics through seminars and videotapes dealing with historical comparison of psychiatry in Mexico and the U.S., analysis of various theoretical perspectives regarding biopsychosocial behavior; distinguishing psychodynamic from cultural factors in treatment of Spanish-speaking patients; treatment of Hispanic families, couples, undocumented persons, and criminal justice system clientele. Mr. Morales (W)

**M234. Affective Disorders (2 or 4 units).** (Same as Psychology M280.) Seminar, two hours. General topics related to primary affective disorders (depression, manic depressive illness), including diagnosis, pharmacology, epidemiology, psychology, phenomenology, biology, and treatment. Students enrolled for four units are assigned a more intensive reading list and required to make a presentation or prepare a research paper. Mr. Gitlen, Ms. Hammen

**M235. Laboratory for Naturalistic Observations: Developing Skills and Techniques.** (Same as Anthropology M236Q, Education M222A, and Psychology M295.) Skill of observing and recording behavior in natural settings, with emphasis on field training and practice in observing behavior. Discussion of some uses of observations and their implications for research in social sciences. Students expected to integrate observational work into their current research interests. (W) Ms. Holroyd (F,W,Sp)

**236A-236B-236C. Psychology Interns Seminars (1 unit each).** Seminar, 90 minutes. Current topics in clinical psychology. Group-selected topics for discussion pertaining to psychopathology, diagnostic evaluation, and modalities of treatment. S/U grading. Ms. Holroyd (F,W,Sp)

**237. Seminar: Behavioral Neuroimmunology (1 unit).** (Formerly numbered M237.) Lecture, one hour per month; discussion, 30 minutes per month. Series of lectures presented the second Wednesday of each month throughout academic year by invited speakers. S/U grading. Ms. Kemeny

**M240. Assessment and Treatment of Afro-American Families.** (Formerly numbered 240.) (Same as Afro-American Studies M240.) Seminar, three hours. Designed for both mental health trainees and graduate students interested in developing and refining skills in assessment and treatment of African American families within a sociocultural context. Ms. Tucker, Ms. Wyatt (Sp)

**242. Parent and Child Psychotherapy Seminar (1 unit).** Prerequisites: current experience in psychoanalytically oriented child psychotherapy, consent of instructor. Seminar meets throughout year. During Summer Quarter emphasis on initial clinical and research evaluation as well as early treatment of the child and family. During Fall, Winter, and Spring Quarters instructors use videotaped sessions and notes from their own clinical work to discuss such topics as diagnostic criteria, family system treatment formulations stressing work with parents and children, and such theoretical and technical issues as transference, resistance, overdetermined nature of symptoms, and termination. Student presentations encouraged in order to amplify clinical and theoretical issues and to become familiar with ongoing cases which are part of a systematic outcome study. Ms. McDowell

**243A-243B-243C. Mental Retardation Interdisciplinary Core Curriculum (1 unit each).** Lecture, 90 minutes. Prerequisite: consent of instructor. Survey series on major topic areas of mental retardation, covering epidemiology, nosology, assessment, health care delivery systems, basic genetics, nutrition, direct care, and special deficits. Presented in interdisciplinary framework as generic information independent of discipline. S/U grading. Ms. Sena (F,W,Sp)

**M246. Psychological Aspects of Mental Retardation.** (Same as Psychology M246.) Lecture, 90 minutes. Discussion of psychological aspects of mental retardation, including classification, description, etiology, theory, prevention, treatment, assessment, modern and future developments, and input from other disciplines (ethics, law, religion, welfare systems). Mr. Tymchuk

**247A-247B-247C. Neurological and Psychological Bases of Behavior (1 unit each).** Discussion, two hours. Prerequisites: graduate standing, consent of instructor. Discussion of advances in neurophysiology and neuropsychology, with particular reference to modern developmental studies. Faculty members or advanced students present results of their research work in context of available literature; intense discussion during and after presentation. S/U grading. Mr. Levine (F,W,Sp)

**M249. Neurobiology of Sleep (3 units).** (Same as Neuroscience M259 and Psychology M296.) Lecture, one hour; discussion, two hours. Critical review of primary research publications concerning neural basis of sleep. Discussion of neural and biochemical control of REM and NREM sleep after reviewing sleep behavior and phenomenology, including developmental and comparative aspects. Presentation of relevant clinical phenomena. S/U or letter grading. Mr. Siegel (F)

**M250. Medical Anthropology in Public Health.** (Same as Anthropology M266, Community Health Sciences M232, and Nursing M250.) Seminar, three hours. Cross-cultural aspects of human behavior as they relate to perception, treatment, incidence, and prevalence of disease and illness. Ms. Browner, Ms. Scrimshaw

**253. Seminar: Child Development (1 unit).** Prerequisite: consent of instructor. Theories of development, systems of child development, and chronological aspects of child development. Presentation of assigned readings by students plays major role in each session. Mr. Siegel

**254. Counseling Families of Handicapped Children (2 units).** (Formerly numbered M254.) Lecture, one hour; discussion, 30 minutes. Techniques and issues in counseling families through evaluation, feedback, and treatment. Social and psychological stresses on family unit, professional's reactions, community resources, and issues of genetic counseling, placement, and developmental crises. Ms. Sammons (F)

**M255. Functional Organization of Behavior (2 units).** (Formerly numbered M201A-M201B-M201C.) (Same as Neuroscience M255.) Prerequisite: consent of instructor. Changes in neuronal properties supporting changes in learned behavior. Different types of learning. Role of neurotransmitters and second messengers in changing ion channels of neurons to support associative learning versus long-term potentiation of neurotransmission. S/U or letter grading. Mr. McGuire, Mr. Woody (F)

**256. Basic Clinical Child Psychopathology (1 unit).** Prerequisite: consent of instructor. Weekly seminars covering basic clinical aspects of child psychopathology. Readings provided for basis of discussion on topics including interviewing of parents and children, diagnosis, and related syndromes. Mr. Cantwell

**257A-257B-257C. Communication Disorders Associated with Developmental Disabilities and Psychiatric Disorders (3 units each).** Laboratory, 90 minutes; didactic, 90 minutes. Didactic and practical training in communication and its dysfunction as these relate to language disabilities seen in interdisciplinary medical setting. Provides background for graduate and postdoctoral students who plan to engage in clinical work and/or clinical research in which language disturbances of childhood and adulthood are relevant. Ms. Baltaxe (F,W,Sp)

**M258. Functional Neuropsychology (2 units).** (Formerly numbered M216.) (Same as Neuroscience M258.) Lecture, two hours; discussion, one hour. Prerequisites: graduate standing, consent of instructor. Interdisciplinary course integrating current research publications in neuroanatomy, molecular neurobiology, synaptic neurophysiology, event-related potentials, neuropsychology of amnesia, and cognitive psychology of normal memory into a realistic model. S/U or letter grading. Mr. Halgren (F)

**259. Legal and Ethical Issues with Vulnerable Populations (3 units).** Lecture, 90 minutes; laboratory, three and one-half hours. Discussion of current laws dealing with vulnerable populations (e.g., children, developmentally disabled people, elderly people); philosophies, ethics, ethical codes, issues, and how to resolve them. Use of videotapes and discussion of cases. Mr. Tymchuk

**260. The Chronically Medically Ill Child and Family.** Lecture, three hours; seminar, one hour. Examination from a biopsychological perspective of ramifications of chronic illness affecting life-style and development of the child and family, including examination of relevant theoretical models and research. Clinical application to assessment and intervention strategies. Ms. Betz (F,Sp)

**262A-262B-262C. Clinical Fieldwork in Developmental Disabilities and Chronic Illness (1 to 4 units each).** Prerequisites or corequisites: courses 243A-243B-243C, consent of instructor. Placement and supervision of clinical and consultation activities of interdisciplinary trainees in various community agencies, hospitals, or other related settings serving developmentally disabled or chronically medically ill children, youth, or adults. Supervision done jointly by community personnel on site, in collaboration with interdisciplinary faculty. S/U grading. Mr. Forness

**264. Biofeedback: Theory, Research, and Clinical Application.** Seminar, two hours; laboratory, one hour. Introduction to concepts and techniques of biofeedback, including review of experimental literature and applications to various clinical problems (hypertension, headache, pain and anxiety, sexual dysfunction, cardiac arrhythmias, neuromuscular disorders, etc.). Training in use of portable biofeedback devices. Consideration of research and clinical issues. Mr. Shapiro (Sp)

**265. Mind and Brain in Evolution (2 units).** Prerequisite: consent of instructor. Review of fossil evidence on organic evolution of the brain and implications of that evidence for evolution of mind and intelligence, with emphasis on quantitative approaches. Although some implications for cognitive psychology and individual differences are considered, the evolutionary analysis is "above the species level." Mr. Jerison (Sp)

**266A-266B-266C. Psychophysiological Research (1 unit each).** Seminar, 90 minutes. Prerequisite: consent of instructor. Advanced seminar and discussion of ongoing laboratory research, involving concepts, experimental design, measurement, and data analysis. Current topics include regulation of physiological and subjective reactions to stress, psychophysiological research on diabetes, discrimination and control of blood pressure, and behavioral regulation of postural hypotension. Mr. Shapiro (F,W,Sp)

**M270. Neural Basis of Memory.** (Same as Neuroscience M273.) Lecture, two hours; discussion, one hour. Anatomical, physiological, and neurological data integrated into models for how behavioral phenomena of memory arise. Discussion of invertebrate memory, cortical conditioning, hippocampus and declarative memory, and frontal lobes and primary memory. Mr. Woody

**M272. Psychological Anthropology.** (Same as Anthropology M234Q.) Lecture, three hours. Prerequisite: consent of instructor. Various psychological issues in anthropology, both theoretical and methodological. Areas of interest include such things as culture and theory, culture and personality, and culture psychiatry. Discussion of questions relating to symbolic and unconsciousness process as they relate to culture. Topics vary from term to term. May be repeated for credit. Mr. Edgerton (W)

**M273. Advanced Seminar: Medical Anthropology.** (Same as Anthropology M263Q, Community Health Sciences M244, and Nursing M273.) Seminar, three hours. Prerequisite: consent of instructor. Limited to 15 students. Examination of interrelationships between society, culture, ecology, health, and illness. Bases for written critical analysis and class discussion provided through key theoretical works.

Ms. Browner (W)

**274. Neurophysiology and Behavior (3 units).** Prerequisites: graduate standing, consent of instructor. Analysis of strategies and approaches used to study behavior of mammalian organisms. Special emphasis on recent developments in electrophysiological recording techniques in behaving animals and how such developments relate to classical concepts of brain function.

Mr. Levine (Sp)

**275A-275B. Sociobiology Seminar (2 units each).** Prerequisite: consent of instructor. Review of sociological theory as it applies to adult bonding behavior: kin-selection theory, reciprocal altruism theory, mate selection theory, and bond strategy theory. Bonds viewed primarily from biological rather than psychological perspective. In Progress grading.

Mr. McGuire (F,W)

**276. Neurocognitive Plasticity in Adults (3 units).** Critical examination at multiple levels of brain function changes with aging — from structural changes at cellular, neurochemical, neuroanatomical, and neurophysiological levels on one hand to functional changes in sensory, motor, mnemonic, and intellectual abilities at other. Evaluation of behavioral, pharmacological, and transplantation techniques to enhance or restore function.

Mr. Halgren, Mr. Syndulko (Sp)

**M279A. Seminar: Human Behavioral Ecology.** (Same as Anthropology M229A and Education M281A.) Lecture, one hour; discussion, three hours. Prerequisite: consent of instructor. Examination of predictive models from animal behavioral ecology used to study human diet and subsistence; settlement patterns and territoriality; sharing and helping; reproduction and mortality. Comparison with other economic and ecological approaches in anthropology.

Mr. Blurton Jones

**M279B. Seminar: Reproduction, Families, and Parenting.** (Same as Anthropology M229B and Education M281B.) Prerequisite: consent of instructor. Guided forum for graduate students to discuss and broaden their studies of human reproduction and child rearing from varied viewpoints. Representation and debate of theories, questions, and methods from social and biological sciences.

Mr. Blurton Jones

**M279C. Seminar: Selected Topics in Human Ethology.** (Same as Anthropology M229C and Education M281C.) Lecture, one hour; discussion, three hours. Prerequisite: consent of instructor. Consideration of appropriateness and contributions of using animal behavior methodology in study of human behavior. Analysis: describing and recording behavior; causation; development, especially longitudinal studies; adaptation; evolutionary origins.

Mr. Blurton Jones

**M280. Seminar: Reproduction and Women's Health.** (Same as Anthropology M269P, Community Health Sciences M241, and Nursing M280.) Seminar, three hours. Analysis, using a cross-cultural approach, of sociocultural and political economic factors that affect reproduction and women's health. Topics include relationships between women's domestic and extra-domestic roles and their health, and impact of new reproductive technologies. May be repeated for credit.

Ms. Browner (F)

**281. Behavioral Therapy in an Educational Setting.** Lecture, one hour; laboratory, six to 10 hours. Prerequisite: consent of instructor. Supervised experience in classroom working with exceptional children. Theoretical background furnished through one-hour weekly lecture.

Mr. Forness

**M282. Anthropology of Human Body.** (Same as Anthropology M234T.) Seminar, three hours. Exploration of how sociocultural and political dynamics shape perceptions of and understandings about the human body, and how, reciprocally, those perceptions and understandings influence social processes. Includes materials from both non-Western and Western societies.

Ms. Browner (F)

**298. Current Topics in Biobehavioral Sciences (1 to 4 units).** Prerequisite: consent of instructor. Current issues in biobehavioral sciences offered on selective basis depending on instructor interest and topical relevancy of problems. Consult *Schedule of Classes* for topics and instructors. May be repeated for credit.

**403. Individual Case Supervision (1 to 4 units).** Prerequisite: consent of instructor and department chair (based on written proposal to be structured by instructor and student prior to enrollment; additional information and proposal forms available in Office of Education, C8-202 NPI&H). One-to-one supervision of individual therapy cases, including analyses of patient data, supervision of ongoing treatment, informal didactic sessions on personality theory, and applications to patient management.

**414. Emergency Treatment Attending Rounds (1 unit).** Prerequisites: assignment to Emergency Treatment Unit, consent of instructor. Cases seen in emergency room during preceding night, reviewed by a consultant and emergency treatment staff. Exploration of assessment techniques, methods of intervention, and alternate modes of treatment.

**416. Treatment Planning Meetings (1 unit).** Prerequisite: consent of instructor. Treatment and management problems posed by inpatient psychiatry. Discussion of clinical psychopathology, treatment plans, and interdisciplinary skills. Emphasis on formulating accurate diagnostic assessments and planning effective treatment programs utilizing therapeutic methods of the milieu (somatic therapies, behavioral techniques, family therapy, group process, individual and dyadic treatment, etc.).

**424. Ward Milieu Meeting (1 unit).** Prerequisite: consent of instructor. Milieu course meetings designed to explore experientially and didactically multiple aspects of group process on a psychiatric inpatient unit.

**425. Teaching Case Conference (1 unit).** Prerequisite: consent of instructor. Review of diagnosis and treatment of full spectrum of disorders, with expert off-unit consultants.

**429. Child Outpatient Team (1 unit).** Prerequisite: consent of instructor. Weekly team meetings to coordinate clinical activities of trainees in Child Outpatient Department. Discussion of literature and theories related to selected cases. S/U grading.

**449. Parent Training Intervention Workshop (2 units).** Lecture, 90 minutes; discussion, one hour. Prerequisite: consent of instructor. Advanced clinical trainees learn behavioral techniques of assessment and treatment of parent/child problems. Lectures, case presentations, and workshops on various skills necessary.

Mr. Frankel

**462. School Intervention by Child Psychiatrists.** (Formerly numbered 462A-462B-462C.) Seminar, two hours. Prerequisite: consent of instructor. Knowledge of children in schools through (1) field experience, (2) a didactic program, (3) group supervision. Each trainee selects a local elementary or junior high school as site of field experience in consultation. Supervision focuses on assessing needs of the school and initiating the consultation. Seminars consider theories of consultation, systems theory as applied to schools, organization of school systems, professional roles represented in the school (e.g., teachers, counselors, principals, etc.), and their special problems. In Progress grading.

**465. Pediatric Psychopharmacology (1 unit).** Prerequisite: child psychiatry fellow or consent of instructor. Designed for all fellows in child psychiatry. Background of childhood psychopharmacology; clinical evaluation of psychotropic drugs with children; clinical indications for various psychotropic drugs. Clinical supervision of individual cases provided along with seminars and discussions of various articles.

Mr. Shekim

**471. Grand Rounds (No credit).** Prerequisite: second-year resident in Child Service, child psychiatry fellow, or consent of instructor. Each month one second-year child psychiatry fellow presents a major clinical problem. Senior faculty discussants preside. The presenting trainees expected to cover pertinent literature and to assemble critical elements of information on case or problem at hand. Most sessions eligible for Continuing Medical Education credit.

**M472A. Nursing Care of Developmentally Disabled.** (Same as Nursing M410A.) Lecture, one hour; discussion, one to two hours; laboratory, 10 hours minimum. Prerequisite: consent of instructor. Study of the disabling conditions of childhood and their effects on the individual and family. Content based on normative developmental models with consideration for sociocultural diversity. Emphasis on prevention, systematic assessment, and planning of care for the individual and family. Introduction to implementation of intervention strategies. Series of three courses integrates didactic material and clinical experience.

Ms. Betz (F)

**M472B. Nursing Care of Developmentally Disabled.** (Same as Nursing M410B.) Lecture, one hour; discussion, one to two hours; laboratory, 10 hours minimum. Prerequisites: course M472A and/or consent of instructor. Study of philosophical and conceptual models affecting care delivery for developmentally disabled. Emphasis on intervention strategies necessary for primary, secondary, and tertiary prevention.

Ms. Betz (W)

**M472C. Nursing Care of Developmentally Disabled.** (Same as Nursing M410C.) Lecture, one hour; discussion, one to two hours; laboratory, 10 hours minimum. Prerequisites: course M472B and/or consent of instructor. Exploration and participation in assessment, planning, and delivery of health care to developmentally disabled in a variety of settings. Emphasis on expanded role of the nurse.

Ms. Betz (Sp)

**478. Clinical Genetics Rounds (No credit).** Prerequisites: medical graduate, consent of instructor. Weekly clinical rounds on patients seen in the wards during preceding week. House staff and others involved in clinical work may attend. Usually in-depth discussion of medical and genetic aspects of one or more disorders presented.

Ms. Crandall

**479. Genetics Clinic Presentation (No credit).** Prerequisite: consent of instructor. Weekly clinical teaching session on patients seen in preceding genetics clinic. In-depth discussion on genetics of each disorder.

Ms. Crandall and the Staff

**480. Analysis of Human Chromosome Studies (1 unit).** Prerequisite: consent of instructor. Chromosome karyotypes prepared in cytogenetics laboratory during preceding week presented and discussed with reference to clinical findings. Teaching includes interpretation of abnormal karyotypes and technical aspects of routine and special chromosome stains.

Mr. Sparkes

**481. Chromatography Review (No credit).** Prerequisites: premedical course or biochemistry, consent of instructor. Weekly session with presentation of amino acid chromatography carried out during preceding week. Interpretation of abnormal chromatograms together with technical aspects of tests used.

Mr. Cederbaum

**485. Medical Genetics Seminar (No credit).** Prerequisites: introductory course, consent of instructor. Weekly lecture series intended for those interested in genetics or in specific topic to be presented. Speakers are invited for their expertise or research in some special area related to genetics and may be from UCLA or elsewhere. Discussion and questions from audience encouraged. Ms. Crandall and the Staff

**596P. Individual Studies in Psychiatry (2 to 12 units).** Prerequisite: consent of instructor and department chair, based on written proposal outlining course of study (to be structured by instructor and student at time of initial enrollment). Additional information and course proposal forms available in Office of Education, C8-202 NPI&H. Directed individual research and study in psychiatry at graduate level.

Mr. Yager

## Radiation Oncology

B265 UCLA Medical Plaza 200,  
(310) 825-9304

### Chairs

Robert G. Parker, M.D., *Chair*  
Guy J.F. Juillard, M.D., *Vice Chair, Clinical Affairs*  
H. Rodney Withers, M.D., D.Sc., *Vice Chair, Research*

### Scope and Objectives

The Department of Radiation Oncology includes clinical divisions at the UCLA Medical Plaza and Medical Center, Wadsworth VA Medical Center, St. Joseph Medical Center (Burbank), and divisions of experimental radiation biology and medical radiation physics. Research and teaching facilities are available at the UCLA Medical Plaza, UCLA Medical Center, and Wadsworth VA. The primary clinical mission of the department is the management of patients who have cancer and benign intracranial lesions, although ionizing radiations also are used for preparing patients for bone marrow transplantations and for altering the immune systems of patients with a range of illnesses. Knowledge of the disease in question, the comparative efficacy of radiation therapy and other methods, radiation biology and pathophysiology, and the physical characteristics of varying radiations is essential.

Research interests range from clinical problems through cellular kinetics, radiation modifiers, radiation chemistry, molecular biology, immunology, and basic and applied physics. The educational programs serve medical, dental, nursing, and radiation therapy technologist students, and community and postgraduate physicians who are qualifying for certification in radiation oncology by the American Board of Radiology.

For further details on the Department of Radiation Oncology and a listing of the courses offered, see the *Announcement of the UCLA School of Medicine*.

## Radiological Sciences

1V-365 Center for the Health Sciences, (310) 825-7811

### Professors

Zoran L. Barbaric, M.D. (*Diagnostic Radiology*),  
*Executive Vice Chair*  
Jorge R. Barrio, Ph.D. (*Nuclear Medicine*)  
Edward J. Hoffman, Ph.D. (*Nuclear Medicine*,  
*Biophysics*)  
Sung-Cheng (Henry) Huang, D.Sc. (*Nuclear Medicine*, *Biophysics*)  
Hooshang Kangaroo, M.D. (*Diagnostic Radiology*;  
*Distinguished Teaching Award*), *Executive Chair*  
John C. Mazziotta, M.D., Ph.D. (*Nuclear Medicine*)  
William H. McBride, D.Sc. (*Radiation Oncology*)  
Michael E. Phelps, Ph.D. (*Nuclear Medicine*;  
*Jennifer Jones Simon Professor of Biophysics*)  
Heinrich R. Schelbert, M.D., Ph.D. (*Nuclear Medicine*)  
James B. Smathers, Ph.D.  
Milo M. Webber, M.D., LL.B. (*Nuclear Medicine*)  
H. Rodney Withers, M.D., D.Sc.  
Leslie R. Bennett, M.D., *Emeritus*  
Moses A. Greenfield, Ph.D., *Emeritus, Biomedical Physics Program Acting Director*  
Norman S. MacDonald, Ph.D., *Emeritus*  
Amos Norman, Ph.D., *Emeritus*  
Gabriel H. Wilson, M.D., *Emeritus*

### Associate Professors

Denis B. Buxton, Ph.D., *in Residence (Nuclear Medicine)*  
James D. Collins, M.D. (*Diagnostic Radiology*)  
Nagichettiar Satyamurthy, Ph.D., *in Residence (Nuclear Medicine)*

### Assistant Professors

Kelby K. Chan, Ph.D., *in Residence (Diagnostic Radiology)*  
Simon R. Cherry, Ph.D. (*Biophysics*)  
Magnus Dahlbom, Ph.D., *in Residence (Nuclear Medicine)*  
Kuo Ting (Bruce) Ho, Ph.D., *in Residence (Medical Imaging)*  
Robert S. Lavey, M.D., M.P.H.  
William P. Melega, Ph.D., *in Residence (Biophysics)*  
Maribeth A. Raines, Ph.D., *in Residence*  
Shantanu Sinha, Ph.D., *in Residence (Medical Imaging)*  
Ricky Taira, Ph.D., *in Residence (Medical Imaging)*

### Lecturers

Lan H. Kobe, M.S.  
Nancy M. McCreary, M.S.  
Marilyn C. Wexler, M.S.

### Adjunct Professors

L. Stephen Graham, Ph.D. (*Nuclear Medicine*)  
F. Eugene Holly, Ph.D.

### Adjunct and Clinical Associate Professors

Robert F. Ackermann, Ph.D., *Adjunct (Nuclear Medicine, Biophysics)*  
Steven J. Goetsch, Ph.D., *Clinical*  
Martin W. Herman, Ph.D., *Adjunct (Diagnostic Radiology)*  
Carolyn Kimme-Smith, Ph.D., *Adjunct (Diagnostic Radiology)*  
Nicholas J. Mankovich, Ph.D., *Adjunct (Medical Imaging)*  
James W. Sayre, Dr.P.H., *Adjunct*  
Lawrence E. Williams, Ph.D., *Adjunct (Medical Imaging)*

### Adjunct Assistant Professors

Guido Germano, Ph.D. (*Medical Imaging*)  
Hazel L. Lewis, Ph.D.  
James C. Liu, Ph.D.  
David Metcalf, Ph.D.  
Peter J. Rosemark, Ph.D.  
Usha Sinha, Ph.D. (*Medical Imaging*)  
Robert E. Wallace, Ph.D.  
James S. Whiting, Ph.D. (*Medical Imaging*)

### Scope and Objectives

The biomedical physics graduate program in the Department of Radiological Sciences offers training in four specialties: biophysics, medical imaging, medical physics, and radiation biology. Specialized facilities for training and research are available in the departmental clinical laboratories, the Laboratory of Biomedical and Environmental Sciences, the Image Processing Laboratory, and a number of associated hospitals. Highly specialized equipment includes the biomedical cyclotron, the radiation oncology cyclotron, the picture archiving and communication system (PACS), the positron emission tomography (PET) scanners, the stereotactic gamma irradiator, and many VAX and SUN computers with image processor systems. Students are trained to work both as professional medical physicists and as independent investigators.

Graduates in biomedical physics can expect to engage in any combination of clinical service, consultation, research, and teaching. Biomedical physicists are usually employed in hospitals frequently associated with a medical school, where they are members of the academic staff. They are also in demand in high-technology private industry engaging in research and development of diagnostic equipment. In government agencies, biomedical physicists are involved in the formulation and enforcement of regulations applied to the use of radiation in health care delivery.

### Requirements for Graduate Degrees

#### Admission

In addition to the University's minimum requirements, candidates for admission are required to have a bachelor's degree with a major in a science. Also, it is expected that all applicants will have had (1) one year of college physics (calculus-based), plus the equivalent of Physics 8E, (2) two years of college mathematics (through differential equations), equivalent to Mathematics 31A, 31B, 32A, 32B, 33A, 33B, (3) one year of college chemistry and one term of biochemistry, (4) one course each in anatomy and physiology, (5) at least one computer science course, and (6) one statistics course. Deficiencies in the above courses must be removed prior to advancement to candidacy.

Scores from the Graduate Record Examination (GRE) General Test, taken in the last three years, should be sent to the department. Three letters of recommendation are required. If you already have a master's degree, one of the letters should be from your adviser.

A brochure describing the program in biomedical physics may be obtained from the Department of Radiological Sciences, Biomedical Physics Graduate Program, 1V-365 CHS, UCLA, Los Angeles, CA 90024-1721.

## Master of Science in Biomedical Physics

### Course Requirements

A minimum of 17 courses, including eight core courses (Radiological Sciences 200A, 204, 205, 216, 217, 218, 260A, 260B) and elective courses as directed by the graduate adviser, are required for the M.S. degree.

For students with a medical physics background or a career objective other than a practicing medical physicist, a more sharply focused curriculum may be advised.

Courses 596 and 598 may be applied toward the degree. Eight units of 500-series courses may be applied toward the total course requirement, four units toward the minimum graduate course requirement.

### Thesis or Comprehensive Examination Plan

You are required to write a thesis (Plan I) based on a research project or to pass a comprehensive examination (Plan II) consisting of material selected from the core courses. The examination is offered at least once a year and may be repeated once.

If you plan to continue on the Ph.D. track, you may request approval from your faculty adviser to use the Ph.D. written qualifying examination to satisfy the Plan II comprehensive examination requirement. You could then receive the M.S. degree in addition to the Ph.D.

## Ph.D. in Biomedical Physics

### Admission

Admission to the doctoral program requires (1) selecting a specialty, (2) passing either all of the core courses with grades of B or better or the M.S. comprehensive examination, and (3) passing a written specialty qualifying examination which may be repeated once. Completion of a master's program is not required.

### Qualifying Examinations

The qualifying examination for admission to the Ph.D. program should be taken by the end of your sixth term in residence. Once the qualifying examination is passed and you have selected a research topic in your specialty for the

dissertation, you should, within a reasonable time frame agreed on with the dissertation adviser, form a doctoral committee and schedule the University Oral Qualifying Examination. This examination covers your mastery of the biomedical physics curriculum, particularly the areas of the proposed dissertation topic.

If you do not complete the dissertation within four years after taking the written qualifying examination, you may be required to take it again.

### Final Oral Examination

The final oral examination, or dissertation defense, is required.

## Upper Division Course

**199. Directed Individual Studies or Research for Undergraduate Students (2 to 4 units).** Prerequisite: consent of graduate adviser (based on written proposal outlining course of study or research). Directed individual studies in biomedical physics for undergraduate students to be structured by faculty member and student at time of initial enrollment.

Mr. Norman (F,W,Sp)

## Graduate Courses

**200A. Physics and Chemistry of Nuclear Medicine.** Lecture, one hour; laboratory, three hours. Prerequisite: consent of instructor. Nuclear structure, statistics of radioactive decay, nuclear radiations and their interaction with matter, nuclear decay processes, nuclear reactions, and compartment models. Physical and chemical properties of radioactive preparations used in nuclear medicine.

Mr. Hoffman (F)

**200B. Nuclear Medicine Instrumentation.** Lecture, one hour; laboratory, three hours. Prerequisite: course 200A. Introduction to nuclear medicine instrumentation, including well ionization chambers, probe and well scintillation detectors, scintillation cameras, and single photon emission computed tomography.

Mr. Graham (W)

**201. Medical Radiation Accelerator Design.** Lecture, three hours. Prerequisite: course 216 or consent of instructor. Overview of physical principles involved in design of current particle accelerators (electron, proton, heavy particle) and analysis of characteristics of current accelerators and facility design.

Mr. Wallace (Sp)

**202A-202B-202C. Applications of Medical Physics to Clinical Problems.** Selected studies in clinical use of radioisotopes:

**202A. Nuclear Medicine.** Prerequisite: course 200B or consent of instructor. (F,W,Sp)

**202B. Diagnostic Radiology.** Prerequisites: courses 200A, 205, and 208A-208B, or consent of instructor. (F,W,Sp)

**202C. Radiation Therapy.** Prerequisites: courses 203, 204, 207, and 208A-208B, or consent of instructor. (F,W,Sp)

**203. Physics of Radiation Therapy.** Prerequisite: course 216 or consent of instructor. Radiation quantities and units. Radiation dosimetry, clinical applications in treatment planning. Methods of measuring radiation quantities. Calibration of radiation therapy equipment.

Mr. Smathers (Sp)

**204. Introductory Radiation Biology.** Effect of ionizing radiation on chemical and biological systems.

Mr. McBride (W)

**205. Physics of Diagnostic Radiology.** Production of X rays, basic interactions between X rays and matter, X-ray system components, physical principles of medical radiography, radiographic image quality, fluoroscopy, image intensifiers, special procedures, X-ray protection. Laboratory experiments illustrate basic theory.

Mr. Taira (F)

**206. Advanced Instrumentation.** Prerequisites: courses 205, 209, 210. Introduction to recent advances in digital diagnostic imaging systems, with topics centered on instrumentation in magnetic resonance imaging (MRI), computed tomography (CT), digital radiography (DR), and picture archiving and communication systems (PACS).

Mr. Ho (Sp)

**207. Dosimetry and Health Physics.** Lecture, three hours. Prerequisite: consent of instructor. Dosimetry of ionizing radiation, concepts in radiation protection, recommendation of national council on radiation protection and measurements, maximum permissible dose levels. Shielding calculations. Layout and design of radiographic installation. (F)

**208A-208B. Medical Physics Laboratory.** Hands-on techniques for measuring ionizing and nonionizing radiation. **208A.** Prerequisite or corequisite: course 205. Fluoro CT, MR, DSA, linear tomography, ultrasound, mammography, diagnostic shielding. **208B.** Prerequisite or corequisite: course 203. Therapy calibration.

Mr. Herman, Ms. Kimme-Smith (W, 208A; Sp, 208B)

**209. Digital Techniques in Radiological Sciences.** Lecture, three hours; laboratory, one hour. Prerequisites: one course in FORTRAN or another computer language, consent of instructor. Basic principles of digital technology used in radiological sciences. Concepts and experience necessary to undertake radiological research in a diverse computing environment. Discussion of relationship between computers and diagnostic equipment with regard to data acquisition, equipment interfacing, and data analysis.

Mr. Stewart (F)

**210. Principles of Medical Imaging.** Prerequisites: courses 205, 209. Review of Fourier analysis measurement of LSF and MTF. Radiographic mottle and the Wiener spectrum. Physics, mathematics, and engineering of imaging devices in conventional radiography, computerized tomography, ultrasound, and nuclear medicine. Detection of faint shadows, ROC curve. (W)

**211. Medical Ultrasound.** Lecture, 90 minutes; laboratory, two hours. Prerequisite: at least one calculus course; for non-Radiological Sciences Department students: consent of instructor. Calibration of ultrasound medical imaging equipment, evaluation of new instrumentation, and introduction to ultrasound research.

Ms. Kimme-Smith (Sp)

**212. Biochemical Basis of Positron Emission Tomography (PET).** Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Introduction to biochemical processes and application of radioisotopes to study metabolism noninvasively by positron emission tomography (PET). Validation of kinetic models to derive quantitative information from PET. Introduction to clinical and experimental application of PET.

Mr. Buxton (F)

**213. Quantitative Autoradiography.** Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Application of quantitative autoradiography for estimating brain and heart functions. Topics include 2-deoxyglucose method for metabolic rate; iodoantipyrine method for blood flow; amino acid method for protein synthesis; quantitative receptor autoradiography; neuroanatomy and neurophysiology of autoradiogram and PET scan interpretation.

Mr. Ackermann (Sp)

**214. Medical Image Processing Systems.** Prerequisites: courses 209, 210, consent of instructor. Architecture, design, and programming of medical image processing systems. Use and development of benchmark programs to evaluate performance of image processing systems. Provides experience with at least five different image processing systems.

(Sp)

**215. Breast Imaging Physics and Instrumentation.** Lecture, three hours; laboratory, two hours. Prerequisite: consent of instructor. Advanced clinical imaging techniques in mammography, including X-ray generators, tubes, resolution and contrast requirements, breast ultrasound, and digital units. Quality control and dose measurements on dedicated, recently manufactured equipment.

Ms. Kimme-Smith (F)

**216. Fundamentals of Dosimetry.** Lecture, three hours; laboratory, one hour. Prerequisite: consent of instructor. Fundamentals of radiation interaction with matter. Cavity theory. Radiation measurement and instrumentation. Basic accelerators and radiation sources.

Mr. Smathers (W)

**217. Statistics and Data Analysis in Biomedical Physics.** Lecture, three hours; laboratory, two hours. Prerequisites: Mathematics 31A, 31B, 32A, 32B, 33A, 33B. Introduction to computer-based statistical concepts, data analysis, and experimental design within biomedical physics research. Standard statistical packages and various statistical computing algorithms on relevant data sets within the radiological sciences.

Mr. Sayre

**218. Radiologic Functional Anatomy.** Lecture, three hours; discussion, two hours. Prerequisite: consent of instructor. Introduction to human anatomy as visualized through radiological and nuclear medicine imaging modalities such as X ray, CT, MRI, sonogram, PET, and SPECT.

Ms. Chugani

**219. Principles and Applications of Magnetic Resonance Imaging.** Lecture, three hours; laboratory, one hour. Prerequisite: consent of instructor. Basic principles of magnetic resonance (MR), imaging physics, and contrast mechanisms. Emphasis on hardware, Fourier transform imaging methods, structure of pulse sequences, various scanning parameters and reduction of artifacts. Introduction to MR spectroscopy, MR angiography, and fast imaging techniques.

Mr. Sinha

**220A-220D. Laboratory Rotations in Biomedical Physics (2 units each).** Prerequisite: consent of instructor. Laboratory projects to provide students with introduction to the field. One oral and one written presentation required. S/U grading. **220A.** Biophysics; **220B.** Medical Imaging; **220C.** Therapeutic Medical Physics; **220D.** Radiation Biology and Experimental Radiation Therapy.

**221. Applied Health Physics.** Prerequisite: consent of instructor. Basics of radiation safety as they relate to medical applications. Introduction to all regulatory issues pertaining to medical uses of radioactivity.

Mr. Goetsch, Mr. Holly, Mr. Smathers

**M230. Computed Tomography: Theory and Applications.** (Same as Biomathematics M230.) Prerequisite: consent of instructor. Computed tomography is a three-dimensional imaging technique being widely used in radiology and is becoming an active research area in biomedicine. Basic principles of computed tomography (CT), various reconstruction algorithms, special characteristics of CT, physics in CT, and various biomedical applications.

Mr. Huang (W)

**M233. Principles, Practices, and Policies in Biotechnology (2 units).** (Same as Biological Chemistry M233, Biology M233, Chemical Engineering M233, Chemistry M233, Microbiology M233, and Microbiology and Immunology M233.) Prerequisite: graduate standing or consent of instructor. Presentation of technologies, regulatory practices, and policies required for product development and review of current opportunities for new technology development. Topics include fermentation processes, pilot and large-scale bioprocess technologies, scaleup strategies, industrial recombinant DNA processes, hybridomas, protein engineering, peptide mimetics and rational drug design, medical and microscopic imaging, and intellectual property issues. S/U or letter grading.

Mr. Fox, Ms. Morrison

**260A-260B-260C. Seminars: Medical Physics (2 units each).** Joint critical study by students and instructors of fields of knowledge pertaining to medical physics. Periodic contributions made by visiting scientists. Discussion of research in progress. May be repeated.

(W,Sp)

**266A-266B-266C. Seminars: Nuclear Medicine (2 units each).** Topics of current interest in nuclear medicine. Intended for physicians, radiation physicists, and graduate students. S/U grading.

(F,W,Sp)

**268. Radiopharmaceutical Chemistry.** Lecture, two hours; discussion, two hours. Biochemical principles of radiopharmaceutical design, utilization, and synthesis, with emphasis on positron-emitting labeled radiopharmaceuticals for PET. Application of radiopharmaceuticals to in vivo quantitative estimation of biochemical and pharmacological parameters in humans with PET (i.e., membrane transport, metabolism, biosynthesis, and neurotransmission).

Mr. Barrio (Sp)

**269. Seminar: Medical Imaging (1 unit).** Prerequisite: consent of instructor. Continuous registration required of students in medical imaging specialty. Topics of current interest in medical imaging, with lecturers from the department, other universities, and private industry.

(F,W,Sp)

**495. Special Studies in Biomedical Physics.** Discussion, two hours; laboratory, four hours. Prerequisite: consent of instructor. Teaching assistance in graduate laboratory courses under supervision of a faculty member. S/U grading.

**596. Research in Biomedical Physics (4 to 12 units).** Directed individual study or research. Only one 596 course may be applied toward M.S. degree requirements. May be repeated for credit.

**597. Preparation for Ph.D. Qualifying Examinations.** May not be applied toward M.S. degree requirements. May not be repeated. S/U grading.

**598. Research for and Preparation of M.S. Thesis (4 to 12 units).** Two 598 courses (or 598 and 596 combined) may be applied toward M.S. degree requirements. May be repeated. S/U grading.

**599. Research for Ph.D. Dissertation (4 to 12 units).** Prerequisite: successful completion of screening examinations. Research for and preparation of Ph.D. dissertation. May be repeated. S/U grading.

## Surgery

72-131 Center for the Health Sciences, (310) 825-7017

### Executive Chair

Michael J. Zinner, M.D. (*William P. Longmire, Jr., Distinguished Professor of Surgery*)

### Executive Vice Chair

J. Thomas Rosenthal, M.D.

### Vice Chairs

J. Dennis Baker, M.D., *Acting (Sepulveda VA)*  
Rinaldo F. Canalis, M.D., *Acting (Harbor-UCLA)*  
Leonard Makowka, M.D. (*Cedars-Sinai*)  
Edward P. Passaro, Jr., M.D. (*Wadsworth VA*)  
Jesse E. Thompson, Jr., M.D. (*Olive View-UCLA*)

## Scope and Objectives

The Department of Surgery instructs medical students during all four years of medical school. Students are expected to obtain broad knowledge of diseases treated by surgical means and to understand the pathology of these conditions, the therapy that may be applied, and the anticipated results of treatment. They are also encouraged to learn about the impact of surgical illness on the patient and the patient's family and environment.

Third-year students participate in a 12-week core clerkship in clinical surgery, assigned to either Harbor-UCLA Medical Center or a combination of UCLA, Wadsworth VA, and Olive View-UCLA Medical Centers. Each facility has a special orientation depending on the patient population and the individual staff. During the fourth year students may elect to take additional clinical rotations with increasing responsibilities. Additional in-depth elective courses are offered in collaboration with other departments.

For further details on the Department of Surgery and a listing of the courses offered, see the *Announcement of the UCLA School of Medicine*.

## Upper Division Course

**199. Special Studies (2 to 8 units).** Prerequisite: consent of instructor. Individual projects carried out under direction of a faculty member. Special studies in surgery, with appropriate objectives, readings, laboratory work, or other assignments designed for proper training of students. P/NP or letter grading.



# School of Nursing

Ada M. Lindsey, Dean



# 17

The excellent reputation of the UCLA School of Nursing has been achieved by the faculty, students, and graduates. The school is recognized nationally and internationally for the quality of the undergraduate and graduate programs.

Faculty members are selected for their expertise, both in clinical areas of specialization and in research, and for their ability to transmit knowledge. In addition, highly skilled nurses practicing in many clinical settings are affiliated with the school and participate in the educational process.

In the curriculum, strong emphasis is placed on clinical competency and research. Faculty members are particularly cognizant of the needs of patients who represent a broad ethnic, racial, and cultural spectrum and have provided an emphasis on cultural diversity within the curricula. The School of Nursing has especially good technological support established to enhance learning; for example, computer, media, and print resources are available for student use and are integral to the environment.

Students are selected for their capabilities, background, and potential for contributions to the profession and are prepared as highly competent professional nurses. Alumni are employed successfully at all levels in many settings and in different geographical areas.

The school offers outstanding educational opportunities. Faculty, staff, and administration are proud of the accomplishments and recognition of the school and its graduates. The school continues to be in the forefront in preparing the future leaders in nursing.

# School of Nursing

2-200 Factor Building, (310) 825-7181

## Professors

Betty L. Chang, R.N., D.N.Sc., F.A.A.N.  
 Kathleen A. Dracup, R.N., D.N.Sc., F.A.A.N.  
 Jacquelyn H. Flaskerud, R.N., Ph.D., F.A.A.N.,  
*Associate Dean for Academic Affairs*  
 Charles E. Lewis, M.D., Sc.D.  
 Mary A. Lewis, R.N., Dr.P.H.  
 Ada M. Lindsey, R.N., Ph.D., F.A.A.N., *Dean*  
 Geraldine V. Padilla, Ph.D., *Associate Dean for Research*  
 Sharon J. Reeder, R.N., Ph.D., F.A.A.N.  
 Maria W. Seraydarian, Ph.D.  
 Gwen M. van Servellen, R.N., Ph.D., F.A.A.N.  
 Donna L. Vredevoe, Ph.D.  
 Lulu Wolf Hassenplug, R.N., M.P.H., Sc.D., F.A.A.N.,  
*Dean Emerita*  
 Dorothy E. Johnson, R.N., M.P.H., *Emerita*  
 Harriet C. Moidel, R.N., M.A., *Emerita*

## Associate Professors

Deborah Koniak-Griffin, R.N., Ed.D.  
 Susan M. Ludington, R.N., C.N.M., Ph.D.  
 Adeline M. Nyamathi, R.N., Ph.D., F.A.A.N.  
 Donna F. Ver Steeg, R.N., Ph.D., F.A.A.N.  
 Agnes A. O'Leary, R.N., M.P.H., *Emerita*  
 Phyllis A. Putnam, R.N., Ph.D., *Emerita*

## Assistant Professors

Nancy L.R. Anderson, R.N., Ph.D.  
 Linda K. Glazner, R.N., Dr.P.H.  
 Mary M. Gottesman, R.N., Ph.D.  
 Christine E. Kasper, R.N., Ph.D.  
 Colleen K. Keenan, R.N., Ph.D.  
 Jan L. Lee, R.N., Ph.D.  
 Leslie L. McCombs, R.N., Ph.D.  
 Debra K. Moser, R.N., D.N.Sc.  
 Linda P. Sarna, R.N., D.N.Sc.  
 Anne K. Wuerker, R.N., Ph.D.  
 Lina K. Zahr, R.N., D.N.Sc.  
 Olive Y. Burner, R.N., Ph.D., *Emerita*  
 Barbara A. Davis, R.N., Ed.D., F.A.A.N., *Emerita*

## Lecturers

Feryl C. Barnett, R.N., Ph.D.  
 Karen K. Braham, R.N., M.N.  
 Sharon P. Brown, R.N., M.N.  
 Barbara E. Carey, R.N., M.N.  
 Ernestine B. Currier, R.N., M.S.  
 Bonnie L. Faherty, R.N., Ph.D.  
 Jan M. Fredrickson, R.N., M.N.  
 Carol L. Gemberling, R.N., M.N.  
 Barbara B. Gray, R.N., M.N.  
 Roberta O. Hallinan, R.N., M.S.N.  
 Virginia Hart-Kepler, R.N., M.N.  
 Deborah A. Jenkinson, R.N., M.N.  
 Donna K. McNeese-Smith, R.N., Ed.D.  
 Ronda D. Mintz-Binder, R.N., M.N.  
 Judy M. Newman, R.N., M.N.  
 Susan R. Opas, R.N., M.S.N.  
 Deborah A. Rice, R.N., M.N.  
 Mary M. Wilson, R.N., M.N.

## Adjunct Associate Professor

Frances M. Wiley, R.N., M.N.

The UCLA School of Nursing gives direction to interested potential applicants through monthly open counseling sessions. If you are interested in the academic programs offered, you are urged to attend a counseling session or request a copy of the *Announcement of the UCLA School of Nursing* by writing to the Student Affairs Office, School of Nursing, 2-200 Factor Building, UCLA, Los Angeles, CA 90024-1702 (310-825-7181).

## History and Accreditation

In 1949 The Regents of the University authorized the School of Nursing as one of the professional schools of the UCLA Center for the Health Sciences. This action paved the way for the development of an undergraduate basic program in nursing leading to the Bachelor of Science degree and made possible the establishment of a graduate program leading to the Master of Science degree. In 1965 the Master of Nursing degree was established as an alternate option to the M.S. degree. The Master of Science degree program was discontinued in 1971. The Regents approved the Doctor of Nursing Science degree program in 1986, and in Fall Quarter 1987 the first doctoral students were admitted.

The baccalaureate program has been continuously approved by the California Board of Registered Nursing since 1949. The School of Nursing became an agency member of the Department of Baccalaureate and Higher Degree Programs of the National League for Nursing in 1952. The Accrediting Service of the National League for Nursing has granted full accreditation to the programs since 1954.

## Degrees Offered

Bachelor of Science (B.S.)  
 Master of Nursing (M.N.)  
 Doctor of Nursing Science (D.N.Sc.)

## Bachelor of Science Degree

The baccalaureate program leading to the Bachelor of Science degree provides for a close interweaving of general and professional education. The physical, social, and emotional health aspects of nursing are emphasized throughout the curriculum. Clinical nursing ex-

perience under the guidance of faculty members is provided in hospitals, outpatient clinics, homes, and community health centers.

Credit by examination is available to qualified students on review of previous education.

## Admission

The School of Nursing strives to attain a culturally and ethnically diverse student population. Admission, beginning in the junior year, is based on scholarship, diverse life experiences, and disadvantage. You must have completed a minimum of 84 quarter units, with grades of C or better in prerequisite courses and an overall grade-point average of 2.8 or better. Three letters of recommendation are also required. Diverse life experiences, including previous employment, volunteer work, and community service which reflect leadership, responsibility, multicultural involvement, multi-lingual abilities, and other unusual skills and knowledge are evaluated. Consideration is also given to social and economic disadvantage such as educational background, heavy work schedule during school, housing conditions, family responsibilities, and mastery of physical handicaps. Completed applications should reflect clearly identified career goals and documentation of your potential in nursing.

Applications for acceptance to the baccalaureate program must be filed no later than November 30 for the next Fall Quarter. The School of Nursing admits 40 students each Fall Quarter. In addition to the regular *UC Application for Undergraduate Admission and Scholarships* which must be returned in the self-addressed envelope included in the packet, an application must be filed with the school by November 30. This application is available directly from the Student Affairs Office, School of Nursing, 2-200 Factor Building, UCLA, Los Angeles, CA 90024-1702.

You can find a discussion of the pre-nursing curriculum and prehealth advising in "Preparing for a Professional School" in Chapter 5.

## Degree Requirements

The Bachelor of Science degree is granted on fulfillment of the following requirements.

(1) You must complete 44 required courses (191 quarter units; unit value of courses ranges from two to eight units) of college work and satisfy the general University requirements.

(2) Of the required 44 courses, at least 20 courses must be in general education, including the courses listed under the "Prenursing Curriculum" in Chapter 5 on the College of Letters and Science.

(3) You must complete at least 24 courses (107 quarter units) of upper division coursework toward the degree, including Nursing 101, 104A, 104B, 105, 109, M115, 120A through 120E, 120G, 184, one course from 190A through 190E, 190F, 192, 193, 195, four electives, Biostatistics 100A, Epidemiology 100.

(4) You must maintain an overall grade-point average of C (2.0) or better in all courses taken while a student in the School of Nursing.

(5) You must complete all required nursing courses in the school and receive grades of C or better in the following courses: Nursing 101, 105, 109, 120A through 120E, 120G, one course from 190A through 190E, 190F.

(6) You must be enrolled in the School of Nursing during your final three terms in residence; the last nine courses must be completed while so enrolled.

**Study Lists** — You may not enroll in more than four courses per term unless a petition is approved in advance by the assistant dean.

## Honors

### Dean's Honors

Dean's Honors are awarded annually to undergraduate students completing the academic year with distinction. To be eligible you must achieve an overall grade-point average of 3.75 on a minimum of 36 graded units of work completed during the academic year.

### Honors at Graduation

Honors are awarded at graduation to students with a superior overall grade-point average. The levels of honors and the requirements for each level are: *summa cum laude*, an overall average of 3.85; *magna cum laude*, 3.65; *cum laude*, 3.5. To be eligible you must have completed at least 98 University of California units for a letter grade.

### School of Nursing Faculty Award

The Faculty Award for excellence in nursing, established in 1965, is awarded to a student graduating from the bachelor's and the master's program with the highest grade-point average in all nursing courses.

## Master of Nursing Degree

In the Master of Nursing (M.N.) degree program, students contribute to improving nursing care through the application of advanced knowledge in nursing research, theory, and clinical practice. Throughout the program, the structure for nurse/client relationships and research is provided by the nursing process. This is a deliberative problem-solving activity which includes assessment,

diagnosis, intervention, and evaluation. In addition to their clinical specialization sequence, students may elect courses in teaching, consultation, and/or administration as preparation to meet their specific career goals.

## Admission

You must provide evidence of the following:

(1) Graduation from a recognized college or university having a National League for Nursing-accredited baccalaureate nursing program satisfactory to the School of Nursing and to the Graduate Division OR

Graduation with a baccalaureate degree in nursing from an international institution with a nursing program satisfactory to the School of Nursing and to the Graduate Division. You may be required to enroll in certain undergraduate nursing courses which generally may not be applied toward requirements for advanced degrees OR

Registered nurse with a baccalaureate degree in a health-related field. You may be required to enroll in certain undergraduate nursing courses which generally may not be applied toward requirements for advanced degrees.

(2) Status as a licensed registered nurse in the State of California.

(3) An upper division statistics course or a lower division statistics course with content equivalent to Biostatistics 100A, to be completed before entering the school.

(4) An upper division nursing research course taken at an NLN-accredited institution and equivalent to Nursing 193, to be completed before entering the school.

(5) An upper division physical assessment course equivalent to Nursing 192, to be completed before entering the school.

(6) Professional and/or academic competence in nursing attested through three letters of recommendation.

(7) A scholarship record satisfactory to the Graduate Division and to the School of Nursing.

(8) A minimum score of 550 on the Test of English as a Foreign Language (TOEFL) for applicants from foreign countries in which English is not the primary language and medium of instruction, whether licensed registered nurses in the U.S. or not (scores must be submitted prior to consideration for admission). Refer to "Proficiency in English" under "Graduate Admission" in Chapter 3 for further information.

(9) A passing score on the Commission on Graduates of Foreign Nursing Schools (CGFNS) examination for international applicants who are not licensed registered nurses in the U.S., prior to consideration for admission.

In addition to the Graduate Division application, you must file the *Application for Admission to the School of Nursing*, available

through the Student Affairs Office, School of Nursing, 2-200 Factor Building, UCLA, Los Angeles, CA 90024-1702. The application deadline for Fall Quarter is March 15. For information on admission to graduate standing, see Chapter 3.

## Major Fields or Subdisciplines

The School of Nursing offers graduate studies in the following areas.

### Maternal-Child Health/Primary Ambulatory Care Section

Nurse Practitioner Specialty

Family

Gerontology

Occupational Health

Maternity Clinical Nursing Specialty

Neonatal Critical Care Nurse Practitioner

Pediatrics Clinical Nursing Specialty

### Medical-Surgical/Physiological Nursing Section

Medical-Surgical Nursing Specialty

Cardiopulmonary

Chronic Care

Critical Care

Oncology

### Psychiatric-Mental Health/Nursing Administration Section

Nursing Administration Specialty

Psychiatric-Mental Health Nursing Specialty

## Degree Requirements

(1) A minimum of six core courses (18 units; unit value of courses ranges from two to four units) and additional coursework in the 100, 200, and 400 series is required for each area of clinical specialization. A total of eight units of 500-series courses may be applied toward the total course requirement for the degree.

(2) A minimum grade-point average of 3.0 is required. Grades of B are required in graduate clinical nursing courses in order to advance to the next clinical course in a series.

(3) A minimum of three terms of full-time enrollment (eight units per term) is required for academic residence.

(4) Successful completion of a comprehensive examination is required.

## Course Requirements

You must successfully complete the following:

(1) Core courses: (a) research in nursing (Nursing 204); (b) nursing theory, cultural diversity, and physiology (Nursing 203, 209A, 209B); (c) ethical and legal issues, management, education, and consultation (Nursing 220A, 220B and/or 220C and/or 220D).

(2) Clinical practice (Nursing 401, 402, 403, 405, 416, 417, 420A through 429C). Clinical course requirements vary for each specialty area; not all courses are required in each specialty.

(3) Clinical specialization.

Additional course requirements vary according to specialty area listed below.

### **Maternal-Child Health/Primary Ambulatory Care Section**

*Family Nurse Practitioner Specialty* — This specialty prepares family nurse practitioners to take a leadership role in the care of individuals throughout the life span. The focus is on collaborative practice to assure comprehensive quality health care and health maintenance in outpatient, work site, nursing home, or home health settings. Emphasis is on the assessment, treatment, and evaluation of the client's responses to actual or potential health problems which may be chronic or acute and include primary prevention. Special options are available in occupational health or gerontology, with additional coursework. Required courses include Nursing 203, 204, 209A, 209B, 220A, 220B, 264, 402, 429A-429B, 429C.

*Gerontology Nurse Practitioner* — Courses in the gerontology nurse practitioner option focus on the knowledge and skills needed for leadership roles in primary health care for older adults in ambulatory and long-term care facilities, at home, and in alternative settings. Required courses include those listed under the family nurse practitioner specialty above, Nursing 221, 425A.

*Occupational Health Nurse Practitioner* — This option integrates principles of occupational health assessment and care with primary ambulatory care of the adult. Practitioners evaluate the individual as seen within the work setting as well as within the family group. Primary focus and emphasis are on health status assessment, health promotion, illness/accident prevention, hazard control, screening, surveillance, and rehabilitation of adult workers.

Requirements are met through a combination of courses and experiences specific to the delivery of occupational health care services. Required courses include those listed under the family nurse practitioner specialty above, Nursing 412, Environmental Health Sciences 250, 251, Epidemiology 100.

*Maternity Clinical Nursing Specialty* — The goal of this specialty is to develop clinical specialists who take a leadership role in the nursing management of the childbearing family in all phases of the reproductive cycle. Students develop individualized plans of study to meet their personal and professional goals. Guided options include management of low-risk pregnancy, alternative birthing options, perinatal nursing, and basic neonatal intensive care. Required courses include Nursing 203, 204, 209A, 209B, 212, 220A, 220B, 223, 422A, 422B, 422C.

*Neonatal Critical Care Nurse Practitioner* — The primary goal of this option is the expansion of knowledge and clinical expertise necessary for neonatal critical care nurse practitioners. By combining newly learned physiological, de-

velopmental, and psychosocial knowledge, nurses can become highly skilled and caring practitioners for newborns. Two or more years of experience in a Level III nursery are highly recommended. Required courses include Nursing 203, 204, 209A, 209B, 212, 220A, 220B, 223, 264, 403, 420A, 420B, 420C.

*Pediatrics Clinical Nursing Specialty* — The goal of this specialty is to develop clinical specialists who take a leadership role in the nursing management of a selected group of neonates, children, and families. Guided options include neonates, children, and families experiencing acute/critical illness, chronic illness, developmental disabilities, or oncology. Required courses include Nursing 203, 204, 209A, 209B, 212, 220A, 220B, 223, 421A, 421B, 421C.

### **Medical-Surgical/Physiological Nursing Section**

*Medical-Surgical Nursing Specialty* — The graduate of the medical-surgical nursing program is a specialist who takes leadership in the care of one or more specific groups of clientele whose health problems may be classified according to biological systems, pathology, acuity levels, medical treatment modalities, physical functions, or psychophysiological functions. Graduate students choose from existing clinical options (i.e., cardiopulmonary, chronic care, critical care, and oncology), and within each option they develop individualized plans of study to meet personal and career objectives.

*Cardiopulmonary* — This option is designed to prepare clinical nurse specialists to meet an increasing demand for improved health services for patients with cardiopulmonary diseases. Several years of experience in acute coronary/pulmonary care settings (medical and/or surgical) and/or in cardiac/pulmonary rehabilitation are highly recommended before entering this option. Graduates are expected to function as cardiopulmonary nurse clinicians, teachers, consultants, or research associates. Required courses include Nursing 203, 204, 209A, 209B, 210, 211, 214, 215, 220A, 220B, 423A, 423B, 423C.

*Chronic Care* — This option enables clinical nurse specialists to gain advanced skills in the assessment and interpretation of patient data and in the care of clients and families during various points in the chronic illness trajectory. The role of clinical nurse specialists in leadership positions, case management, and on interdisciplinary teams is an integral part of the option. Graduates are expected to function as expert clinicians, teachers, consultants, or research associates in a variety of health care settings. Required courses include Nursing 203, 204, 209A, 209B, 220A, 220B, 232, 233, 423A, 423B, 423C.

*Critical Care* — The goal of this option is to prepare clinical nurse specialists in general critical care nursing. Students are encouraged to develop clinical focus in critical care. At least two

years of prior experience in critical care nursing are highly recommended. Graduates are expected to function as critical care clinicians, educators, consultants, or researchers and to become leaders in a variety of health care settings. Required courses include Nursing 203, 204, 209A, 209B, 216, 217, 220A, 220B, 423A, 423B, 423C.

*Oncology* — This option prepares oncology clinical nurse specialists to provide and direct nursing care for critically and chronically ill cancer patients and their families in a variety of settings and in all phases of the health/illness continuum (prevention, treatment, rehabilitation). Graduates are expected to function as educators and consultants in all aspects of nursing care to patients with cancer and their families, nurses, and others in the broad field of oncology. Critique and application of research findings to clinical cancer nursing care are integrated throughout the program. Individualized plans for clinical practicums are available. Required courses include Nursing 203, 204, 209A, 209B, 220A, 220B, 416, 417, 423A, 423B, 423C.

### **Psychiatric-Mental Health/Nursing Administration Section**

*Nursing Administration Specialty* — This option focuses on organizational theory, health services and financial management, and the practice of nursing administration. Students gain the basic knowledge and skills required of nursing administrators in a volatile health care environment. Nursing content develops the knowledge of advanced management practice needed to plan and evaluate nursing services. Health services and financial management content provides a framework for organizing, directing, and coordinating health care resources. The program requires six terms of full-time study, and a 10-week spring administrative residency. Stipends for the residency program are provided by the institutions in which the residency is completed.

In addition to the required courses in the School of Nursing, students in this program take courses in the School of Public Health, Department of Health Services, and the John E. Anderson Graduate School of Management. Required courses include Nursing 203, 204, 209A, 209B, 219, 220B, 428A, 428B, 428C, and three health services management/financial management courses (Management 409, Health Services 436, and one organizational theory course).

*Psychiatric-Mental Health Nursing Specialty* — The primary intent of this specialization is to prepare clinicians who can function in leadership, educational, research, practice, and consultative roles in mental health settings serving individuals, groups, and families from diverse cultural backgrounds. The specific bases for practice are theories and research on personality development, function and dysfunction, biopsychosocial theories of mental illness, and psychotherapeutic approaches to nursing assessment, diagnosis, and treatment of clients' responses to mental health problems.

This specialty prepares graduates for practice as mental health nurse counselors serving individuals, groups, and families with acute or chronic mental health problems. Students, in consultation with faculty members, select an area of focus among the following settings and/or populations: psychiatric or community mental health settings with adults or children, consultation liaison, or ethnic mental health. Required courses include Nursing 203, 204, 209A, 209B, 220A, 220B, 405, 424A, 424B, 424C.

### Comprehensive Examination Plan

The comprehensive examination is given in written form and is scheduled each term. You are eligible to take the examination during the term in which you are advanced to candidacy and may repeat the examination, in its entirety or in part, twice. You must complete all requirements for the degree within one calendar year after advancement to candidacy.

### Concurrent Degree Program

#### M.B.A./M.N.

The School of Nursing and the John E. Anderson Graduate School of Management offer a concurrent degree program designed for students interested in employment in all sectors of the health care delivery system, including hospitals, corporate health care headquarters, home health care agencies, and long-term care facilities, as well as policy-making bodies and consulting firms. Students must request application materials from both the M.B.A. Admissions Office, John E. Anderson Graduate School of Management, and the School of Nursing Student Affairs Office.

### Doctor of Nursing Science Degree

The Doctor of Nursing Science (D.N.Sc.) degree program is research oriented with a focus on clinical nursing research. The goal is the development of scholars who, through the conduct of original research and the generation of theory, will build the knowledge base for professional practice. The curriculum allows students to obtain the theoretical and scientific knowledge necessary for scholarly pursuit in nursing.

#### Admission

Priority is given to graduates of accredited master's degree programs in nursing. Individuals admitted to doctoral study with a bachelor's degree in nursing and a master's degree in a non-nursing field are required to make up clinical specialty deficiencies by taking clinical courses in one of the current master's clinical specialty programs. Such courses may be taken concurrently with doctoral courses. Individuals admitted to doctoral study with a bachelor's degree in nursing are required to complete a program of master's courses in nursing at UCLA as a prerequisite to entry into doctoral courses.

Applications are reviewed on an individual basis by the doctoral program committee. Applicants whose application materials indicate a high potential for success in the doctoral program are interviewed. Preference is given to applicants who demonstrate (1) capacity for original scholarship and nursing research as evidenced by prior publications, (2) consistent research objectives and career goals, (3) research objectives congruent with those of the faculty in the School of Nursing, and (4) scholarly verbal and written communication skills.

You must provide evidence of the following:

(1) A master's degree in nursing; a Bachelor of Science degree in Nursing and a master's degree in a non-nursing\* field; or a Bachelor of Science degree in Nursing\*. Degrees must be from a National League for Nursing-accredited program satisfactory to the School of Nursing and to the Graduate Division.

(2) A scholarship record satisfactory to the Graduate Division and to the School of Nursing, with a minimum grade-point average of 3.5.

(3) A combined verbal, quantitative, and analytic score of 1,500 on the Graduate Record Examination (GRE), taken within the past five years. Exceptions to this score may be considered when there is compelling evidence in other areas.

(4) An upper division statistics course with content equivalent to Biostatistics 100A, 100D, or Biomathematics 170A.

(5) A graduate nursing research course with content equivalent to Nursing 204.

(6) A graduate nursing theory course with content equivalent to Nursing 203.

(7) A minimum score of 550 on the Test of English as a Foreign Language (TOEFL) for applicants from foreign countries in which English is not the primary language and medium of instruction (scores must be submitted prior to consideration for admission). Refer to "Proficiency in English" under "Graduate Admission" in Chapter 3 for further information.

(8) A passing score on the nursing and English portions of the Commission on Graduates of Foreign Nursing Schools (CGFNS) examination for international applicants who are not licensed as registered nurses in the U.S., prior to consideration for admission.

(9) Status as a licensed registered nurse; prior to entry into any clinical practicum, evidence of current licensure as a registered nurse in the State of California is mandatory.

(10) Four letters of reference affirming your potential for scholarly, investigative, and creative endeavors in nursing.

(11) Examples of scholarly papers and/or creative works.

(12) A statement of educational objectives, specific focus of research, and program and career goals.

(13) Curriculum vitae.

In addition to the Graduate Division application, you must file the *Application for Admission to the School of Nursing*, available through the Student Affairs Office, School of Nursing, 2-200 Factor Building, UCLA, Los Angeles, CA 90024-1702. Application deadlines for Fall Quarter are December 15 (priority) and February 1 (final). For information on admission to graduate standing, see Chapter 3.

### Areas of Study

Students in the doctoral program focus their study in one of three areas: (1) *sociocultural diversity* — formulation, investigation, and evaluation of social and cultural similarities and differences that influence the perceptions of health and illness, the treatment of illness, and the utilization of health services; (2) *psychophysical environment* — formulation, analysis, and investigation of the effects of the psychological and physical environments (both internal and external) on health/illness states, on cooperation with treatment regimens, and on preventing hospitalization and rehospitalization; (3) *health/illness continuum* — formulation, analysis, and evaluation of measures to enhance the patient's ability to promote, maintain, or regain health states and to combat illness states.

### Degree Requirements

You must meet the University minimum standards for doctoral degrees. School of Nursing requirements are as follows:

(1) Completion of core and cognate courses required for your area of focus.

(2) Successful completion of a written qualifying examination and the University Oral Qualifying Examination.

(3) Completion of a dissertation.

(4) Successful oral dissertation defense.

### Course Requirements

#### Core Courses

The following core courses are required of all students in the program:

(1) Nursing science (Nursing 202, 206A-206B).

(2) Nursing research (Nursing 207, 208, 299A, 299B-299D).

(3) One statistics sequence (Biostatistics 251, or Psychology 252A and 253, or Sociology 210A-210B, or equivalent, subject to approval of your faculty adviser and the doctoral program committee chair).

(4) One major area of study course (Nursing 226 or 227 or 228).

\*Students who are accepted with deficiencies are required to complete appropriate master's courses.

## Cognate Courses

A minimum of 24 units of cognate courses relevant to your major area of study (*sociocultural diversity, psychophysical environment, or health/illness continuum*) is required and must be approved by your adviser and the doctoral program committee.

## Qualifying Examinations

The written qualifying examination must be passed after completion of the basic core courses. The examination evaluates three areas of knowledge: the basic concepts of nursing science, nursing research methods and analysis, and the basic concepts of your selected area of study. Normally no more than one reexamination is permitted.

The University Oral Qualifying Examination, taken after completing the course requirements, evaluates your dissertation proposal. You are responsible for obtaining the consent of faculty members to serve on your doctoral committee.

After passing the University Oral Qualifying Examination, you may apply for advancement to candidacy. Formal notice is contingent on approval by the chair of the doctoral committee and the dean of the Graduate Division.

## Final Oral Examination

When the dissertation is completed and approved by all committee members, a meeting for oral defense, which may be open to the public, is scheduled. All members of the committee, both certifying and noncertifying, must be present. You are expected to respond to any substantive and/or methodological questions raised during the meeting.

## Upper Division Courses

**101. Introduction to Art and Science of Nursing (8 units).** Lecture, four hours; laboratory, 12 hours; autotutorial laboratory, variable. Introduction to nursing theory and practice. Content includes the following modules: nursing process, pharmacology, interpersonal and technical skills. Methodology includes laboratory, lectures, autotutorial laboratory, and clinical application. Ms. Currier and the Staff

**104A. Behavior of Man in Health and Illness (2 units).** Prerequisite: consent of instructor. Limited to nursing students. Examination of health/illness continuum from framework of social and biological sciences. Content includes role theory, developmental theory, transcultural communication theory, and other theories relevant to nursing practice. Ms. Mintz-Binder (F)

**104B. Behavior of Man in Health and Illness.** Lecture, two hours; discussion, two hours. Prerequisite: course 104A. Examination of health/illness continuum from framework of illness as a stressor and possible responses to such stress. Content includes anxiety, pain, cognitive disturbances, loss, and other responses relevant to nursing practice. Ms. Mintz-Binder (W)

**105. Human Physiology.** (Formerly numbered M105.) Lecture, four hours; discussion, one hour. Prerequisite: nursing student standing or consent of instructor. Required of third-year nursing students. Lecture and discussion, with emphasis on a correlative approach to anatomy and physiology of human body. Ms. Kasper

**109. Communication in Health Care (3 units).** Lecture, two hours; laboratory, three hours. Prerequisite for non-nursing students: consent of instructor. Study of basic communication and group process theory and its application to practice. Laboratory experience, with emphasis on development of each individual's ability to communicate effectively in a dyad and in a small group. Ms. van Servellen

**M115. Introduction to Pharmacology and Therapeutics (2 units).** (Same as Pharmacology M115.) Prerequisite for non-nursing students: consent of instructor. Systematic review of major drug groups used therapeutically, the most commonly used members in each group, differences among them, and their mechanisms of action. Ms. Gold, Ms. Gyls (W)

**120A. Child and Family Nursing (5 units).** Lecture, two hours (10 weeks); laboratory, 18 hours (five weeks). Prerequisites: courses 101, 105, 109, 120C-120D, 120G. Clinical application of nursing theory in community situations: acute care, convalescent, and ambulatory. Theoretical content includes pathophysiology, pharmacology, and treatment modalities. Application of theoretical concepts of growth and development related to nursing care of the child and its family. Ms. Opas

**120B. Maternity Nursing (5 units).** Lecture, two hours (10 weeks); laboratory, 18 hours (five weeks). Prerequisites: courses 101, 105, 109, 120C-120D, 120G. Clinical application of nursing theory in community situations: acute care, convalescent, and ambulatory. Theoretical content includes pathophysiology, pharmacology, and treatment modalities. Application of theoretical concepts of reproduction to nursing care of the family. Ms. Koniak-Griffin

**120C-120D. Medical-Surgical Nursing of Adults and Older Adults (6 units each).** Lecture, three hours (10 weeks); laboratory, 18 hours (five weeks). Prerequisites: courses 101, 105, 109. Clinical application of nursing theory in community situations: acute care, convalescent, and ambulatory. Theoretical content includes pathophysiology, pharmacology, and treatment modalities. Application of theoretical content, including aging process, related to medical-surgical nursing care of the adult/older adult patient. Ms. Currier, Ms. Wilson (W)

**120E. Psychiatric/Mental Health Nursing (5 units).** Lecture, two hours (10 weeks); laboratory, 18 hours (five weeks). Prerequisites: courses 101, 105, 109, 120C-120D. Corequisite: course 120G. Clinical application of nursing theory in community situations: acute care, convalescent, and ambulatory. Theoretical content includes pathophysiology, pharmacology, and treatment modalities. Application of mental health content related to nursing care of individuals, groups, or communities. Ms. Mintz-Binder

**120G. Medical-Surgical Nursing of Adults and Older Adults (5 units).** Lecture, two hours (10 weeks); laboratory, 18 hours (five weeks). Prerequisites: courses 101, 105, 109. Clinical application of nursing theory in community situations: acute care, convalescent, and ambulatory. Theoretical content includes pathophysiology, pharmacology, and treatment modalities. Application of the theoretical content, including aging process, related to medical-surgical nursing care of the adult/older adult patient. Ms. Currier, Ms. Wilson (Sp)

**M158. Health in Culture and Society.** (Same as Anthropology M168.) Prerequisite: upper division standing. Examination of theories and methods of medical anthropology in relation to cross-cultural health systems, role networks, attitude and belief systems of the participants. Emphasis on interaction networks in health care systems.

**184. Evolution and Dynamics of the Nursing Profession (3 units).** Study of evolution of nursing, focusing on historical, ethical, moral, legal, and institutional ramifications of nursing practice. In addition, rights, obligations, and societal and institutional expectations of the professional nurse. Ms. Ver Steeg

**189. Human Sexuality.** Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Lectures, discussions, and case presentations considering human sexuality, its joys and pleasures, pitfalls and problems. Interdisciplinary approach encompassing anatomic, physiologic, psychologic, and social aspects of heterosexual and homosexual relationships, including development of gender identity, intercourse, pregnancy, abortion, contraception, and venereal disease. Ms. Reeder

**190A. Advanced Child and Family Nursing (7 units).** Lecture, two hours; laboratory, 15 hours. Prerequisites: courses 101, 104A, 104B, 120A through 120E, 120G. Clinical concentration in nursing care of the child and its family. Theoretical content integrates concepts related to management of pediatric client care in acute and ambulatory settings. Application of theoretical concepts of growth and development of the child and family. Ms. Opas and the Staff

**190B. Advanced Maternity Nursing (7 units).** Lecture, two hours; laboratory, 15 hours. Prerequisites: courses 101, 104A, 104B, 120A through 120E, 120G. Clinical concentration in nursing care of the childbearing family. Theoretical content further refines theories, concepts, and nursing practice related to the childbearing family. Application of theoretical concepts of reproduction to nursing care of the family.

**190C. Critical Care Nursing (7 units).** Lecture, two hours; laboratory, 15 hours. Prerequisites: courses 101, 104A, 104B, 120A through 120E, 120G. Clinical concentration related to nursing in the critical care setting. Theoretical content includes pathophysiology, pharmacology, advanced nursing skills, and treatment modalities in selected clinical situations. Application of theoretical content related to nursing care of the acutely ill medical and surgical adult patient in emergent and critical phases of illness.

**190D. Perioperative Nursing (7 units).** Lecture, two hours; laboratory, 15 hours. Prerequisites: courses 101, 104A, 104B, 120A through 120E, 120G. Clinical concentration related to nursing in the operating room setting. Theoretical content further refines theories, concepts, and practice of perioperative nursing. Application of theoretical content related to nursing care of the patient undergoing surgical intervention. Ms. Fujihara

**190E. Advanced Psychiatric/Mental Health Nursing (7 units).** Lecture, two hours; laboratory, 15 hours. Prerequisites: courses 101, 104A, 104B, 120A through 120E, 120G. Clinical concentration in area of mental health nursing. Theoretical concepts and application related to mental health of the adult, geriatric, child, or adolescent client. Experiences include those in inpatient psychiatric nursing, outpatient day treatment programs, individual and child therapy, hospice programs, and crisis intervention units. Ms. Mintz-Binder

**190F. Community Health Nursing (7 units).** Lecture, two hours; laboratory, 15 hours. Prerequisites: courses 101, 104A, 104B, 120A through 120E, 120G. Clinical concentration in community health nursing settings: home health, public health, occupational health, and schools. Theoretical content focuses on the community as a context for understanding the relationship between health status of individuals and groups with the psychophysical environment. Ms. Brown

**192. Physical Assessment.** Lecture, three hours; laboratory, three hours. Prerequisites: courses 101, 105, 109. Designed to provide in-depth review and synthesis of physical assessment skills and knowledge covering the life span. Individual study, use of audiovisual aids, physical assessment skills practice in laboratory, and the required text are mandatory. Ms. Fredrickson and the Staff

**193. Introduction to Research.** Introduction to planning a research project based on a simple question. Rules for definition of terms, alternative methods of writing purposes, selecting a sample, choosing a data collection instrument, planning for data analysis, protection of human rights, reading research reports, and writing a research proposal. Ms. Vredevoe and the Staff

**194. Computer Systems in Health Care.** Lecture, three hours; laboratory, three hours; field trips. Introductory course in review and evaluation of computer systems in nursing administration, education, and practice. Ms. Chang

**195. Nursing Management (3 units).** Lecture, two hours; field study, three hours. Corequisite: one course in 190 series. Management theory applied to nursing practice. Acquisition of basic knowledge of management concepts and skills as practiced in a health care setting. Ms. Lewis

**196. Issues in Providing Health Care to Culturally Diverse Populations.** Lecture, three hours; discussion, one hour. Prerequisite for non-nursing students: consent of instructor. Theoretical and experiential course designed to provide a base for understanding issues of providing health care to culturally diverse populations, with emphasis on strategies to facilitate intercultural/intracultural communication and intergroup/intragroup dynamics in health care settings.

**199. Special Studies in Nursing (2 to 16 units).** Prerequisites: senior standing and/or consent of instructor. Individual study of a problem in the field of nursing. May be repeated for credit, but only four units may be applied toward degree requirements. P/NP or letter grading.

## Graduate Courses

### Research in Nursing, Nursing Theory, and Cultural Diversity

**202. Philosophical Foundations of Science of Nursing.** Prerequisite: doctoral standing or consent of instructor. Designed to explore major schools of thought in contemporary Western philosophy of science, with emphasis on ways in which these schools may and do influence nursing science and practice.

**203. Theoretical Frameworks for Nursing Practice.** Lecture, three hours. Focus on application and evaluation of nursing knowledge for advanced practice, including introduction to theory development.

**204. Research in Nursing: Advanced Course.** Prerequisite: course 193 or equivalent upper division basic research methodology course. Complex research designs and analysis of multiple variables, with emphasis on techniques for control of variables, data analysis, and interpretation of results. Analysis in depth of interrelationship of theoretical frameworks, design, sample selection, data collection instruments, and data analysis techniques. Content discussed in terms of clinical nursing research problems. Ms. Vredevoe and the Staff

**205A. Qualitative Research Methods in Nursing.** Prerequisite: course 204. Emphasis on nursing research designs utilizing field method approach, ethnomethodology, and/or inductive methods.

**205B. Quantitative Research Methods in Nursing.** Prerequisite: course 204. Emphasis on nursing research designs requiring statistical analysis of data. Ms. Vredevoe

**206A-206B. Nursing Theory Development.** Lecture/seminar, three hours. Prerequisites: course 202 or philosophy of science course (may be taken concurrently), 203 or equivalent. Focus on major issues involved in development of nursing knowledge, including content and methods of developing nursing theory. In Progress grading. Ms. Flakerud

**207. Research in Nursing: Measurement of Clinical Variables.** Lecture, two hours; discussion, two hours. Prerequisites: courses 204, and 205A or 205B or equivalent. Analysis of methods of measurement of physiological and psychosocial variables relevant to clinical nursing research, with emphasis on purposes, underlying assumptions, strengths, and limitations of measurement techniques. Analysis of techniques to develop reliability, validity, sensitivity of measurement instruments. Ms. Dracup

**208. Research in Nursing: Measurement of Outcomes.** Discussion, three hours; field application, six to eight hours. Prerequisites: courses 206A, 207. Measurement theories, including topics related to scaling and tool development as they apply to outcomes. Emphasis on opportunity to develop knowledge and skills through course content and individualized direct involvement in a clinical research project. Ms. Padilla

**209A. Human Responses to Illness.** Lecture, three hours; discussion, one hour. Introductory graduate-level nursing theory course, with emphasis on human responses to illness that nurses diagnose and treat. Primary content on cultural diversity. Integration of psychosocial and role-based responses with study of culturally based responses. Designed to provide conceptual base that nurses can use in assessing, diagnosing, planning, and intervening in these responses to illness. Ms. Anderson

**209B. Human Responses to Illness (2 to 4 units).** Prerequisite: course 105 or equivalent. Current concepts and research on human physiological responses to illness in critical, long-term, and ambulatory settings. Physiological responses involve protective, regulatory, and sensory/arousal mechanisms. Ms. Kasper

**210. Respiratory Physiology as It Relates to Nursing.** Lecture, three hours; discussion, one hour; seminars. Prerequisite: upper division human physiology course. Advanced treatment of topic presented in lectures and seminars, with emphasis on current research. Application of knowledge to nursing problems. Ms. Seraydarian

**211. Cardiovascular Physiology as It Relates to Nursing.** Lecture, three hours; discussion, one hour; seminars. Prerequisite: upper division human physiology course. Advanced treatment of topic presented in lectures and seminars, with emphasis on current research. Application of knowledge to nursing problems. Ms. Seraydarian

**212. Discontinuities in Family Health during Reproductive Years.** Lecture, two hours; discussion, one hour. Overview of selected problems with health connotations that are potentially disruptive to the family during childbearing years. Selected problems examined in depth. Pertinent variables affecting family's definition of situation, resources, strategies for coping, and utilization of professional services; their relevance for nursing practice. Ms. Reeder

**214. Human Responses to Cardiovascular Illness.** Corequisite: course 211. Introduction to basic methods of assessing cardiovascular function in health and illness, with emphasis on their application in clinical nursing practice. Ms. Dracup, Ms. Nyamathi

**215. Human Responses to Respiratory Illness.** Corequisite: course 210. Exploration of selected problems, trends, and issues in respiratory care designed for the clinical nurse specialist. Basic methods of assessing respiratory function in health and disease, with emphasis on commonly seen respiratory diseases. Acute, chronic, and rehabilitative focus.

**216. Human Responses to Critical Care I.** Lecture, three hours; discussion, one hour. Prerequisites: courses 203, 204, 209A. Pathophysiologic concepts and nursing management of critically ill adults. Nursing aspects of selected dysfunctions and implications for critical care clinical nurse specialists. Ms. Moser and the Staff

**217. Human Responses to Critical Care II.** Lecture, three hours; discussion, one hour. Prerequisites: courses 209B, 216. Builds on pathophysiologic concepts and nursing management of critically ill adults presented in course 216. Emphasis on synthesis of research, theory, and experiential knowledge and skills to provide advanced preparation for critical care clinical nurse specialists. Ms. Moser and the Staff

**219. Essentials of Accounting and Budgeting in Health Care Organizations.** Prerequisite: graduate standing in nursing administration or consent of instructor. Introduction to concepts, issues, and techniques of accounting and budgeting with which a nurse administrator must be familiar. Major topics include cost behavior and analysis, cost accounting, forecasting, capital, operating and cash budgets, and budgetary control systems. Ms. McCombs

**220A. Ethical and Legal Issues in Advanced Nursing Practice (2 units).** Recommended (but not prerequisite): minimum of one graduate-level clinical practice course. Focus on ethical and legal issues which have impact on advanced nursing practice and on theories and strategies requisite to addressing those issues. Ms. McCombs

**220B-220C-220D. Advanced Practice Roles (2 units each).** (Formerly numbered 220B.) Recommended (but not prerequisite): minimum of one graduate-level clinical practice course. Focus on management, education, and consultation related to professional role development and serving as a foundation for advanced nursing practice. **220B.** Management; **220C.** Education; **220D.** Consultation. Ms. van Servellen and the Staff

**221. Theoretical Frameworks for Developmental Problems, Middle and Later Years.** Aspects of life span development relevant to understanding health needs in middle and later years. Changes in biological, cognitive, and psychosocial processes; implications for prevention and rehabilitative care. Ms. Newman

**223. Management of Developmental Problems, Early Years.** Lecture, two hours; discussion, two hours. Study of selected human developmental theories, hypotheses, and concepts as they relate to children. Problems relevant to nursing examined through critique of pertinent literature. Ms. Gottesman, Ms. Zahr

**225. Problems in Environmental Management.** Prevention and treatment of nursing problems related to conditions of the psychophysical and social environment.

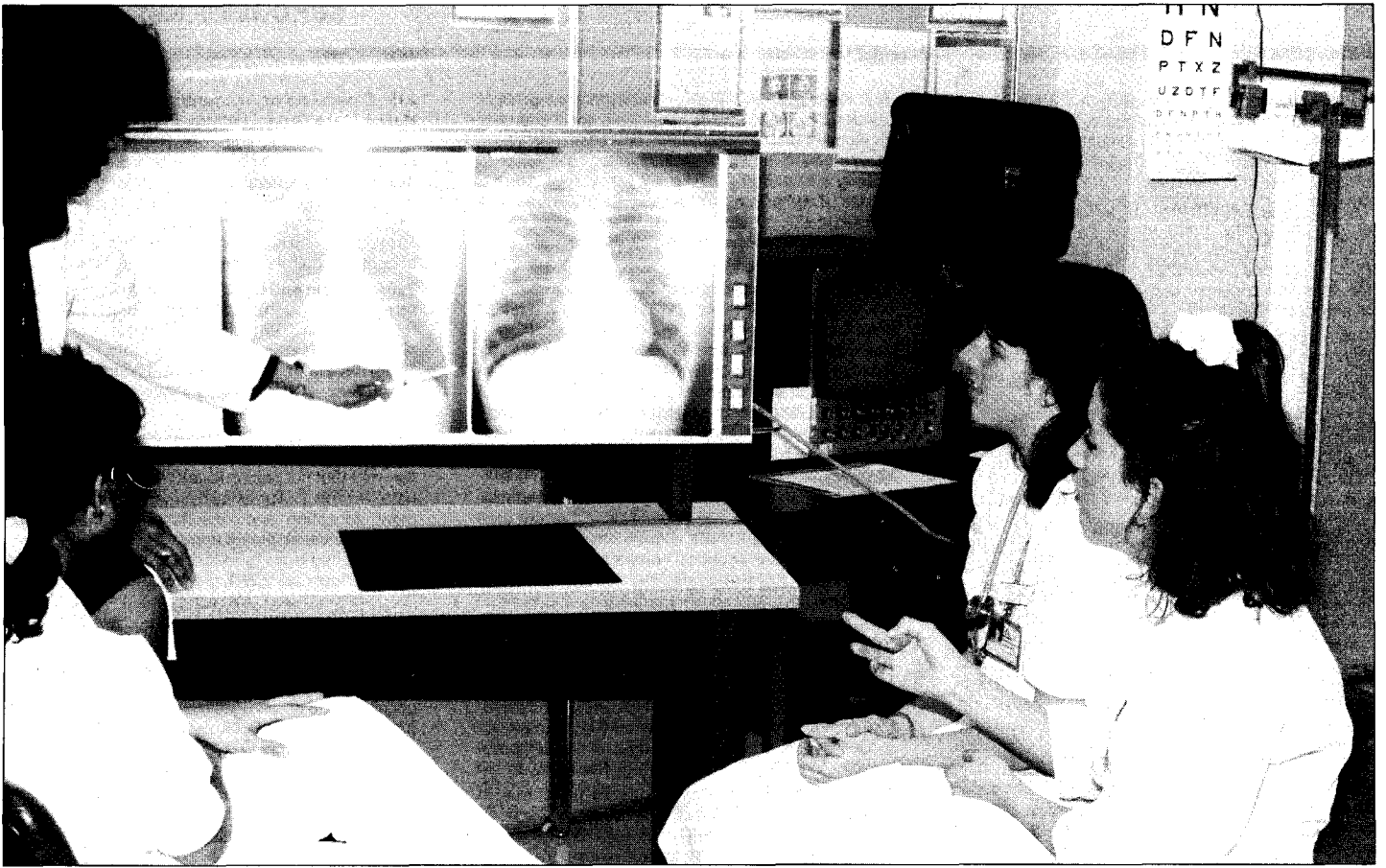
**226. Psychophysical Environmental Influences on Health/Illness Behaviors and Health Outcomes.** Lecture, two hours; discussion, two hours. Prerequisites: courses 206A-206B. Study of theory and research on stress and coping, adverse physical aspects of the environment, personal space and privacy, territoriality and crowding, and perception and cognition, with emphasis on health outcomes of nursing interventions. Ms. Nyamathi

**227. Nursing's Role in Health/Illness Continuum.** Lecture, three hours; discussion, one hour. Prerequisites: courses 206A-206B. Application of theory/research to health/illness-related phenomena of behaviors occurring as health status changes, self-definition as healthy or ill, regimen compliance, sick-role, and societal influences on sick-role. Ms. Reeder

**228. Sociocultural Variations in Health and Illness.** Lecture, two hours; discussion, two hours. Prerequisites: courses 206A-206B. Relationship of sociocultural factors to health systems and diagnosis and treatment of illness, ethnomedical systems, and integration of sociocultural variables into clinical nursing research. Ms. Flakerud

**232. Human Responses to Chronic Illness I.** Lecture, three hours; discussion, one hour. Prerequisites: courses 204, 209A, 209B. Focus on pathophysiological concepts and nursing management of chronically ill adults, addressing nursing aspects of selected dysfunctions and implications for chronic care clinical nurse specialists. Ms. Faherty and the Staff

**233. Human Responses to Chronic Illness II.** Lecture, three hours; discussion, one hour. Prerequisite: course 232. Continuation of critical examination of pathophysiological concepts and nursing management of chronically ill adults presented in course 232. Focus on synthesis of research, theory, and experiential knowledge and skills, providing advanced preparation for chronic care clinical nurse specialists. Ms. Faherty and the Staff





**M250. Medical Anthropology in Public Health.** (Same as Anthropology M266, Community Health Sciences M232, and Psychiatry M250.) Seminar, three hours. Cross-cultural aspects of human behavior as they relate to perception, treatment, incidence, and prevalence of disease and illness.

Ms. Browner, Ms. Scrimshaw

**264. Issues in Primary Ambulatory Care (2 units).** Corequisite: course 402 or consent of instructor. Discussion of concepts of team practice, interprofessional and intraprofessional relationships, legal issues, and socioeconomic aspects of primary care.

Ms. Ver Steeg

**M273. Advanced Seminar: Medical Anthropology.** (Same as Anthropology M263Q, Community Health Sciences M244, and Psychiatry M273.) Seminar, three hours. Prerequisite: consent of instructor. Limited to 15 students. Examination of interrelationships between society, culture, ecology, health, and illness. Bases for written critical analysis and class discussion provided through key theoretical works.

Ms. Browner (Sp)

**M280. Seminar: Reproduction and Women's Health.** (Same as Anthropology M269P, Community Health Sciences M241, and Psychiatry M280.) Seminar, three hours. Analysis, using a cross-cultural approach, of sociocultural and political economic factors that affect reproduction and women's health. Topics include relationships between women's domestic and extra-domestic roles and their health, and impact of new reproductive technologies. May be repeated for credit.

Ms. Browner

**M290A-M290B-M290C. Child Abuse and Neglect (2 units, 2 units, 1 unit).** (Same as Community Health Sciences M245A-M245B-M245C, Dentistry M300.5A-M300.5B-M300.5C, Education M217G-M217H-M217I, Law M281A-M281B, Medicine M290A-M290B, and Social Welfare M290E-M290F-M290G.) Course M290A is prerequisite to M290B, which is prerequisite to M290C. Intensive interdisciplinary study of child physical and sexual abuse and neglect, with lectures by faculty members of the Schools of Dentistry, Education, Law, Medicine, Nursing, and Public Health and the Department of Psychology, as well as by the relevant public agencies.

**299A. Nursing Research Seminar.** Seminar, three hours. Prerequisites: courses 206A-206B, 207, 208, research design course in cognate area. Seminar to assist students who are beginning careers in scientific research to understand issues of misconduct and scientific integrity. Highlights faculty expertise in research, culminating in communication and dissemination of their research. S/U grading.

**299B-299D. Nursing Research Seminars (1 to 4 units each).** Lecture, one hour; discussion, one to four hours. Prerequisites: courses 206A-206B, 208, research design course and statistics sequence in cognate area. Seminars to assist students throughout execution of their dissertations, beginning with selection of a researchable problem and culminating in communication and dissemination of their research. S/U grading.

## Functional Preparation

**375. Teaching Apprentice Practicum (1 to 4 units).** Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of a regular faculty member responsible for curriculum and instruction at the University. May be repeated for credit. S/U grading.

## Clinical Practice

**401. Nursing Assessment and Intervention.** Lecture, two hours; laboratory, four to eight hours. Prerequisite or corequisite: course 203. Instruction and experience in systematic assessment of patients for identification of nursing problems. Discussion and evaluation of major modes of interventive practice.

**402. Primary Diagnosis for Nurse Practitioners.** Lecture, three hours; laboratory, three hours. Prerequisites: course 192 or equivalent, admission to nurse practitioner specialty area of primary ambulatory care section, consent of instructor. Collection, analysis, and reporting of data used by the nurse practitioner in identification of patient problems. Principles and practice in history taking, physical examination, laboratory, and other diagnostic methodology. Pathology and pathophysiology integrated in a systems approach.

Ms. Keenan and the Staff

**403. Assessment and Care of High-Risk Neonates.** Lecture, two hours; laboratory, six hours. Prerequisite: consent of instructor. Overview of concepts and techniques of nursing assessment of the at-risk fetus/neonate and related clinical implications for nurse practitioners.

Ms. Gottesman and the Staff

**405. Assessment in Psychiatric Nursing.** Lecture, two hours; laboratory, six hours. Preparatory course for advanced clinical practice. Critical examination of concepts and strategies which affect assessment of psychological behavior.

Ms. Wuerker

**M410A. Nursing Care of Developmentally Disabled.** (Same as Psychiatry M472A.) Lecture, one hour; discussion, one to two hours; laboratory, 10 hours minimum. Prerequisite: consent of instructor. Study of the disabling conditions of childhood and their effects on the individual and family. Content based on normative developmental models with consideration for sociocultural diversity. Emphasis on prevention, systematic assessment, and planning of care for the individual and family. Introduction to implementation of intervention strategies. Series of three courses integrates didactic material and clinical experience.

Ms. Betz (F)

**M410B. Nursing Care of Developmentally Disabled.** (Same as Psychiatry M472B.) Lecture, one hour; discussion, one to two hours; laboratory, 10 hours minimum. Prerequisites: course M410A and/or consent of instructor. Study of philosophical and conceptual models affecting care delivery for developmentally disabled. Emphasis on intervention strategies necessary for primary, secondary, and tertiary prevention.

Ms. Betz (W)

**M410C. Nursing Care of Developmentally Disabled.** (Same as Psychiatry M472C.) Lecture, one hour; discussion, one to two hours; laboratory, 10 hours minimum. Prerequisites: course M410B and/or consent of instructor. Exploration and participation in assessment, planning, and delivery of health care to developmentally disabled in a variety of settings. Emphasis on expanded role of the nurse.

Ms. Betz (Sp)

**412. Perspectives of Occupational Health Nursing Practice (3 units).** Lecture, three hours; two half-day field experiences per term. Prerequisite: consent of instructor. Presentation of current concepts in occupational health within a nursing framework. Analysis of elements of worksite health programs; discussion of nursing's leadership role in ensuring a safe and healthful workplace.

Ms. Glazner

**416. Concepts in Cancer Nursing.** Lecture, three hours; clinical observation and field trips, three hours. Exploration and clinical application of concepts in oncology — biology, epidemiology, prevention, diagnosis, psychosocial impact, and treatment of cancer — to nursing care. Integration of concepts into theoretical frameworks for cancer nursing assessment. Individualized clinical observations and field trips.

Ms. Sarna and the Staff

**417. Advanced Concepts in Cancer Nursing.** Lecture, three hours; clinical observation and field trips, three hours. Prerequisite: course 416 or consent of instructor. Clinical application of advanced concepts in oncology — pathophysiology, epidemiology, prevention, diagnosis, psychosocial impact, treatment, symptom distress, and rehabilitation — to nursing care of patients with specific malignancies. Conceptual and scientific exploration of nursing care problems. Individualized clinical observations and field trips.

Ms. Sarna and the Staff

**420A. Clinical Care of Intermediate and Recovering High-Risk Neonates (3 to 10 units).** Lecture, three hours; discussion, one hour; laboratory, 18 hours. Prerequisite: course 403. First clinical practicum in care of high-risk neonates. Emphasis on development and refinement of clinical nursing skills in management of intermediate and recovering neonates.

Ms. Carey and the Staff

**420B. Clinical Care of Critically Ill High-Risk Neonates (3 to 10 units).** Lecture, three hours; discussion, one hour; laboratory, 18 hours. Prerequisite: course 420A. Second clinical practicum in care of high-risk neonates. Emphasis on development and refinement of clinical nursing skills in delivery room stabilization of newborns and care of critically ill neonates.

Ms. Gottesman and the Staff

**420C. Advanced Clinical Care of High-Risk Neonates (8 units).** Lecture, one hour; discussion, one hour; laboratory, 18 hours. Prerequisite: course 420B. Offers students opportunity to assume greater independence in managing care of high-risk neonates at all levels of care.

Ms. Gottesman and the Staff

**421A. Clinical Nursing Care of Children (8 units).** Lecture, two hours; discussion, one hour; laboratory, 15 hours. Prerequisites: courses 203, 223. Application of a theoretical model and the nursing process to a specific, identifiable client population in a pediatric setting, with special emphasis on assessment and diagnosis. Content covers each aspect of nursing process.

Ms. Zahr

**421B. Advanced Clinical Nursing Care of Children (8 units).** Lecture, two hours; discussion, one hour; laboratory, 15 hours. Prerequisite: course 421A. Role of the clinical nurse specialist in pediatric nursing, with emphasis on practitioner component of the role. Students identify a selected population for whom direct care is planned and implemented within a conceptual framework for nursing interventions. Emphasis on development of a researchable clinical question.

Ms. Zahr

**421C. Clinical Specialization in Nursing Care of Children (8 units).** Lecture, two hours; discussion, one hour; laboratory, 15 hours. Prerequisite: course 421B. Required for pediatric clinical nursing specialty. Practitioner role is continued in this course to foster consolidation of knowledge and skills. Emphasis on consultation, staff development, research, and patient advocacy dimensions of the clinical nurse specialist role.

Ms. Zahr

**422A. Clinical Maternity Nursing (8 units).** Lecture, two hours; discussion, one hour; laboratory, 15 hours. Prerequisite: course 203. Emphasis on developing skill in utilization of assessment, intervention, and evaluation phases of nursing process with childbearing families. Examination of family-centered orientations and theoretical models as they relate to development of nursing practice and care giving.

Ms. Ludington

**422B. Advanced Clinical Maternity Nursing (8 units).** Lecture, two hours; discussion, one hour; laboratory, 15 hours. Prerequisite: course 422A. Knowledge and clinical expertise refined and extended, with emphasis on high-risk conditions in the reproductive process. Emphasis on prescriptive, intervention, and evaluative phases of nursing process and on teaching, counseling skills, and collegial relations.

Ms. Koniak-Griffin and the Staff

**422C. Clinical Specialization in Maternity Nursing (6 units).** Discussion, one hour; laboratory, 15 hours. Prerequisite: course 422B. Required for maternity nursing specialization. Advanced clinical practice to foster consolidation of knowledge and skills. Emphasis on consultation and staff development dimensions of clinical nurse specialist role.

Ms. Koniak-Griffin

**423A. Advanced Clinical Medical-Surgical Nursing (8 units).** Lecture, two hours; laboratory, 18 hours. Prerequisites: courses 203, 204, 209A, 209B, 220A (may be taken concurrently). Advanced course in theory and practice of nursing care of adults. Emphasis on critical evaluation, integration, and application of scientific and theoretical knowledge within an advanced nursing practice role. Focus on acutely ill patients.

Ms. Faherty and the Staff

**423B. Advanced Clinical Medical-Surgical Nursing (8 units).** Lecture, two hours; laboratory, 18 hours. Prerequisite: course 423A. Study of clinical specialization and other expanding roles in nursing. Emphasis on continued refinement and extension of professional knowledge and skills in a selected clinical area in care of patients with chronic health problems. Practicum planned in congruence with students' career goals.

**423C. Clinical Specialization in Medical-Surgical Nursing (6 units).** Discussion, two hours (five weeks); laboratory, 15 hours (10 weeks). Prerequisite: course 423B. Required for medical-surgical nursing specialization. Advanced knowledge and clinical skills provided to equip students to perform in clinical nurse specialist roles. Emphasis on practitioner, educator, consultant, and researcher roles.

**424A. Clinical Psychiatric Nursing (5 units).** Lecture, one hour; discussion, two hours; laboratory, six hours. Prerequisites: course 405, consent of instructor. Focus on process of psychotherapy, with specific emphasis on knowledge and skills of assessment and individual therapy practice.

Ms. Wuerker and the Staff

**424B. Advanced Clinical Psychiatric Nursing (8 units).** Discussion, three hours; laboratory, 15 hours. Prerequisite: course 424A. Refinement and extension of understanding of the process of psychotherapy of individuals, groups, and families.

Ms. van Servellen and the Staff

**424C. Clinical Specialization in Psychiatric Nursing (10 units).** Discussion, two hours; laboratory, 24 hours. Prerequisite: course 424B. Supervised internship. Students select setting and population.

Ms. van Servellen and the Staff

**425A. Advanced Clinical Gerontological Nursing.** Lecture/discussion, three hours; laboratory, three hours. Prerequisite: one graduate nursing theory course. Principles and practice of assessment of psychosocial variables in health problems of the elderly. Emphasis on integrated understanding of multiple variable influences in total health. Application of knowledge and skills of psychosocial nursing intervention in rehabilitation of the chronically ill aged.

Ms. Newman

**425B. Clinical Specialization in Gerontological Nursing (8 units).** Discussion, three hours; laboratory, 30 hours maximum. Prerequisite: course 425A. Extension and demonstration of competencies in planning and implementation of nursing programs in health problems of the elderly.

**428A. Clinical Nursing Management.** Lecture, one hour; discussion, 30 minutes; laboratory, seven and one-half hours. Prerequisite: one organizational theory course. Application of management theory in a health care setting, with emphasis on organizing nursing care of groups of patients. Students work with nurse managers in developing a unit philosophy, objectives, policies, standards of practice, and care evaluation mechanisms.

**428B. Advanced Clinical Nursing Management.** Lecture, one hour; discussion, 30 minutes; laboratory, seven and one-half hours. Prerequisite: course 428A. Examination of role of the nurse in managing scarce resources, with emphasis on patient classification systems, staffing, and assignment of nursing personnel. Cost-effective management of human and financial resources explored extensively.

**428C. Nursing Administration Residency (8 units).** Prerequisites: courses 428A, 428B. Required field residency experience. Students apply management theory to administration of nursing services in a variety of health care settings. Provides organizational-based environment in which students can develop skills in management practice.

**429A-429B. Preceptorships in Primary Ambulatory Care Nursing (9 units each).** Lecture, four hours; laboratory, 15 hours. Prerequisites: courses 264, 402. Theory and clinical practice in nursing management and evaluation of health problems in selected ambulatory population. Emphasis on health maintenance. Attention to developmental and cognitive needs of clients in relation to family, social, and cultural structures.

Ms. Keenan and the Staff

**429C. Advanced Preceptorship in Primary Ambulatory Care Nursing (10 units).** Lecture, three hours; laboratory, 21 hours. Prerequisites: courses 429A-429B. Required of students who want to meet requirements for preparation as a nurse practitioner as established by California Board of Registered Nursing. Emphasis on refinement and extension of assessment, management, and evaluation skills, family health care, and community health concepts. Placements provide opportunity for in-depth focus on a specific group of health problems.

Ms. Anderson and the Staff

## Special Studies

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA assistant dean and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. No more than eight units may be applied toward M.N. degree minimum total course requirement; may not be applied toward minimum graduate course requirement. S/U grading.

**596. Directed Individual Study or Research (4 to 8 units).** Prerequisite: consent of instructor. Opportunity for individual graduate students in nursing to pursue special studies or research interests. May be repeated for credit, but only four units may be applied toward graduate degree requirements. S/U grading.

**597. Individual Study for Comprehensive Examination (4 to 8 units).** May be repeated once for credit, but only four units may be applied toward M.N. degree requirements. S/U grading.

**598. Research for Thesis (4 to 8 units).** Prerequisite: consent of instructor. Recommended for students who elected thesis plan prior to Fall Quarter 1993. May be repeated for credit, but only four units may be applied toward M.N. degree requirements. S/U grading.

**599. Research for and Preparation of D.N.Sc. Dissertation (2 to 8 units).** Individualized faculty supervision of doctoral dissertation research by student's chair. May be repeated for credit, but only eight units may be applied toward doctoral degree requirements. S/U grading.

# School of Public Health

Abdelmonem A. Afifi, Dean

# 18



The emergence of public health as an independent discipline dates back over a century, when the field was concerned mainly with the epidemic of communicable diseases and some facets of sanitation. Changes in socioeconomic conditions, life-style, and other factors have brought such issues as accidents, aging, air pollution, alcoholism, drug addiction, smoking, mental health, homicide, and sexually transmitted diseases to the fore as community health problems. In time the following general statement evolved — "The mission of public health is to fulfill society's interest in assuring conditions in which people can be healthy."

Public health professionals can promote the health of the community through (1) research into the development of methodologies in biostatistics, epidemiology, demography, and techniques of prevention, (2) investigations into factors which influence health behavior, quality of and access to health care, health education, nutrition, environmental problems, and problems of special population groups such as mothers, children, and minorities, and (3) development of research into new areas that impact on the health of the community. Public health professionals are also responsible for translating knowledge of disease and health enhancement into resolution of health problems in the community. They are committed to the prevention of disease, promotion of health, and improvement in the quality of life.

To fulfill its national and international mission, the school (1) educates new professionals and leaders for the private and public sectors, (2) prepares researchers and educators of future professionals, (3) conducts research to define, protect, and improve conditions for a healthy public, and (4) contributes knowledge, expertise, and service to the community. It is the goal of the school to ensure that the protection and improvement of the public's health is accomplished by the most efficient and effective means, consistent with equity for all individuals in the state, the nation, and the world.

# School of Public Health

16-071 Center for the Health Sciences, (310) 825-5516

The School of Public Health offers graduate programs leading to both academic and professional degrees in five departments. The Department of Biostatistics develops statistical and analytical techniques for public health use. The Department of Community Health Sciences has two areas: behavioral sciences and health education, concerned with the study and implementation of behavior which prevents disease and enhances health, and population and family health, which identifies health problems of and promotes health in high-risk groups such as women, children, the poor, and the disadvantaged. The Department of Environmental Health Sciences elucidates health hazards in the general environment and in the workplace. The Department of Epidemiology is concerned with the nature, extent, and distribution of disease and health in populations. The Department of Health Services deals with the organization, financing, quality, and distribution of health care services. The school is also responsible for the administration of the interdepartmental degree program in environmental science and engineering.

## Admission

In addition to requiring that applicants hold a bachelor's degree from an accredited U.S. institution or an equivalent degree or professional title from an international institution, each department in the school has limitations and additional requirements. Detailed information can be found in the departmental listings which follow. Help in deciding on a department is available in the school's Student Affairs Office.

For information on the proficiency in English requirements for international graduate students, refer to "Graduate Admission" in Chapter 3.

## Other Requirements

Requirements to fulfill each degree objective vary according to the degree and the department. See the departmental listings which follow for specific requirements and procedures.

## Degrees Offered

Biostatistics .....	M.S., Ph.D.
Environmental Health Sciences .....	M.S., Ph.D.
Environmental Science and Engineering .....	D.Env.
Epidemiology .....	M.S., Ph.D.
Health Services .....	M.S., Ph.D.
Preventive Medicine and Public Health .....	M.S.*
Public Health .....	M.P.H., M.S.**, Dr.P.H., Ph.D.**

\*Not admitting new students at this time.

\*\*Offered through the Community Health Sciences Department.

## Biostatistics

51-254 Center for the Health Sciences, (310) 825-5250

### Professors

Abdelmonem A. Afifi, Ph.D., *Dean*  
 Potter C. Chang, Ph.D.  
 William G. Cumberland, Ph.D.  
 Robert M. Elashoff, Ph.D., *Chair*  
 Donald Guthrie, Ph.D., *in Residence*  
 Robert I. Jennrich, Ph.D.  
 Peter A. Lachenbruch, Ph.D.  
 Virginia A. Clark, Ph.D., *Emerita*  
 Wilfrid J. Dixon, Ph.D., *Emeritus*  
 Olive Jean Dunn, Ph.D., *Emerita*  
 Raymond J. Jessen, Ph.D., *Emeritus*  
 Frank J. Massey, Jr., Ph.D., *Emeritus*

### Associate Professors

Dorota M. Dabrowska, Ph.D.  
 Virginia F. Flack, Ph.D.  
 Nathaniel Schenker, Ph.D.  
 Jeremy M.G. Taylor, Ph.D., *in Residence*

### Assistant Professors

Robert E. Weiss, Ph.D.  
 Weng Kee Wong, Ph.D.

### Lecturers

Martin L. Lee, Ph.D.  
 Jean L. Mickey, Ph.D., *Emerita*

### Adjunct Associate Professor

James W. Sayre, Dr.P.H.

### Adjunct Assistant Professor

David W. Gjertson, Ph.D.

## Scope and Objectives

In recent years biostatistics has become one of the most stimulating areas of applied statistics. The field encompasses the methodology

and theory of statistics as applied to problems in the life and health sciences. Biostatisticians are trained in the skilled application of statistical methods to the solution of problems encountered in public health and medicine. They collaborate with scientists in nearly every area related to health and have made major contributions to our understanding of AIDS, cancer, and immunology, as well as other areas. Further, biostatisticians spend a considerable amount of time developing and evaluating the statistical methodology used in those projects. The Department of Biostatistics offers M.S. and Ph.D. degrees in Biostatistics and, through the School of Public Health, the M.P.H. and Dr.P.H. degrees with a specialization in biostatistics. All students receive a balanced education, blending theory and practice.

## Requirements for Graduate Degrees

### Admission

Application forms and the *Announcement of the UCLA School of Public Health* may be obtained by writing to the Student Affairs Office, School of Public Health, 16-071 CHS, UCLA, Los Angeles, CA 90024-1772. Both the School of Public Health Application for Admission to Graduate Status and the *UCLA Application for Graduate Admission* must be completed. Three letters of recommendation (with at least two from former professors) are required before an application is considered complete. It is your responsibility to ensure that the application file is complete.

The preferred deadline for graduate applications is December 15, 1993, for Fall Quarter 1994 admission. *Applications received after the deadline have considerably reduced opportunities for financial aid and housing.*

Applicants must meet the University minimum requirement of an acceptable bachelor's degree with a B (3.0) average in upper division coursework and/or prior graduate study. Exceptionally qualified applicants may be considered on an individual basis. Majors in mathematics, computer science, or a field of application in biostatistics are preferred. Your undergraduate preparation should include calculus and linear algebra. If your undergraduate coursework has been deficient in breadth of fundamental training, you must take specified undergraduate courses after admission. Prior field experience is not required as a condition of admission, although a background of public health experience may be considered in your evaluation.

Applicants must also perform satisfactorily on a recent (within the last five years) Graduate Record Examination (GRE). The Medical College Admission Test (MCAT), Dental Admission Test (DAT), or Graduate Management Admission Test (GMAT) may be accepted in lieu of the GRE under certain circumstances. Strong emphasis is placed on the quantitative and analytical components of the GRE; the department does not have a minimum combined score requirement.

Refer to the *UCLA Application for Graduate Admission* for the Test of English as a Foreign Language (TOEFL) requirement for international applicants.

## Master of Science Degree

The Master of Science is a research-oriented degree within the general field of biostatistics. Teaching experience is not required.

See Schoolwide Programs at the end of this chapter for information on the M.P.H. degree.

## Admission

In addition to the general requirements for admission, your undergraduate preparation should include Mathematics 31A, 31B, 32A, 32B, 33A, 33B (second-year calculus), or the equivalent.

## Course Requirements

The M.S. degree requires a minimum of nine graduate and upper division courses, of which at least five must be graduate courses in the 200 and 500 series. The five required graduate courses must be in biostatistics or mathematical statistics, including at least three courses in biostatistics.

## Areas of Specialization

Areas of specialization and typical course plans are listed below.

### Biostatistics

Unless previously taken, the following courses must be included in the degree program: Biostatistics 110A, 110B, 110C, 200A, 200B-200C, 240, 402A, 402B; any two graduate courses in biostatistics (or, with consent of your

adviser, two graduate statistics courses in other departments); Statistics M152A, 152B-152C or equivalent.

Other courses in biostatistics or mathematical statistics, or in related areas such as biology, physiology, public health, management, or mathematics, are selected with your adviser's consent.

A written report and written comprehensive examination covering the above course material must be completed satisfactorily.

### Biostatistical Health Data Management

Unless previously taken, the following courses must be included in the degree program: Program in Computing 1, Biostatistics 110A, 110B, 110C, M153A, 200A, 200B-200C, 403, 404 or 405, 420, 421, Statistics M152A, 152B-152C. One public health course in a department other than Biostatistics is selected with your adviser's consent.

Other courses in biostatistics or mathematical statistics, or in related areas such as biology, physiology, public health, management, or mathematics, are selected with your adviser's consent.

A written report and written comprehensive examination covering the above course material must be completed satisfactorily.

### Comprehensive Examination Plan

The thesis plan is not used. The written comprehensive examination is on your major field only. Normally no more than one reexamination after failure is allowed. If you do not take the reexamination at the time specified by the department, you forfeit your right to reexamination.

## Ph.D. Degree

The Ph.D. is an advanced research degree that emphasizes depth of knowledge and research skills. The dissertation must demonstrate your ability for independent scholarly investigation.

There is no foreign language requirement for the Ph.D.; teaching experience is recommended but not required.

See Schoolwide Programs at the end of this chapter for information on the Dr.P.H. degree.

### Admission

Qualifications for admission are those currently specified by the Graduate Division (see Chapter 3). Normally, students receive an M.S. in Biostatistics at UCLA before admission to the Ph.D. program. Undergraduates with sufficient coursework in mathematics and statistics are considered for admission directly into the Ph.D. program.

## Course Requirements

Unless previously taken, the following courses must be included in the degree program: Biostatistics M250A-M250B, 251, 255, Mathematics 276A-276B; at least three special topics courses from the Biostatistics 230, 270, and 280 series. In addition, your full program of study must be approved by the department and must include, at the graduate level, three areas of knowledge: biostatistics, mathematical statistics, and a third field such as biology, epidemiology, infectious diseases, medicine, microbiology, pharmacology, physiology, psychology, zoology, or public health. You are encouraged to participate in the biostatistics consulting laboratory for one term each year.

## Screening/Qualifying Examinations

Written qualifying examinations in biostatistics and mathematical statistics are taken before advancement to candidacy and can be repeated once only. The mathematical statistics examination is taken in the spring of your first year in residence.

The University Oral Qualifying Examination is taken before advancement to candidacy and after successful completion of the written examinations. Administered by the doctoral committee, it involves a proposal of the dissertation topic. A failed examination may be repeated once. The timing of reexaminations is specified by the department in the case of written examinations or by your committee in the case of the oral examination. If you do not take the reexaminations at the specified time, you forfeit your right to reexamination.

## Final Oral Examination

A final oral examination is required.

## Upper Division Courses

**100A. Introduction to Biostatistics.** (Formerly numbered Public Health 100A.) Lecture, three hours; discussion, one hour; laboratory, one hour. Prerequisites: upper division standing, one biological or physical sciences course. Students who have completed courses in statistics may enroll only with consent of instructor. Not open for credit to students with credit for course 110A. Introduction to methods and concepts of statistical analysis. Sampling situations, with special attention to those occurring in biological sciences. Topics include distributions, tests of hypotheses, estimation, types of error, significance and confidence levels, sample size.

**100B. Introduction to Biostatistics.** (Formerly numbered Public Health 100B.) Lecture, three hours; discussion, one hour; laboratory, one hour. Prerequisite: course 100A or equivalent. Not open for credit to students with credit for course 110B. Introduction to analysis of variance, linear regression, and correlation analysis.

**100C. Introduction to Biostatistics.** (Formerly numbered Public Health 100C.) Lecture, three hours; discussion, one hour; laboratory, one hour. Prerequisite: course 100B or equivalent. Design of experiments, analysis of variance, multiple and polynomial regression analysis with biomedical applications.

**100D. Introduction to Biostatistics.** (Formerly numbered Public Health 100D.) Lecture, three hours; laboratory, two hours. Prerequisite: course 100B or equivalent. Introduction to concepts of probability used in biomedical sciences. Enumeration statistics and nonparametric methods. Comparison of nonparametric with analogous parametric tests. Discussion of power and sample size.

**110A. Basic Biostatistics.** (Formerly numbered 101A.) Lecture, three hours; discussion, one hour; laboratory, one hour. Prerequisite: Mathematics 31B or equivalent. Not open for credit to students with credit for course 100A. Basic concepts of statistical analysis applied to biological sciences. Topics include random variables, sampling distributions, parameter estimates, statistical inference.

**110B. Basic Biostatistics.** (Formerly numbered 101B.) Lecture, three hours; discussion, one hour; laboratory, one hour. Prerequisite: course 110A. Not open for credit to students with credit for course 100B. Topics include elementary analysis of variance, simple linear regression; topics related to analysis of variance and experimental designs.

**110C. Basic Biostatistics.** (Formerly numbered 101C.) Lecture, three hours; discussion, one hour; laboratory, one hour. Prerequisite: course 110B or equivalent. Not open for credit to students with credit for course 100C or 100D. Introduction to multiple regression; topics related to analysis of variance and experimental designs.

**M153A-M153B. Introduction to Computational Statistics.** (Formerly numbered M101D-M101E.) (Same as Biomathematics M153A-M153B and Statistics M153A-M153B.) Lecture, three hours; discussion, one hour. Prerequisites: Mathematics 115A, Statistics 152B. Linear and nonlinear regression analysis using package programs. Emphasis on relation between statistical theory, numerical results, and analysis of data. **M153A.** BMDP, SAS, and SPSS regression programs; general linear model theory; linear regression analysis; transforming and weighting; regression diagnostics; model building. **M153B.** Analysis of variance and covariance; nonlinear regression programs, analysis, and applications; maximum likelihood analysis; robust regression.

**199. Special Studies (2 to 4 units).** (Formerly numbered Public Health 199.) Prerequisites: senior standing, consent of instructor and department chair (based on written proposal outlining course of study). Individual undergraduate guided studies under direct faculty supervision. Study to be structured by instructor and student at time of initial enrollment. Only four units may be taken each term.

## Graduate Courses

**200A. Biostatistics.** (Formerly numbered Public Health 200A.) Lecture, three hours; discussion, one hour; laboratory, one hour. Prerequisites: course 100C or 110C, one other statistics course. Study design sampling, determination of sample size, data screening, types of measurements and determination of appropriate analysis, and unidimensional scale construction. S/U grading for nonmajors only.

**200B-200C. Biostatistics.** (Formerly numbered Public Health 200B-200C.) Lecture, three hours; discussion, one hour; laboratory, one hour. Prerequisites: courses M153A, 200A, linear algebra, advanced calculus. **200B.** Multiple linear regression, including model validation, influence of observations, regression diagnostics; discriminant analysis; principal components; factor analysis. **200C.** Measures of association and analysis of categorical data, theory of generalized linear models.

**M210. Statistical Methods for Categorical Data.** (Formerly numbered M201E.) (Same as Biomathematics M231.) Lecture, three hours; discussion, one hour. Prerequisites: course 100B or 110B, Statistics 152C or equivalent. Statistical techniques for analysis of categorical data; discussion and illustration of their applications and limitations.

**212. Distribution Free Methods.** (Formerly numbered 201F.) Lecture, three hours; discussion, one hour. Prerequisites: course 100B or 110B, Statistics 152C, or equivalent. Theory and application of distribution free methods in biostatistics.

**213. Statistical Simulation Techniques.** (Formerly numbered 201G.) Lecture, three hours; discussion, one hour. Prerequisites: course 100C, Statistics 152C, one computer programming course. Techniques for simulating important statistical distributions, with applications in biostatistics.

**214. Finite Population Sampling.** (Formerly numbered 201H.) Lecture, three hours. Prerequisite: course 100D or Statistics 152C. Theory and methods for sampling finite populations and estimating population characteristics.

**M215. Survival Analysis.** (Formerly numbered M201K.) (Same as Biomathematics M281.) Lecture, three hours; discussion, one hour. Prerequisites: course 100C, Statistics 152C, or equivalent. Statistical methods for analysis of survival data.

**216. Introduction to Statistical Methods for Biological Assays.** (Formerly numbered 201M.) Lecture, three hours. Prerequisites: course 110C, Statistics 152C. Topics include standard statistical procedures for estimation of relative potency, density of microorganisms, and density of radioactivity, models used for these procedures, and statistical considerations for designing such assays.

**219. Special Topics: Supplemental Topics.** (Formerly numbered 201J.) Lecture, three hours; discussion, one hour. Prerequisite: course 100C. Topics in biostatistics not covered in other courses.

**230. Statistical Graphics.** (Formerly numbered 202J.) Lecture, three hours; discussion, two hours. Prerequisites: courses 110A, 110B, 110C, 200A, or equivalent. Graphical data analysis emphasizes use of visual displays of quantitative data to gain insight into data structure by exploring patterns and relationships, and to enhance classical numerical analyses, especially assumption validity checking. Principles of graph construction, graphical methods, and perception issues.

**231. Simultaneous Statistical Inference.** (Formerly numbered 202G.) Lecture, three hours; discussion, one hour. Prerequisites: courses 200C, M250A, Statistics 152C. Methods and theory of simultaneous statistical inference.

**M232. Statistical Analysis of Incomplete Data.** (Formerly numbered M202F.) (Same as Biomathematics M232.) Lecture, three hours; discussion, one hour. Prerequisites: course 110C, Statistics 152C, or equivalent. Discussion of statistical analysis of incomplete data sets, with material from sample survey, econometric, biometric, psychometric, and general statistical literature. Topics include treatment of missing data in statistical packages, missing data in ANOVA and regression imputation, weighting, likelihood-based methods, and nonrandom nonresponse models. Emphasis on application of methods to applied problems, as well as on underlying theory.

**233. Statistical Methods in AIDS (2 units).** (Formerly numbered 202K.) Prerequisites: courses 110A, 110B, 110C, M215, Mathematics M150A-150B, 151, or equivalent. Coverage of methods necessary to address statistical problems in AIDS research, including projection methods for the size of AIDS epidemic and methods for estimating incubation distribution.

**M234. Applied Bayesian Inference.** (Formerly numbered M202H.) (Same as Biomathematics M234.) Lecture, three hours; discussion, one hour. Prerequisites: courses 200C, M250A, Statistics 152C. Bayesian approach to statistical inference, with emphasis on biomedical applications and concepts rather than mathematical theory. Topics include large sample Bayes inference from likelihoods, noninformative and conjugate priors, empirical Bayes, Bayesian approaches to linear and nonlinear regression, model selection, Bayesian hypothesis testing, and numerical methods. S/U or letter grading.

**240. Seminar: Biostatistics (2 units).** (Formerly numbered 204E.) Prerequisites: course 200B, two courses from M210 through 219. Current developments of methodology and problems in applications of biostatistics.

**245. Advanced Seminar: Biostatistics (2 units).** (Formerly numbered 204F.) Prerequisite: course 200C. Current research in biostatistics. May be repeated for credit. S/U grading.

**M250A-M250B. Linear Statistical Models.** (Formerly numbered M205A-M205B-M205C.) (Same as Mathematics M279A-M279B.) Lecture, three hours; discussion, one hour. Prerequisites: course 110C, Statistics 152C, or equivalent. Topics include linear algebra applied to linear statistical models, distribution of quadratic forms, Gauss/Markov theorem, fixed and random component models, balanced and unbalanced designs.

**251. Multivariate Biostatistics.** (Formerly numbered 206A-206B.) Lecture, three hours. Prerequisite: course M250A or equivalent. Multivariate analysis as used in biological and medical situations. Topics from component analysis, factor analysis, discriminant analysis, analysis of dispersion, canonical analysis.

**255. Advanced Topics and Probability in Biostatistics.** Lecture, three hours; discussion, one hour. Prerequisites: Mathematics 276A-276B or consent of instructor. Topics include conditioning, modes of convergence, basic limit results for empirical processes, von-Mises calculus, and notions of efficiency in statistics. Applications cover M-L-R estimation in two-sample and regression models, goodness of fit methods, smoothing techniques, and bootstrap.

**270. Stochastic Processes.** (Formerly numbered 207E.) Lecture, three hours. Prerequisites: upper division mathematics, including statistics and probability. Stochastic processes applicable to medical and biological research.

**271. Mathematical Epidemiology.** (Formerly numbered 207F.) Lecture, three hours. Prerequisites: course 270 or equivalent, upper division mathematics (including statistics and probability). Mathematical theory of epidemiology with deterministic and stochastic models and problems involved in applying the theory.

**273. Statistical Methods for Research Biological Assays.** (Formerly numbered 207H.) Prerequisite: course 216. Topics include statistical methods developed for research assays for which standard procedures do not apply.

**275. Advanced Survival Analysis.** (Formerly numbered 207K.) Lecture, three hours; discussion, one hour. Prerequisites: Mathematics 276A-276B. Recommended: course M215, Mathematics 276C. Censoring and truncation, single sample problems, K-sample comparisons, Cox regression model, hazard rate and density estimation, estimation in Markov chains and Markov renewal processes, multivariate models, competing risks.

**276. Inferential Techniques that Use Simulation.** (Formerly numbered 207M.) Lecture, three hours; discussion, one hour. Prerequisites: Mathematics 276A-276B. Recommended: Biostatistics 213. Theory and application of recently developed techniques for statistical inference that use computer simulation. Topics include bootstrap, multiple imputation, data augmentation, stochastic relaxation, and sampling/importance resampling algorithm.

**277. Robustness and Modern Nonparametrics.** Lecture, three hours. Prerequisite: Mathematics 276A. Topics include M-estimation, influence curves, breakdown point, bootstrap, jackknife, smoothing, nonparametric regression, generalized additive models, density estimation.

**M280. Statistical Computing.** (Formerly numbered M207L.) (Same as Biomathematics M280 and Mathematics M280.) Lecture, three hours. Prerequisites: Mathematics 115A, Statistics 152C, or equivalent. Introduction to theory and design of statistical programs: computing methods for linear and nonlinear regression, dealing with constraints, robust estimation, and general maximum likelihood methods.

**285. Advanced Topics: Recent Developments.** (Formerly numbered 207L.) Lecture, three hours; discussion, one hour. Prerequisite: course 200C. Advanced topics and developments in biostatistics not covered in Biostatistics M210 through 219 or 270 through 276 or in other courses. Possible topics include time-series analysis, classification procedures, correspondence analysis, etc.

**295. Application of Statistical Theories in Biomedical Research.** (Formerly numbered 105.) Lecture, three hours; discussion, one hour. Prerequisite: Statistics 152C or 154B. Review of statistical theories essential to biostatistics. Illustration of applications by examples. Topics include delta method, order statistics, asymptotic properties of MLEs, iterative algorithms for MLEs, generalized likelihood ratio tests for categorical data, and transformations.

**400. Field Studies in Biostatistics (2 or 4 units).** (Formerly numbered Public Health 400.) Field observation and studies in selected community organizations for health promotion or medical care. Students must file field placement and program training documentation on form available from Student Affairs Office. May not be applied toward M.S. minimum course requirement; four units may be applied toward 44-unit minimum total required for M.P.H. degree.

**402A. Principles of Biostatistical Consulting (2 units).** (Formerly numbered Public Health 402A.) Lecture, one hour; discussion, one hour. Prerequisites: course 100B or 110B and Statistics 152B. Presentation of structural format for statistical consulting. Role of statistician and client. Reviews of actual statistician/client interactions and case studies.

**402B. Biostatistical Consulting.** (Formerly numbered Public Health 402B.) Discussion, two hours; laboratory, two hours. Prerequisites: courses 100C, 402A. Principles and practices of biostatistical consulting. May be repeated for credit. S/U grading.

**403. Computer Management of Health Data.** (Formerly numbered Public Health 403.) Lecture, three hours; laboratory, two hours. Prerequisites: at least one statistics course, two research methodology courses, Program in Computing 1 or equivalent, consent of instructor. Concepts of health data management, design and maintenance of large data bases on tapes or disks; computing tools and techniques facilitating data retrieval for statistical analysis, tabulation and report generation useful to biostatisticians, health planners, and other health professionals.

**404. Principles of Sampling.** (Formerly numbered Public Health 404.) Lecture, three hours; discussion, one hour. Prerequisites: course 100B, Epidemiology 100, or equivalent. Statistical aspects of design and implementation of a sample survey. Techniques for analysis of data, including estimates and standard errors. Avoiding improper use of survey data.

**405. Demographic Materials and Methods.** (Formerly numbered Public Health 405.) Lecture, three hours; laboratory, two hours. Prerequisites: course 100A or 110A, Epidemiology 100 or 200, or equivalent. Sources of demographic information; description of human populations; calculation and interpretation of statistics used to measure and describe population growth, structure, geographic distribution, mortality, natality, and migration.

**406. Applied Multivariate Biostatistics.** (Formerly numbered Public Health 406.) Lecture, three hours; laboratory, one hour. Prerequisites: course 100B, at least two other upper division research courses. Use of multiple regression, principal components, factor analysis, discriminant function analysis, logistic regression, and canonical correlation in biomedical data analysis. S/U grading optional for nondivision majors.

**410. Statistical Methods in Clinical Trials.** (Formerly numbered 401E.) Lecture, three hours; discussion, two hours. Prerequisite: course 100C or 100D or Statistics 152C or equivalent. Design of studies in animals to assess antitumor response; randomization, historical controls, p-values, size of study, and stratification in human experimentation; various types of controls; prognostic factors, survivorship studies, and design of prognostic studies; organization of clinical trials — administration, comparability, protocols, clinical standards, data collection and management. S/U grading optional for nondivision majors.

**411. Statistical Methods for Longitudinal Data.** (Formerly numbered 401F.) Lecture, three hours. Prerequisites: course 100C or 100D or Statistics 152C or equivalent, Epidemiology 100. Design and analysis of longitudinal or panel studies. S/U grading optional for non-division majors.

**412. Statistical Methods for Case-Control Studies.** (Formerly numbered 401G.) Lecture, three hours. Prerequisites: courses 100C and 100D, or 110C. Statistical designs, sampling statistics, and analytic models of case-control studies. Special topics such as exploratory analyses, multiplicity of analyses, cross-validation, small sample performance of variance estimators, measurement error in the covariates, and incomplete data.

**419. Special Topics: Applied Statistics.** (Formerly numbered 401H.) Lecture, three hours; discussion, one hour. Prerequisite: course 100C. Special topics in applied statistics not covered in other courses in professional series.

**420. Data Base Management Systems.** (Formerly numbered 203A.) Lecture, three hours; laboratory, two hours. Prerequisite: course 403 or equivalent. Data base and data base models applied to medical and public health studies; design of data bases for efficient data retrieval and statistical analysis using package data base management and statistical package programs.

**421. Systems Analysis for Health Data.** (Formerly numbered 203B.) Lecture, three hours; laboratory, two hours. Prerequisite: course 420. Health data computer processing as a total system; review of selected health information systems, statistical packages, and computer languages; design, development, testing, and maintenance of a computer system for managing health data.

**495. Teacher Preparation in Biostatistics (2 units).** (Formerly numbered Public Health 495.) Prerequisites: 18 units of cognate courses in area of specialization, consent of department chair. May not be applied toward master's degree minimum total course requirement. May be repeated for credit. S/U grading.

**501. Cooperative Program (2 to 8 units).** (Formerly numbered Public Health 501.) Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. No more than eight units may be applied toward master's degree minimum total course requirement; may not be applied toward minimum graduate course requirement. S/U grading.

**502. UCLA/Hawaii Western Consortium Exchange (4 to 16 units).** (Formerly numbered Public Health 502.) Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken at University of Hawaii, Manoa, as part of UCLA/UH Western Consortium Exchange Program. Only the equivalent of eight quarter units taken at UH may be applied toward degree. Extra units may be applied toward department requirements by petition to Public Health Student Affairs Office. UH letter-graded courses appear on UCLA transcript with letter grades, while UH Cr/NCR-graded courses appear as S/U grades. Grade points from these courses are not counted in UCLA grade-point average.

**596. Directed Individual Study or Research (2 to 8 units).** (Formerly numbered Public Health 596.) Prerequisite: graduate standing. Individual guided studies under direct faculty supervision. Only four units may be applied toward M.P.H. and M.S. minimum total course requirement. May be repeated for credit.

**597. Preparation for Master's Comprehensive or Doctoral Qualifying Examinations (2 to 8 units).** (Formerly numbered Public Health 597.) Prerequisite: graduate standing. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

**598. Master's Thesis Research (2 to 8 units).** (Formerly numbered Public Health 598.) Only four units may be applied toward M.P.H. and M.S. minimum total course requirement; may not be applied toward minimum graduate course requirement. May be repeated for credit. S/U grading.

**599. Doctoral Dissertation Research (2 to 8 units).** (Formerly numbered Public Health 599.) May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

## Community Health Sciences

36-071 Center for the Health Sciences, (310) 825-5308

### Professors

- Carol S. Aneshensel, Ph.D. (*Behavioral Sciences and Health Education*)  
 Emil Berkanovic, Ph.D. (*Behavioral Sciences and Health Education*), Chair and Area Head  
 Linda B. Bourque, Ph.D. (*Population and Family Health*), Vice Chair and Area Head  
 E. Richard Brown, Ph.D. (*Behavioral Sciences and Health Education*)  
 John Edmond, Ph.D. (*Nutritional Sciences*)  
 Osman M. Galal, M.D., Ph.D. (*Population and Family Health*)  
 Michael S. Goldstein, Ph.D. (*Behavioral Sciences and Health Education*)  
 Gail G. Harrison, Ph.D. (*Population and Family Health*)  
 Dean T. Jamison, Ph.D. (*Population and Family Health*)  
 Snehendu B. Kar, Dr.P.H., M.Sc. (*Behavioral Sciences and Health Education*), *Population and Family Health*)  
 Joel D. Kopple, M.D., in Residence (*Nutritional Sciences*)  
 Virginia C. Li, Ph.D., M.P.H. (*Behavioral Sciences and Health Education*)  
 Alfred K. Neumann, M.D., M.A., M.P.H., F.A.B.P.M. (*Population and Family Health*)  
 Charlotte G. Neumann, M.D., M.P.H. (*Population and Family Health*)  
 John F. Schnelle, Ph.D., in Residence (*Behavioral Sciences and Health Education*)  
 Susan K. Scrimshaw, Ph.D. (*Population and Family Health*), Associate Dean for Academic Programs  
 Judith M. Siegel, Ph.D., M.S.Hyg. (*Behavioral Sciences and Health Education*), Associate Dean for Student Affairs

### Professors Emeriti

- Roslyn B. Alfin-Slater, Ph.D. (*Nutritional Sciences*)  
 Isabelle F. Hunt, Dr.P.H., R.D. (*Nutritional Sciences*)  
 Edward B. Johns, Ed.D. (*Behavioral Sciences and Health Education*)  
 Alfred H. Katz, D.S.W., M.S. (*Population and Family Health*)

Edward L. Rada, Ph.D. (*Behavioral Sciences and Health Education*)  
 Marian E. Swendseid, Ph.D. (*Nutritional Sciences*)  
 Daniel M. Wilner, Ph.D. (*Behavioral Sciences and Health Education*)

#### Associate Professors

Neal Halfon, M.D., M.P.H. (*Population and Family Health*)  
 David Heber, M.D., Ph.D. (*Nutritional Sciences*)  
 Donald E. Morisky, Sc.D., M.S.P.H. (*Behavioral Sciences and Health Education*)  
 Michael G. Ross, M.D., M.P.H., *In Residence* (*Population and Family Health*)

#### Assistant Professors

Deborah C. Gliik, Sc.D. (*Behavioral Sciences and Health Education*)  
 Dawn M. Upchurch, Ph.D. (*Population and Family Health*)  
 Steven P. Wallace, Ph.D. (*Behavioral Sciences and Health Education*)

#### Lecturers

Helene G. Brown, B.S. (*Behavioral Sciences and Health Education*)  
 Marianne Parker Brown, M.P.H. (*Behavioral Sciences and Health Education*)  
 Michael R. Cousineau, Dr.P.H. (*Behavioral Sciences and Health Education*)  
 Janis S. Fidler, Ph.D. (*Nutritional Sciences*)  
 Paul M. Fleiss, M.D., M.P.H. (*Population and Family Health*)  
 Patrice E.F. Jelliffe, R.N., M.P.H. (*Population and Family Health*), *Researcher*  
 Celia Kaplan, Dr.P.H. (*Population and Family Health*)  
 Joanne Leslie, Ph.D. (*Population and Family Health*)  
 Ronald L. Linder, Ed.D. (*Behavioral Sciences and Health Education*)  
 Mario Panaqua, B.A. (*Nutritional Sciences*)  
 Sora Park, M.P.H. (*Behavioral Sciences and Health Education*)

#### Adjunct and Visiting Professors

Linda J. Beckman, Ph.D., M.S., *Adjunct* (*Behavioral Sciences and Health Education*)  
 Edith M. Carlisle, Ph.D., *Adjunct* (*Nutritional Sciences*), *Researcher*  
 Wen-Pin Chang, M.D., M.P.H., D.M.Sc., *Visiting* (*Population and Family Health*)  
 James M. Iacono, Ph.D., *Adjunct* (*Nutritional Sciences*)

#### Adjunct Associate Professor

Daniel H. Ershoff, Dr.P.H. (*Behavioral Sciences and Health Education*)

#### Adjunct Assistant Professors

Martin Anderson, M.D. (*Population and Family Health*)  
 Barbara A. Berman, Ph.D. (*Behavioral Sciences and Health Education*)  
 Roger A. Clemens, Dr.P.H. (*Nutritional Sciences*)  
 Dierdre S. Gifford, M.D. (*Population and Family Health*)  
 Stewart A. Laidlaw, Ph.D. (*Nutritional Sciences*)  
 Kevin J. Malotte, Ph.D. (*Behavioral Sciences and Health Education*)  
 Jose Quiroga, M.D. (*Population and Family Health*)  
 Audrey Safflas, Ph.D. (*Population and Family Health*)  
 Susan B. Sorenson, Ph.D. (*Population and Family Health*)  
 Antonette K. Yancey, M.D., M.P.H. (*Population and Family Health*)

#### Assistant Field Program Supervisor

Marta G. Sorini, M.P.H.

## Scope and Objectives

The objective of the Department of Community Health Sciences is to develop, integrate, and apply biomedical, psychological, and social approaches to the promotion and preservation of health. In order to accomplish this, the breadth of the instructional and research programs encompasses the following interrelated professional disciplines: (1) behavioral science and health education — the influence of health behavior and social forces on disease and its distribution in the population, and the development of health education and community organization strategies to prevent disease and promote health through changing health behavior and public policy and (2) population and family health (including nutrition) — populations in the U.S. and in less technically developed countries, their demographic characteristics, and their mental, physical, and reproductive health status. Vulnerable groups, particularly women, children, and the elderly, are of specific concern. An understanding of underlying biologic mechanisms of nutrition and their implications for improving the nutritional status of populations, especially groups at high risk, is taught, with emphasis on underprivileged communities, women, and children.

## Requirements for Graduate Degrees

### Admission

Application forms and the *Announcement of the UCLA School of Public Health* may be obtained by writing to the Student Affairs Office, School of Public Health, 16-071 CHS, UCLA, Los Angeles, CA 90024-1772. Both the School of Public Health Application for Admission to Graduate Status and the *UCLA Application for Graduate Admission* must be completed. Three letters of recommendation are required, two from former professors and one from an employer (if no employer, three former professors) before an application is considered complete. It is your responsibility to ensure that the application file is complete.

The preferred deadline for graduate applications is December 15, 1993, for Fall Quarter 1994 admission. *Applications received after the deadline have considerably reduced opportunities for admission, financial aid, and housing.*

Applicants must meet the University minimum requirement of an acceptable bachelor's degree with a B (3.0) average in upper division coursework and/or prior graduate study. Exceptionally qualified applicants may be considered on an individual basis. No screening examination is required for admission. If your undergraduate coursework has been deficient in breadth of fundamental training, you must take specified undergraduate courses after admission. Except for the population and family health area, prior health-related experience is not required as a condition of admission, although a background of public health experi-

ence may be considered in your evaluation. In addition, you must be accepted by and accommodated in an area of the Department of Community Health Sciences.

Applicants must also perform satisfactorily on a recent (within the last five years) Graduate Record Examination (GRE). The Medical College Admission Test (MCAT) or Dental Admission Test (DAT) may be accepted in lieu of the GRE by some areas under certain circumstances. (Note: The population and family health area requires GRE scores. MCAT or DAT scores are accepted *only* for applicants *already holding* M.D. or D.D.S. degrees.) Applicants at the master's level must have a minimum GRE combined (verbal and quantitative) score of 1,100. Applicants at the doctoral level need a minimum GRE combined (verbal and quantitative) score of 1,200. The analytical section is not required.

Refer to the *UCLA Application for Graduate Admission* for the Test of English as a Foreign Language (TOEFL) requirement for international applicants.

### Master's Applicants

Your prior program of study should include adequate preparation in mathematics, physical sciences, biological sciences, and social sciences, and typically includes two courses each in mathematics, biological sciences, social sciences; one course in physical sciences; and others that constitute an adequate preparation for the proposed area of specialization.

If your prior work in the biological, physical, mathematical, and social sciences does not constitute adequate preparation for your proposed area of specialization, you must include courses in those sciences in your graduate program; these may not be applied toward the minimum requirements for the degree.

### Specific Concentration Requirements

Applicants interested in *population and family health* are expected to have some prior experience in the health field (paid or volunteer) and preferably a bioscience or behavioral science background.

## Master of Science in Public Health

The Master of Science is a research-oriented degree within the general field of public health. It includes the preparation of a thesis or comprehensive examination/major written report. Teaching experience is not required.

See Schoolwide Programs at the end of this chapter for information on the M.P.H. degree.

### Course Requirements

You must complete at least one year of graduate residence at the University of California and a minimum of 10 full courses, at least five of which must be graduate courses in the 200 or 500 series. Only one 596 course (four units)



and one 598 course (four units) may be applied toward the total course requirement; only four units of either course may be applied toward the minimum graduate course requirement. Community Health Sciences 597 may not be applied toward the degree requirements. No more than 18 full courses may be required for the degree.

Required school core courses include Biostatistics 100A, 100B, and Epidemiology 100. Each core course may be waived if you have taken a similar course elsewhere and can pass the waiver examination.

Only courses in which you receive a grade of C- or better may be applied toward the requirements for a master's degree. You must maintain an average of no less than 3.0 (B) in all courses required or elected during graduate residence at the University of California.

### Area of Specialization

The area of specialization and a typical course plan, in addition to mandatory courses, are listed below.

### Behavioral Sciences and Health Education

Community Health Sciences 210, 211, 212, 217, 270, Biostatistics 406, and four to six area core courses (selected from an approved list) are required. Electives must be selected in consultation with an adviser. Normal program length is six terms.

### Thesis Plan

If the thesis option is approved, a thesis committee is established. The committee approves the thesis prospectus before you file for advancement to candidacy. The thesis must be acceptable to the thesis committee.

### Comprehensive Examination/ Report Plan

If the comprehensive examination/report option is approved, a guidance committee of faculty members is appointed. A written comprehensive examination on your major area of study must be passed. If you fail, you may be reexamined once.

The preparation of a major written research report is required; it must be approved by the guidance committee which also must certify successful completion of all degree requirements.

### Master of Science in Preventive Medicine and Public Health

The program is not admitting new students at this time.

### Ph.D. in Public Health

The Ph.D. is an advanced research degree that emphasizes depth of knowledge and research

skills. The dissertation must demonstrate your ability for independent scholarly investigation.

There is no foreign language requirement for the Ph.D.; teaching experience is recommended but not required.

See Schoolwide Programs at the end of this chapter for information on the Dr.P.H. degree.

### Admission

In addition to the University minimum requirements, the department requires (1) satisfactory performance on the Graduate Record Examination (GRE), (2) completion of the M.S. in a field of public health or an appropriately related field (students with an M.P.H. need to satisfy the course requirements of the M.S. in a field of public health before or after admission), (3) at least a 3.0 junior/senior undergraduate grade-point average, at least a 3.5 GPA in graduate studies or demonstrated superiority in graduate work, and at least a B in each of the mandatory core courses, (4) a positive recommendation by an area in the department to the School of Public Health, (5) approval by the admissions policy committee and the department chair. Screening examinations may be required by each area.

In the behavioral sciences and health education area, you must satisfy the area core requirements for the M.P.H. or M.S. in a field of public health (depending on your background) at a level acceptable for the doctoral program. Coursework may be waived by examination if equivalent courses have been taken elsewhere.

### Major Field or Subdiscipline

Behavioral sciences and health education.

### Course Requirements

The courses needed to pass the written examination in your major field depend on the area and field you select.

The minor must be in a field cognate to the major field in public health. A strong minor is required, with at least four full graduate courses (16 units) or equivalent from a department that grants a Ph.D. Biostatistics is the only department considered cognate to a major in public health.

### Qualifying Examinations

Before advancement to candidacy, you must pass a written examination in the major field, complete the requirements in a minor field, and pass an oral qualifying examination on the major and minor fields. Normally no more than one reexamination is allowed. When you are ready to take the University Oral Qualifying Examination, a doctoral committee is nominated.

After passing the University Oral Qualifying Examination, you may be advanced to candidacy and commence work on a dissertation in your principal field of study. The doctoral committee guides your progress toward completion of the dissertation.

### Final Oral Examination

A final oral examination is required of all candidates.

### Lower Division Course

#### Behavioral Sciences and Health Education

**19. Peer Health Counselor Training.** (Formerly numbered Public Health 19.) Limited to students in Peer Health Counselor Program. Analysis of student health care issues as related to campus health care delivery system and to health care consumer. Identification of health needs, determination of appropriate resources, delivery of preventive and self-care education, and delineation of peer health counselor's role. Ms. Park

### Upper Division Courses

#### Behavioral Sciences and Health Education

**100. Behavioral Sciences and Health Education.** (Formerly numbered 183.) Lecture, three hours; discussion, one hour. Development of broad appreciation of psychosocial factors as they affect health and their implications for public health. Review of theories, models, and modalities of health education for health promotion and disease prevention interventions.

#### Population and Family Health

**130. Nutrition and Health (2 units).** (Formerly numbered 161.) Prerequisites: one biology course, one chemistry course, consent of instructor. Not open for credit to nutrition majors. Basic and clinical nutrition theory and practice for students in health sciences curricula.

**132. Health, Disease, and Health Services in Latin America.** (Formerly numbered 174E.) Prerequisite: consent of instructor. Introduction to health, disease, and health services in Latin America, with emphasis on epidemiology, health administration, medical anthropology, and nutrition.

#### Behavioral Sciences and Health Education

**187. Health Education for Teacher Credentials (2 units).** (Formerly numbered Public Health 187.) Limited to students in teacher education credential program. Required for California State Instructional Credential. Teaching/learning process as applied to personal and community health. Topics include psychoactive drugs (alcohol, tobacco, and narcotics), human sexuality, nutrition, and community health resources. Mr. Linder

**189. Community Cancer Education.** (Formerly numbered Public Health 189.) Lecture, three hours; project and fieldwork, one hour. Prerequisites: Biology 30 or equivalent, consent of instructor. Exploration of process of cancer education through community resources, culminating in student-generated community field-study proposal and presentation. Ms. Brown

#### Special Studies

**M197A. Introduction to Indo-American Studies.** (Same as Asian American Studies M197A.) Lecture, three hours. Prerequisite: junior/senior standing in Asian American studies or at least one course in Southeast Asian or Indian history or consent of instructor. Introductory study of Indian American immigration experiences in the U.S., including historical background, demographics, immigration policies and effects, and adaptation experiences. Class projects include sample survey of quality of life, annotated bibliography, and review of creative works. Mr. Kar (Sp)

**199. Special Studies (2 to 4 units).** (Formerly numbered Public Health 199.) Prerequisites: senior standing, consent of instructor and department chair (based on written proposal outlining course of study). Individual undergraduate guided studies under direct faculty supervision. Study to be structured by instructor and student at time of initial enrollment. Only four units may be taken each term.

## Graduate Courses

### Population and Family Health

**200. Global Health Problems.** Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. Overview of health profile of the world in the 20th century. Global health problems and methods by which they have been dealt in context of the Alma Ata goal of "health for all by year 2000."

Mr. Galal, Mr. Neumann

### Behavioral Sciences and Health Education

**210. Introduction to Social Research Methods in Health.** (Formerly numbered 181.) Lecture, four hours; assignments, eight hours. Prerequisites: Biostatistics 100A or equivalent, consent of instructor. Basic methods and techniques in designing and conducting health research using a variety of methods. Discussions of students' own research plans.

Ms. Bourque, Mr. Morisky, Ms. Siegel

**211. Program Planning and Administrative Relationships in Health Education.** (Formerly numbered 216.) Lecture, two hours; discussion, one hour. Prerequisites: courses 217, 271, 482, Health Services 100, consent of instructor. Study of administration concepts; relationships and applicability to health education settings. Responsibility and authority for health education in organizations and other groups.

Ms. Li, Mr. Morisky

**212. Advanced Social Research Methods in Health.** (Formerly numbered 281.) Lecture, two hours; laboratory, two hours. Prerequisites: course 210, Biostatistics 100A, 406, consent of instructor. Problems of health survey design and data collection; measurement issues in data analysis and interpretation; use of computer for analysis of large-scale survey data using various statistical techniques.

**213. Research in Community and Patient Health Education.** (Formerly numbered 295B.) Lecture, three hours; discussion, two hours. Prerequisites: course 270, consent of instructor. Application of conceptual, theoretical, and evaluation skills to community-based health education risk-reduction programs. Computer applications, data management, and research methodologies taught through microcomputer and mainframe computer management and analysis of program data bases.

Mr. Morisky

**214. Issues in Program Evaluation.** (Formerly numbered 289.) Discussion, three hours; reading and research paper, one hour. Prerequisite: course 212 or consent of instructor. Advanced seminar which explores problems of planning and implementing evaluation research in context of local demonstration projects.

Mr. Berkanovic

**215. Advanced Topics in Health Survey Research Methods.** (Formerly numbered 291.) Lecture, two hours; discussion, two hours. Prerequisite: course 212 or consent of instructor. Special topics in health survey research methods. Design of special purpose surveys; recent interviewing techniques; diaries and memory aids; measurement error, including response bias, social desirability, response validity; telephone interviewing; obtaining data on sensitive issues; ethics and confidentiality of survey research data.

Mr. Goldstein

### Population and Family Health

**M216. Qualitative Research Methodology.** (Formerly numbered M273.) (Same as Anthropology M284.) Discussion, three hours; laboratory, one hour. Prerequisite: consent of instructor. Intensive seminar/field course in qualitative research methodology. Emphasis on using qualitative methods and techniques in research and evaluation related to health care.

Ms. Scrimshaw

### Behavioral Sciences and Health Education

**217. Introduction to Research and Program Evaluation.** (Formerly numbered 211.) Lecture, two hours; discussion, two hours. Prerequisites: course 210 and Biostatistics 100A, or consent of instructor. Introduction to principles of research methods and program evaluation as they are applied to public health programs in the community.

Mr. Berkanovic, Mr. Wallace

### Population and Family Health

**218. Questionnaire Design and Administration.** (Formerly numbered 217.) Lecture, two hours; discussion, one hour; laboratory, one hour; outside assignments. Prerequisites: course 210, consent of instructor. Design, testing, field use, and administration of data collection instruments, with particular emphasis on questionnaires.

Ms. Bourque

**230. Family and Sexual Violence.** (Formerly numbered 276E.) Lecture, three hours; community, three to four hours. Prerequisite: consent of instructor. Examination of rape, incest, and spouse and elder abuse. Presentation of definitions, causes, outcomes of research on family and sexual violence, as well as response of social service, medical, and criminal justice systems.

Ms. Sorenson

**231. Maternal and Child Nutrition.** (Formerly numbered 270.) Prerequisite: consent of instructor. Nutrition of mothers, infants, and children in countries at various levels of socioeconomic development; measures for prevention and treatment of protein/calorie malnutrition; relationship between nutrition and mental development; impact of ecological, socioeconomic, and cultural factors on nutrition, nutrition education, and service.

Ms. Neumann

**M232. Medical Anthropology in Public Health.** (Formerly numbered M271.) (Same as Anthropology M266, Nursing M250, and Psychiatry M250.) Seminar, three hours. Cross-cultural aspects of human behavior as they relate to perception, treatment, incidence, and prevalence of disease and illness.

Ms. Scrimshaw

**233. Seminar: Current Issues in Maternal and Child Health (2 units).** (Formerly numbered 272.) Prerequisite: consent of instructor. New knowledge and approaches in selected health and social problems of families, women of childbearing age, and children, including early development, day care, and genetic counseling.

### Behavioral Sciences and Health Education

**234. Adolescent Health and Health Behavior.** (Formerly numbered 272D.) Lecture, two hours; discussion, two hours; assignments, eight hours. Prerequisite: consent of instructor. Adolescent health and health behaviors within a conceptual framework integrating developmental, social, and cultural factors.

Ms. Aneshensel

**235. The Family and Mental Health.** (Formerly numbered 272E.) Lecture, two hours; discussion, two hours; assignments, eight hours. Prerequisite: consent of instructor. Emphasis on how social organization of the family, relationships among family members, and extrafamilial roles of family members contribute to or detract from psychological well-being of spouses, parents, and children.

Ms. Aneshensel

### Population and Family Health

**M236. Human Resources and Economic Development.** (Formerly numbered M272J.) (Same as Education M252C.) Examination, in context of the developing countries, of interactions among economic development, population growth, levels of health and nutritional status, and educational investments.

Mr. Jamison (Sp)

**237. Evolving Paradigms of Prevention: Interventions in Early Childhood.** Seminar, three hours; fieldwork, one hour. Prerequisites: graduate standing, consent of instructor. Introduction to use of early childhood interventions as means of preventing adverse health and developmental outcomes. Concepts of developmental vulnerability, approaches to assessment, models of service delivery, evaluation and cost-benefit issues, funding, and other policy issues.

Mr. Halfon

**M240. Culture and Human Reproduction.** (Formerly numbered M276.) (Same as Anthropology M262P.) Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. Exploration of human behavior related to reproduction. Cross-cultural exploration of biological and behavioral factors, with particular reference to human adaptation.

Ms. Scrimshaw

**M241. Seminar: Reproduction and Women's Health.** (Formerly numbered M276D.) (Same as Anthropology M269P, Nursing M280, and Psychiatry M280.) Seminar, three hours. Analysis, using a cross-cultural approach, of sociocultural and political economic factors that affect reproduction and women's health. Topics include relationships between women's domestic and extra-domestic roles and their health, and impact of new reproductive technologies. May be repeated for credit.

Ms. Browner

**242. Advanced Seminar: Population and Family Health (2 units).** (Formerly numbered 279.) Prerequisites: doctoral standing, consent of instructor. Current research in population and family health. May be repeated for credit. S/U grading.

**243A-243B-243C. Seminars: Preventive Medicine (2 units each).** (Formerly numbered 279D-279E-279F.) Prerequisite: consent of instructor. Three-term sequence devoted to analysis of current issues, practices, research literature, and policy and trends in preventive medicine. Discussion of administrative, epidemiologic, and clinical methods. S/U grading.

Mr. Neumann

**M244. Advanced Seminar: Medical Anthropology.** (Formerly numbered M279H.) (Same as Anthropology M263Q, Nursing M273, and Psychiatry M273.) Seminar, three hours. Prerequisite: consent of instructor. Limited to 15 students. Examination of interrelationships between society, culture, ecology, health, and illness. Bases for written critical analysis and class discussion provided through key theoretical works.

Ms. Browner (Sp)

**M245A-M245B-M245C. Child Abuse and Neglect (2 units, 2 units, 1 unit).** (Formerly numbered M272F-M272G-M272H.) (Same as Dentistry M300.5A-M300.5B-M300.5C, Education M217G-M217H-M217I, Law M281A-M281B, Medicine M290A-M290B, Nursing M290A-M290B-M290C, and Social Welfare M290E-M290F-M290G.) Course M245A is prerequisite to M245B, which is prerequisite to M245C. Intensive interdisciplinary study of child physical and sexual abuse and neglect, with lectures by faculty members of the Schools of Dentistry, Education, Law, Medicine, Nursing, and Public Health and the Department of Psychology, as well as by the relevant public agencies.

**246. Women's Roles and Family Health.** Lecture, two hours; discussion, one hour. Prerequisite: consent of department. Rapidly changing roles of women throughout the world are having important effects on women's own health and that of their families. Analysis of multidisciplinary research from both developing and industrialized countries to provide basis for in-depth discussion of programmatic and policy implications.

Ms. Leslie

**Behavioral Sciences and Health Education**

**M267. Structure and Function of Nutrients Implicated in Etiology of Chronic Disease.** (Same as Epidemiology M276.) Lecture, two hours; discussion, one hour; laboratory, one hour. Prerequisite: one prior organic chemistry course. Basic nutrition course for public health and science majors.

**270. Behavioral Sciences and Health.** (Formerly numbered 182.) Lecture, three hours. Prerequisite: one social sciences course. Basic concepts in behavioral sciences pertinent to health and medical care; cultural and social class variations in health status; health team and community relations; community decision making in public health. Mr. Goldstein, Mr. Kar

**271. Health-Related Behavior Change.** (Formerly numbered 280.) Prerequisite: course 270 or consent of instructor. Unified behavioral science approach to natural determinants of change, as foundation for planned change in health-related behavior at community, group, and individual levels. Ms. Siegel

**272. Social Epidemiology.** (Formerly numbered 283E.) Lecture, two hours; discussion, one hour. Prerequisite: Epidemiology 100 or consent of instructor. Relationship between sociological, cultural, and psychosocial factors in etiology, occurrence, and distribution of morbidity and mortality. Emphasis on life-styles and other socioenvironmental factors associated with general susceptibility to disease and subsequent mortality. Ms. Siegel

**273. Social Epidemiology of Chronic Disease.** (Formerly numbered 283H.) Lecture, two hours; discussion, one hour. Prerequisite: Epidemiology 100 or consent of instructor. Relationship between sociological, cultural, and psychosocial factors in etiology, occurrence, and distribution of chronic diseases. Topics include hypertension, coronary heart disease, and cancer. Emphasis on life-styles and other socioenvironmental factors associated with chronic diseases. Ms. Siegel

**M274. Health Professions.** (Formerly numbered M283F.) (Same as Sociology M249A.) Lecture, three hours. Prerequisite: course 270 or consent of instructor. Sociological examination of concepts "health" and "illness" and role of various health professionals, especially physicians. Attention to meaning of professionalization and professional/client relationships within a range of organizational settings. Mr. Goldstein

**M275. Health and Illness Behavior.** (Formerly numbered M283G.) (Same as Sociology M249B.) Prerequisites: course 270 and Epidemiology 100, or consent of instructor. Sociocultural factors affecting differential patterns of health behavior, illness behavior, and sick-role behavior. Mr. Berkanovic

**276. Alcohol and Drug Abuse: Social Policy Perspectives (3 units).** (Formerly numbered 292.) Prerequisite: consent of instructor. Alternative models of alcohol and other drug addictions examined and implications assessed for public policy regarding their control. Prevention efforts and findings from California and national surveys, with primary emphasis on alcohol use and abuse.

**277. Advanced Community Health Education.** (Formerly numbered 295A.) Lecture, two hours; discussion, two hours. Prerequisite: course 270. Before planning the educational components of a health program, one must assess behaviors and factors influencing the health problem. Conceptual, theoretical, and evaluative skills developed and applied in constructing a community-based educational program. Mr. Morisky

**278. Social and Behavioral Perspectives on Work and Health.** (Formerly numbered 297.) Prerequisites: course 470 and Environmental Health Sciences 250, or consent of instructor. Discussion of current social and behavioral research, issues, and perspectives on work and health.

**279. Advanced Community Organization Seminar.** (Formerly numbered 487.) Seminar, three hours. Prerequisite: course 487 or consent of instructor. Advanced seminar on theoretical and practical problems in community organization, with readings and term projects focusing on participation, leadership, outreach, coalitions, and related issues of community organization and social change applied to health problems. Mr. Brown

**280. International Health Education: Training and Development.** (Formerly numbered 489.) Prerequisites: course 270 and one upper division research methods or epidemiology course, or consent of instructor. Introduction to an international perspective of health education and health promotion. Survey of current developments in health education in both developed and developing countries. Ms. Li

**281. Alcoholism and Drug Abuse among Women.** (Formerly numbered 293.) Prerequisite: consent of instructor. Discussion of psychosocial aspects of abuse of alcohol and other drugs among women. Topics include etiology, prevention, treatment, hormonal influences, and role of the family. Emphasis on current theoretical perspectives and research findings.

**282. Communications in Health Promotion and Education.** (Formerly numbered Public Health 282.) Lecture, two hours; discussion, two hours. Prerequisites: course 270, consent of instructor. Design, implementation, and evaluation of interpersonal communication strategies for health promotion programs. Equal emphasis on communication theories, models, and empirical research literature and on specific applications in health programs and case studies. Mr. Kar

**283. Aging and Health Behavior.** (Formerly numbered 283L.) Discussion, three hours. Prerequisite: course 270 or consent of instructor. Graduate seminar intended to explore sociocultural determinants of health-related behaviors among the aged. Mr. Berkanovic

**284. Ecology of Mental Health.** (Formerly numbered Public Health 284.) Lecture, three hours. Prerequisites: course 270, Epidemiology 100, and Biostatistics 100A, or consent of instructor. Analysis of occurrence and distribution of mental disorders in the community and relationships to social structure. Problems of classification, definition, measurement in sociopsychiatric epidemiology, sociocultural and social-psychological factors in mental disorders. Mr. Goldstein

**285. Aging, Health, and Society.** Lecture, three hours; discussion, one hour. General introduction to major social issues affecting health of the elderly in America. Leading gerontological theories and major issues that affect the aged, showing how those theories and issues influence health status, health promotion, and illness among the elderly. Mr. Wallace (W)

**286. Seminar: Behavioral Sciences and Health (2 to 4 units).** (Formerly numbered Public Health 286.) Lecture, two hours. Prerequisite: consent of instructor. Recent significant contributions of behavioral sciences to understanding health and illness, with selected and varying topics each term. May be repeated for credit. S/U grading. Mr. Berkanovic, Mr. Goldstein

**288. Current Problems in Health Education.** (Formerly numbered Public Health 288.) Lecture, one hour; discussion, three hours. Prerequisites: course 270 and three other public health and/or social sciences courses, or consent of instructor. Current problems and findings in health education content areas, such as nutrition, mental health, family health, consumer health, safety, and communicable and chronic diseases.

**290. Race, Class, Culture, and Aging.** (Formerly numbered 298.) Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Experience of aging for African American, Latino, and Asian elderly examined in context of their families, communities, and the nation. Exploration of cultural and structural influences on health and lived experiences of those elders. Mr. Wallace

**291. Health Policy and the Aged.** Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Examination of political, economic, and social forces that shape health policy for the aged, identifying failings in those policies within framework of broader health policy problems. Mr. Wallace

**292. Communications and Media Development in Health Promotion/Education.** Lecture, three hours; field practice, one hour. Prerequisites: course 270 or prior social sciences courses or consent of instructor. Selected aspects of communications planning, social marketing, mass media, and communications evaluation theory and practice. Ms. Glik

**293. Social and Behavioral Research in AIDS: Roundtable Discussion (2 units).** (Formerly numbered 298.) Review and discussion of research programs directed toward identification of psychosocial, biobehavioral, environmental, and community factors related to prevention and control of AIDS/HIV. Mr. Morisky

**294. Social and Behavioral Factors of AIDS/HIV: A Global Perspective.** (Formerly numbered 298.) Prerequisites: course 100 and Epidemiology 100 or prior social sciences courses, or consent of instructor. Overview of social and behavioral factors which influence both the transmission as well as prevention of HIV/AIDS throughout the world. Mr. Morisky

**296A-296L. Advanced Research Topics in Behavioral Sciences and Health Education (2 to 4 units each).** Prerequisite: consent of instructor. Advanced study and analysis of current topics in behavioral sciences and health education. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. S/U grading: 296A. AIDS Prevention. Mr. Morisky

**Population and Family Health**

**296M-296Z. Advanced Research Topics in Population and Family Health (2 to 4 units each).** Prerequisite: consent of instructor. Advanced study and analysis of current topics in population and family health. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. S/U grading: 296M. Advanced Research Methods. Ms. Bourque

**Behavioral Sciences and Health Education**

**400. Field Studies in Public Health (2 or 4 units).** (Formerly numbered Public Health 400.) Prerequisite: consent of instructor. Field observation and studies in selected community organizations for health promotion or medical care. Students must file field placement and program training documentation on form available from Student Affairs Office. May not be applied toward M.S. minimum course requirement; four units may be applied toward 44-unit minimum total required for M.P.H. degree.

**411. Introduction to Cancer Control Research.** (Formerly numbered 288A.) Prerequisites: Medicine M293 and three courses in behavioral sciences and health education core, or consent of instructor. Provides students with working knowledge of cancer control objectives for the nation, rationale and various phases of cancer control research, and presentation of cancer control interventions, including smoking cessation/prevention, cancer screening, and dietary and psychosocial interventions. Ms. Bastani, Ms. Gritz

**Population and Family Health**

**M417. Injury Prevention Strategies and Countermeasures (2 units).** (Same as Epidemiology M417.) Prerequisites: Epidemiology 100 or equivalent, consent of instructor. Lectures with discussion on injury prevention strategies and countermeasures, including critical review of effectiveness in the public health context. Emphasis on major public health injury problems from assaultive, self-inflicted, or unintentional causes. S/U or letter grading. Mr. Kraus, Ms. Sorenson

**430A. International Health Agencies and Programs.** (Formerly numbered 470A.) Prerequisite: consent of instructor. Historical development and functions of international health organizations. Key problems and trends in international health. Bilateral programs, medical/religious missions, private foundations, and others disseminating information, money, and services.

Mr. Neumann

**430B. Advanced Issues in International Health.** (Formerly numbered 470B.) Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. In-depth focus on major health care issues confronting recipient less-developed countries and donors of technical and financial assistance.

Mr. Neumann

**431. Research in Women's Health: Theories and Methods.** (Formerly numbered 471A.) Prerequisite: consent of instructor. Interdisciplinary perspective critically examining research on women's health. Overview of scientific inquiry and methods; gender roles; status attainment and medical sociology. Review of current data on women's health.

Ms. Upchurch

**M432. Perinatal Health Care: Principles, Programs, and Policies.** (Formerly numbered 432.) (Same as Obstetrics and Gynecology M432.) Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Comprehensive examination of perinatal health care, including perinatal epidemiology, outcome measures, public programs, controversies surrounding new technology, regionalization, organization of services at federal, state, and county levels, and medical/legal issues.

Ms. Gifford

**433. Reproductive Health: Demographic Applications.** (Formerly numbered 471C.) Introductory aspects of population dynamics: reproductive biology (male and female); contraceptive methods; fertility-related behaviors and STDs; methods to measure contraceptive (life tables) and program (evaluation) effectiveness.

Ms. Upchurch

**434A. Maternal and Child Health in Developing Areas.** (Formerly numbered 472A.) Prerequisite: course 231 or consent of instructor. Major health problems of mothers and children in developing areas, stressing causation, management, and prevention. Particular reference to adapting programs to limited resources in cross-cultural milieu.

Mr. Galal, Ms. Neumann

**434B. Recent Developments in Maternal and Child Health in Disadvantaged Countries (2 units).** (Formerly numbered 472B.) Prerequisite: course 231 or consent of instructor. Analytic in-depth consideration of recent advances in the field of international maternal and child health, with special reference to developing countries.

**436A-436B. Child Health, Programs, and Policies.** (Formerly numbered 436.) Prerequisite: Health Services 100. Course 436A is prerequisite to 436B. Examination of history of child health policy trends and determinants of health, structure, and function of health service system; needs, programs, and policies affecting especially at-risk populations.

Mr. Halfon

**437. Preventive Medicine and the Family.** (Formerly numbered 473E.) Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. Comprehensive review and evaluation of scientific background and application of principles of preventive medicine, with primary focus on the family and the disadvantaged.

Mr. Neumann

**438. Research Seminar: Community Child Health Services (2 units).** (Formerly numbered 473F.) Discussion, one hour; laboratory, one hour; field trips, two hours. Prerequisite: consent of instructor. Examination and development of evaluation strategies for existing community child health services at the local level and development of evaluation strategies for selected topics in programmatic areas. Emphasis on collaborative research and consultation skills, with participation of local health department personnel.

**439. Health Services in Child Day Care.** (Formerly numbered 473G.) Lecture, two hours; discussion, two hours; one field trip, three hours. Prerequisite: consent of instructor. Assessment of needs, planning, and development of health and nutrition services for young children in day care and related child development programs.

**440. Child Health Policy.** (Formerly numbered 473H.) Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Analysis of development and characteristics of child health programs and policies; issues related to health services for children examined according to chronological development of child; relationship of health programs to programs of nutrition, day care, education, and welfare; strategies for achieving change and politics of developing a child health policy.

Mr. Halfon

**441. Planning and Development of Family Health Programs.** (Formerly numbered 475.) Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. Theory, guidelines, and team exercise for planning community health/family planning projects in the U.S. and in developing countries. Phases include community needs identification; goal setting; budget and work plan development; funding; staffing; evaluation design; data and cost analysis; and project presentation.

Mr. Neumann

**443. Assessment of Family Nutrition.** (Formerly numbered 477.) Prerequisite: course 231 or consent of instructor. Assessment of nutritional status of families in developing countries, with special reference to limited resources, terrain, and cross-cultural considerations, stressing anthropometric methods and techniques.

Ms. Harrison, Ms. Neumann

**444. Anthropometric and Dietary Aspects of Nutritional Assessment.** (Formerly numbered 478.) Lecture, two hours; laboratory, two hours. Prerequisite: course 443 or consent of instructor(s). Practical skills in anthropometric and dietary assessment, including selection of appropriate methods, data gathering and handling, and analysis and presentation.

Ms. Neumann

**445. Food and Nutrition Planning: Policies and Programs in World Context.** (Formerly numbered 479.) Lecture, two hours; discussion, two hours. Prerequisite: course 434A or consent of instructor. Discussion of policies regarding improvement of food supplies and their global impact on health of disadvantaged families, including review of effect of many factors, with emphasis on need for multidisciplinary action, food and nutrition planning, and external assistance.

Ms. Jelliffe

**446. Nutrition Education and Training: Third World Considerations.** (Formerly numbered 479D.) Lecture, two hours; discussion, one hour; student participation, one hour. Prerequisite: course 434A or consent of instructor. Problems and priorities in nutrition education and training for families and health workers in Third World countries, including new concepts in primary health care services, mass media, communications, and governmental and international interventions.

Ms. Jelliffe

**447. Health Issues in the Middle East.** Prerequisite: course 200 or 231 or 434A or consent of instructor. Recommended: background in Islamic or Middle Eastern studies. Current health issues and problems of countries in the Middle East and implications for socioeconomic development. Review of economic, demographic, and cultural variation of the region to provide background for discussion of trends and patterns of health and nutritional status of population in the area.

Mr. Galal

## Behavioral Sciences and Health Education

**470. Introduction to Occupational Health Education.** (Formerly numbered 294.) Lecture, one hour; discussion; two hours; outside assignment, one hour. Prerequisites: course 270, two sociology or anthropology courses or equivalent, consent of instructor. Health education theory and practice as applied to occupational health and safety. Emphasis on design and evaluation of education programs dealing with health and safety issues for workplace settings.

**474. Self-Care and Self-Help in Community Health.** (Formerly numbered Public Health 474.) Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. Review of background, principles, concepts, programs, and research concerning the emerging field of self-care in health.

Mr. Katz

**480. Health Education in Clinical Settings.** (Formerly numbered Public Health 480.) Lecture, two hours; discussion, two hours. Prerequisites: courses 271, 282, Health Services 100, consent of instructor. Analysis of role, methods, and techniques of health education pertaining to hospitals, clinics, and patient education. Observation and discussion of clinical activities in the medical center in relation to the process of health education.

**482. Practicum: Health Education (4 or 8 units).** (Formerly numbered Public Health 482.) Discussion, two hours; fieldwork, 20 to 40 hours. Prerequisites: courses 270, 271, consent of instructor. Study of community and group-felt needs as reflected in behavior. Analysis of data for understanding, planning, implementing, and evaluating need-directed health education and medical care programs.

Ms. Sorini

**483. Social Interventions for Health Promotion and Evaluation.** (Formerly numbered Public Health 483.) Lecture, two hours; discussion, one hour; seminar, one hour. Prerequisites: courses 270, 271, or equivalent, one social sciences or research methods course, consent of instructor. Selected social intervention strategies for health promotion and health education programs. Emphasis on theories, working assumptions, methodologies, and impacts of selected strategies within contexts of planned change in health-related behaviors.

Mr. Kar

**487. Community Organization for Health.** (Formerly numbered 287.) Lecture, three hours; fieldwork, four to six hours. Prerequisites: course 270, three public health, sociology, or anthropology courses or equivalent. Theory and practice of community organizations, including models and strategies of community organization and their application to health problems and health policy. Particular attention to use of community organization for health promotion and to change public policy.

Mr. Brown

## Special Studies

**490. Professional Writing for Public Health (2 units).** (Formerly numbered Public Health 490.) Prerequisite: consent of instructor. Practice in writing reports, grant proposals, abstracts, and article-length research papers. Analyzing rhetorical and stylistic features of essays in various professional journals to help participants improve both their prose style and their editorial abilities. S/U or letter grading.

**495. Teacher Preparation in Public Health (2 units).** (Formerly numbered Public Health 495.) Prerequisites: 18 units of cognate courses in area of specialization, consent of department chair. May not be applied toward master's degree minimum total course requirement. May be repeated for credit. S/U grading.

**501. Cooperative Program (2 to 8 units).** (Formerly numbered Public Health 501.) Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. No more than eight units may be applied toward master's degree minimum total course requirement; may not be applied toward minimum graduate course requirement. S/U grading.

**502. UCLA/Hawaii Western Consortium Exchange (4 to 16 units).** (Formerly numbered Public Health 502.) Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken at University of Hawaii, Manoa, as part of UCLA/UH Western Consortium Exchange Program. Only the equivalent of eight quarter units taken at UH may be applied toward degree. Extra units may be applied toward department requirements by petition to Public Health Student Affairs Office. UH letter-graded courses appear on UCLA transcript with letter grades, while UH Cr/NCr-graded courses appear as S/U grades. Grade points from these courses are not counted in UCLA grade-point average.

**596. Directed Individual Study or Research (2 to 8 units).** (Formerly numbered Public Health 596.) Prerequisites: graduate standing, consent of instructor. Individual guided studies under direct faculty supervision. Only four units may be applied toward M.P.H. and M.S. minimum total course requirement. May be repeated for credit.

**597. Preparation for Master's Comprehensive or Doctoral Qualifying Examinations (2 to 8 units).** (Formerly numbered Public Health 597.) Prerequisites: graduate standing, consent of instructor. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

**598. Master's Thesis Research (2 to 8 units).** (Formerly numbered Public Health 598.) Prerequisite: consent of instructor. Only four units may be applied toward M.P.H. and M.S. minimum total course requirement; may not be applied toward minimum graduate course requirement. May be repeated for credit. S/U grading.

**599. Doctoral Dissertation Research (2 to 8 units).** (Formerly numbered Public Health 599.) Prerequisite: consent of instructor. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

## Environmental Health Sciences

56-070 Center for the Health Sciences, (310) 825-7675

### Professors

Climis A. Davos, Ph.D., *Chair*  
Curtis D. Eckhart, Ph.D.  
John R. Froines, Ph.D.  
William C. Hinds, Sc.D.  
Mohammad G. Mustafa, Ph.D.  
Irwin H. Suffet, Ph.D.  
Arthur M. Winer, Ph.D.  
Robert A. Mah, Ph.D., *Emeritus*

### Associate Professors

Richard F. Ambrose, Ph.D.  
Shane Que Hee, Ph.D.  
Jane L. Valentine, Ph.D.

### Assistant Professor

L. Donald Duke, Ph.D.

### Lecturers

Larry Baresi, Dr.P.H.  
Frank C. Gomez, Dr.P.H.  
Mario Panaqua, B.A.  
Walter Wegst, Ph.D.

### Adjunct Assistant Professors

Nabil El-Sayed, Ph.D.  
Zorana Ercegovac, Ph.D.  
Wen-Chen Victor Liu, Ph.D.  
Edward J. O'Neill, M.D., M.P.H.  
David M. Pekelney, Ph.D.  
Diane M. Perry, Ph.D.  
Diane L. Saber, Ph.D.

### Associate Field Program Supervisor

Robert G. Lindberg, Ph.D.

## Scope and Objectives

The Department of Environmental Health Sciences focuses its research and educational activities on the protection of human health from biological, chemical, and physical hazards in the environment. Its graduates are highly trained scientists and professionals capable of identifying and measuring agents of environmental concern; evaluating the health, environmental, and all other impacts of such agents; developing means for their effective management; and evaluating alternative policies directed at improving and protecting environments. Such training is accomplished through several degree programs which offer specialized study in selected academic areas of environmental health sciences such as air pollution, environmental chemistry, environmental management, environmental toxicology, industrial hygiene, and water quality. Graduates of the department pursue careers in the private or public sector as researchers, educators, managers, policymakers, and/or practitioners.

The department offers M.S. and Ph.D. degrees in Environmental Health Sciences and, through the School of Public Health, the M.P.H. and Dr.P.H. degrees with a specialization in environmental health sciences. In addition, a unique doctoral degree (Doctor of Environmental Science and Engineering — D.Env.) is offered by the interdepartmental Environmental Science and Engineering Program which is administered through the department.

## Requirements for Graduate Degrees

### Admission

Descriptive brochures and applications for the department, as well as for the Environmental Science and Engineering program, may be obtained together with the *Announcement of the UCLA School of Public Health* by writing to the Administrator, Department of Environmental Health Sciences, 56-070 CHS, UCLA, Los Angeles, CA 90024-1772.

The preferred deadline for graduate applications is December 15, 1993, for Fall Quarter 1994 admission. *Applications received after the deadline have considerably reduced opportunities for admission, financial aid, and housing.*

### Master's Applicants

The department requires the following:

- (1) A bachelor's (or master's) degree in chemistry, physics, biology, engineering, or other appropriate field. Preparation should include at least one year of chemistry (including organic chemistry or biochemistry), physics, biology, and mathematics through calculus.
- (2) A junior/senior grade-point average of at least 3.0.
- (3) A combined (verbal and quantitative) Graduate Record Examination (GRE) score of at least 1,100.
- (4) A score of at least 550 on the Test of English as a Foreign Language (TOEFL) for international students whose native language is other than English.

### Doctoral Applicants

The department requires the following:

- (1) A bachelor's degree in chemistry, physics, biology, engineering, or other appropriate field. Preparation should include at least one year of chemistry (including organic chemistry or biochemistry), physics, biology, and mathematics through calculus.
- (2) A junior/senior grade-point average of at least 3.0.
- (3) A master's degree in a related field with a grade-point average of at least 3.5 for graduate studies.
- (4) A combined (verbal and quantitative) Graduate Record Examination (GRE) score of at least 1,200.
- (5) A score of at least 550 on the Test of English as a Foreign Language (TOEFL) for international students whose native language is other than English.

## Master of Science Degree

The Master of Science is a research-oriented degree which includes the preparation of a thesis or comprehensive examination and a major written report. Academic areas of concentration include air pollution, environmental chemistry, environmental management, environmental toxicology, industrial hygiene, and water quality.

See Schoolwide Programs at the end of this chapter for information on the M.P.H. degree.

### Course Requirements

You must complete at least one year of graduate residence at the University of California and a minimum of 10 full courses, at least five of which must be graduate courses in the 200 or 500 series. However, you must also take additional courses as required by your area of concentration. No more than 18 full courses may be required for the degree. Only one 596 course (four units) and one 598 course (four

units) may be applied toward the total course requirement; only four units of either course may be applied toward the minimum graduate course requirement. Environmental Health Sciences 597 may not be applied toward the degree requirements.

Required school core courses include Biostatistics 100A, 100B, and Epidemiology 100. Required department core courses include Environmental Health Sciences 101, 201 (may be repeated for credit), 210, 230, 240, 250, 410A, 410B, M411, 598 (courses 101 and 210 are not required of industrial hygiene majors). Each core course may be waived if you have taken a similar course elsewhere and can pass the waiver examination.

Only courses in which you receive a grade of C- or better may be applied toward the requirements for a master's degree. You must maintain an average of no less than 3.0 (B) in all courses required or elected during graduate residence at the University of California.

### Thesis Plan

If the thesis option is approved, a thesis committee is established. The committee approves the thesis prospectus before you file for advancement to candidacy. The thesis must be acceptable to the thesis committee.

### Comprehensive Examination/Report Plan

If the comprehensive examination/report option is selected, you complete a research activity (Environmental Health Sciences 596) of at least eight units and prepare an in-depth written report on it which must be approved by your adviser and one other faculty member approved by the department chair. A written comprehensive examination on your major area of study, prepared by a committee of faculty members, must also be passed. If you fail, you may be reexamined once.

### Ph.D. Degree

The Ph.D. is an advanced research degree that emphasizes depth of knowledge and research skills. The dissertation must demonstrate your ability for independent scholarly investigation. Academic areas of concentration include air pollution, environmental chemistry, environmental management, environmental toxicology, industrial hygiene, and water quality.

There is no foreign language requirement for the Ph.D.

See Schoolwide Programs at the end of this chapter for information on the Dr.P.H. degree.

### Course Requirements

You must fulfill the minimum requirements of the Graduate Division (see "Requirements for Graduate Degrees" in Chapter 3). Courses in your major field as recommended by your adviser and guidance committee are required, as are courses in a minor field related to environ-

mental health sciences in a department outside the School of Public Health that grants a Ph.D. or in the Department of Biostatistics. This usually consists of three or four full courses, as specified by the department offering the minor.

### Qualifying Examinations

Before advancement to candidacy, you must pass a departmental written examination in the major field and an oral qualifying examination. Normally no more than one reexamination is allowed. You must also complete the requirements in the minor field set forth by the offering department. When you are ready to take the University Oral Qualifying Examination, a doctoral committee is nominated.

After passing the University Oral Qualifying Examination, you may be advanced to candidacy and commence work on a dissertation in your principal field of study. The doctoral committee guides your progress toward completion of the dissertation.

### Final Oral Examination

A final oral examination is required of all candidates.

### Upper Division Courses

**100. Introduction to Environmental Health.** (Formerly numbered 155.) Lecture, three hours; discussion, one hour. Prerequisites: one course each in chemistry and biology, consent of instructor. Introduction to environmental health, including coverage of sanitary principles and chronic and acute health effects of environmental contaminants.

Mr. Eckhart, Mr. Mustafa

**101. Environmental Health.** (Formerly numbered 150.) Lecture, three hours; discussion, one hour. Prerequisites: one course each in chemistry and biology, consent of instructor. Broad coverage of environmental health, including airborne and waterborne pollutants; pollutants from urban industrial and agricultural wastes; pollution from pesticide chemicals, mining, and energy production and consumption; chemical food additives; and occupational exposure to chemical and physical hazards.

Mr. Eckhart, Mr. Mustafa

**199. Special Studies (2 to 4 units).** (Formerly numbered Public Health 199.) Prerequisites: senior standing, consent of instructor and department chair (based on written proposal outlining course of study). Individual undergraduate guided studies under direct faculty supervision. Study to be structured by instructor and student at time of initial enrollment. Only four units may be taken each term.

### Graduate Courses

**201. Seminar: Health Effects of Environmental Contaminants (2 units).** (Formerly numbered 255.) Prerequisites: courses 101, 210, 230, 250, consent of instructor. Emphasis on health effects of air, water, environmental pollutants on man and review of research literature. May be repeated for credit.

**210. Public Health and Environmental Microbiology.** (Formerly numbered 153.) Lecture, three hours. Prerequisites: one course each in biology, organic chemistry, and biochemistry, consent of instructor. Basic principles: cycling of matter, fates of natural and man-made compounds in the environment, wastewater and drinking water microorganisms and treatment, and public health microorganisms.

**211. Science and Politics of Environmental Regulation.** (Formerly numbered 259B.) Lecture, three hours. Prerequisite: consent of instructor. Analysis of how science, law, administration, economics, and politics influence state and national environmental regulation from formulation to implementation, including rule making, public participation, federalism, enforcement, and judicial review.

**220. Biological Effects of Air Pollution.** (Formerly numbered 152.) Lecture, three hours; discussion, one hour. Prerequisites: one course each in chemistry and biology, consent of instructor. Survey of biological effects and assessment methods of air contaminants present in urban, industrial, and occupational environments.

Mr. Mustafa

**225. Atmospheric Transport and Transformations of Airborne Chemicals.** (Formerly numbered 250B.) Prerequisites: science, engineering, or public health major, one year of calculus, and one course each in physics, organic chemistry, and physical chemistry, or consent of instructor. Role of regional or long-range transport, and atmospheric lifetimes and fates of airborne chemicals in phenomena such as photochemical smog, acid deposition, stratospheric ozone depletion, accumulation of greenhouse gases, and regional and global distribution of volatile toxic compounds.

Mr. Winer

**230. Environmental Management.** (Formerly numbered 154.) Lecture, four hours; discussion, one hour. Prerequisites: Economics 100, Political Science 142 or 143, Mathematics M112A, 115A, or equivalent. Introduction to foundations and principles of environmental management, decision making, and evaluation of environmental policies and programs.

Mr. Davos

**231. Environmental Decision Systems Analysis.** (Formerly numbered 254.) Lecture, four hours; discussion, one hour. Prerequisite: course 230. Techniques and models of systems analysis and concepts of general system theory as applied to comprehensive study, planning, evaluation, and management of environmental decision systems. Experimentation with relevant computer programs.

Mr. Davos

**232. Environmental Policy Decision Making.** (Formerly numbered 454.) Prerequisites: courses 230, 231, consent of instructor. Foundations, principles, and modeling of environmental policy decision making. Critical analysis of normative and behavioral models of action choices for protection and enhancement of environmental health, and development of an alternative model.

Mr. Davos

**240. Environmental Toxicology.** (Formerly numbered 253A.) Lecture, four hours; discussion, one hour. Prerequisite: one organic chemistry course. Essentials of toxicology, dose response, physical, chemical, or biological agents that adversely affect man and environmental quality.

Mr. Froines

**241. Environmental Toxicology: Trace Contaminants.** (Formerly numbered 253B.) Lecture, three hours; discussion, one hour. Prerequisite: one organic chemistry course. Essentials of toxicology in relation to trace contaminants.

Mr. Froines

**M249. Toxics Reduction: Science, Engineering, and Policy Issues.** (Same as Architecture and Urban Planning M262A and Chemical Engineering M290U.) Lecture, three hours. Prerequisites: Architecture and Urban Planning 260A and 260B, or consent of instructor. Public health experts, industrial engineers, and planners are being asked to assess risks biologically active chemicals present and to take such risks into account in planning process. Examination of potential for toxics reduction and current state of government and industry activities in this area.

Mr. Allen, Mr. Froines, Mr. Gottlieb, Ms. Roque

**250. Introduction to Occupational Safety and Health.** (Formerly numbered 156.) Prerequisite: consent of instructor. Scientific, legal policy, and historical issues in occupational health. Introduction to various related disciplines (e.g., occupational medicine, nursing, industrial hygiene, toxicology, epidemiology, health education).

Mr. Froines

**251. Occupational Disease.** (Formerly numbered 256.) Prerequisites: course 250, consent of instructor. Introduction to health effects of occupational exposures, including recognition, evaluation, and prevention of occupational diseases. Emphasis on concept of disease mechanisms, manifestations, and classification relevant to professionals in disciplines related to occupational health. Mr. Froines, Mr. Harber

**252D. Properties and Measurement of Airborne Particles.** (Formerly numbered 257E.) Prerequisites: one year each of chemistry, physics, and calculus. Basic theory and application of aerosol science to environmental health, including properties, behavior, sampling, and measurement of aerosols and quantitative problems. Mr. Hinds

**252E. Identification and Measurement of Gases and Vapors.** (Formerly numbered 257F.) Lecture, three hours; discussion, one hour; other, two hours. Prerequisites: course 250, one year each of chemistry, physics, and calculus, consent of instructor. Theoretical and practical aspects of industrial hygiene sampling and measurement of gases and vapors. Mr. Que Hee

**252F. Industrial Hygiene Measurements Laboratory (3 units).** (Formerly numbered 257G.) Corequisites: courses 252D, 252E. Limited to industrial hygiene majors. Laboratory methods for sampling, measurement, and analysis of gases, vapors, and aerosols found in occupational environment. Mr. Hinds, Mr. Que Hee

**252G. Industrial and Environmental Hygiene Assessment.** Lecture, one hour; discussion, two hours; laboratory, two hours; other, four hours. Prerequisites: courses 101, 250, 252D, 252E, 252F. Environmental and industrial hygiene sampling strategies and assessment via walk-through surveys, lectures, group discussion, actual field measurements, laboratory calibrations, and analyses and reports, with emphasis on chemical, physical, and ergonomic hazards. Mr. Froines, Mr. Hinds, Mr. Que Hee

**253. Physical Agents in the Work Environment (2 units).** (Formerly numbered 157H.) Prerequisites: course 250, one year of physics, consent of instructor. Physics, measurement methods, health effects, and control methods for radiation (ionizing and nonionizing), noise, and heat in the workplace environment. Mr. Hinds, Mr. Wegst

**254. Health Hazards of Industrial Processes.** (Formerly numbered 157G.) Lecture, two hours; four field trips. Prerequisites: courses 250, 255, consent of instructor. Industrial processes and operations and occupational health hazards that arise from them. Mr. Froines, Mr. Hinds, Mr. Que Hee

**255. Control of Airborne Contaminants in Industry.** (Formerly numbered 257H.) Lecture, two hours; laboratory, two hours. Prerequisites: courses 250, 252D, one year of physics, consent of instructor. Principles and applications of control technology to industrial environments, including general and local exhaust ventilation, air cleaning equipment, and respiratory protection. Mr. Hinds

**256. Biological Monitoring in Occupational/Environmental Health.** (Formerly numbered 257I.) Lecture, two hours; discussion, one hour; assignments, two hours. Prerequisites: courses 101, 250, 252E, Biostatistics 100A, consent of instructor. Principles and application of biological monitoring for assessment of occupational exposure to organic and inorganic chemicals. Mr. Que Hee

**257. Critical Review of Scientific Basis of Occupational Standards.** (Formerly numbered 259A.) Prerequisites: courses 240, 250, 251, Epidemiology 100, consent of instructor. Designed to provide students with opportunity to review scientific basis for association of selected occupational exposures with disease. Special emphasis on critical evaluations of the literature. Attention specifically to interface of science and regulatory standards.

**258. Identification and Analysis of Hazardous Waste (2 units).** (Formerly numbered 258C.) Prerequisites: courses 250, 252E, Biostatistics 100A, consent of instructor. Designed to define, identify, label, and quantify hazardous wastes and how workers should be protected. Provides a critical understanding of all analytical aspects of hazardous waste. Mr. Que Hee

**261. Chemical Behavior of Aquatic Systems.** (Formerly numbered 251.) Lecture, three hours. Prerequisites: course 101, Chemistry 11A, 11B, Mathematics 3A. Chemistry of ocean waters, rivers, groundwaters, and water treatment systems. Topics include thermodynamics of natural waters, acids and bases, carbon dioxide cycle, solubility reactions, oxidation and reduction, plus applied problems. Ms. Valentine

**262. Environmental Microbiology.** (Formerly numbered 252.) Lecture, three hours. Prerequisites: one course each in microbiology and biochemistry. Basic concepts of eutrophication, indicator organisms, aquatic microbes; assessment of biological treatment practices in water reuse and/or purification.

**263. Geochemistry of Groundwater (2 units).** (Formerly numbered 151A.) Prerequisites: Biostatistics 100A, Chemistry 11A, 103, Earth and Space Sciences 1, consent of instructor. Geochemistry of groundwater as impacted by the geologic environment and other natural factors and changes in composition due to water use.

**264. Fate and Transport of Organic Chemicals in the Aquatic Environment.** (Formerly numbered 213.) Prerequisite: bachelor's degree in science, engineering, geophysics, chemistry, biology, or public health. Evaluation of how and where and in what form and concentration organic pollutants are distributed in aquatic environments. Study of mass transport mechanisms moving organic chemicals between phases, biological degradation and accumulation, and chemical reactions. Effect of humic substances on these processes. Mr. Suffet

**400. Field Studies in Environmental Health Sciences (2 or 4 units).** (Formerly numbered Public Health 400.) Prerequisite: consent of instructor. Field observation and studies in selected community environmental health organizations. Students must file field placement and program training documentation on form available from Student Affairs Office. May not be applied toward M.S. minimum course requirement; four units may be applied toward 44-unit minimum total required for M.P.H. degree.

**401. Environmental Measurements.** (Formerly numbered 450.) Lecture, two hours; laboratory, four hours. Prerequisites: course 101, Chemistry 11A, 11CL, consent of instructor. Instrumental methods for laboratory and field applications to assess quantity of environmental pollutants in air, food, and water, and to assess degree of exposure to such factors as noise and radiation. Ms. Valentine

**410A. Instrumental Methods in Environmental Sciences.** (Formerly numbered 410.) Lecture, four hours; discussion, two hours; other, two hours. Prerequisites: one year each of physics, chemistry, and biology, consent of instructor. Theory and principles of instrumental methods through lectures and group discussions. Mr. Que Hee, Mr. Suffet

**410B. Instrumental Methods Laboratory in Environmental Health Sciences.** (Formerly numbered 410.) Lecture, one hour; discussion, one hour; laboratory, four hours; other, two hours. Prerequisites: course 101, one year each of physics, chemistry, and mathematics, consent of instructor. Laboratory techniques and instrumentation used in preparation and analysis of biological, environmental, and occupational samples. Mr. Panaqua, Mr. Que Hee, Mr. Suffet

**M411. Environmental Health Sciences Seminar (2 units).** (Same as Environmental Science and Engineering M411.) Prerequisite: consent of instructor. Required of graduate students in environmental health sciences for one term each year. Current topics in environmental health sciences and environmental science and engineering. May be repeated for credit. S/U grading.

**461. Water Quality and Health.** (Formerly numbered 451.) Lecture, three hours; discussion, one hour. Prerequisites: courses 101, 401, consent of instructor. Introduction to water quality, with coverage of hydrology, water chemistry, and various chemical contaminants that may affect human health. Various treatment methods and health implications. Ms. Valentine

**462. Environmental Hygiene and Appropriate Technologies (2 units).** (Formerly numbered 452.) Prerequisite: consent of instructor. Environmental sanitation of water supplies in rural and developing areas. Review of water quality problems and solutions for nonurban, developing community. Technical, socioeconomic, and cultural problems associated with maintenance and delivery of high water quality.

**470. Environmental Hygiene Practices (2 units).** (Formerly numbered 457.) Prerequisites: courses 101, 230, 401, Epidemiology 100, consent of instructor. Field principles and practices of environmental sanitation as applicable to the sanitarian. Topics include theory, code enforcement, and inspection procedures for applicable environmental topic areas. Mr. Gomez

**495. Teacher Preparation in Environmental Health Sciences (2 units).** (Formerly numbered Public Health 495.) Prerequisites: 18 units of cognate courses in area of specialization, consent of department chair. May not be applied toward master's degree minimum total course requirement. May be repeated for credit. S/U grading.

**501. Cooperative Program (2 to 8 units).** (Formerly numbered Public Health 501.) Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. No more than eight units may be applied toward master's degree minimum total course requirement; may not be applied toward minimum graduate course requirement. S/U grading.

**502. UCLA/Hawaii Western Consortium Exchange (4 to 16 units).** (Formerly numbered Public Health 502.) Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken at University of Hawaii, Manoa, as part of UCLA/UH Western Consortium Exchange Program. Only the equivalent of eight quarter units taken at UH may be applied toward degree. Extra units may be applied toward department requirements by petition to Public Health Student Affairs Office. UH letter-graded courses appear on UCLA transcript with letter grades, while UH Cr/NCr-graded courses appear as S/U grades. Grade points from these courses are not counted in UCLA grade-point average.

**596. Directed Individual Study or Research (2 to 8 units).** (Formerly numbered Public Health 596.) Prerequisites: graduate standing, consent of instructor. Individual guided studies under direct faculty supervision. Only four units may be applied toward M.P.H. and M.S. minimum total course requirement. May be repeated for credit.

**597. Preparation for Master's Comprehensive or Doctoral Qualifying Examinations (2 to 8 units).** (Formerly numbered Public Health 597.) Prerequisites: graduate standing, consent of instructor. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

**598. Master's Thesis Research (2 to 8 units).** (Formerly numbered Public Health 598.) Prerequisite: consent of instructor. Only four units may be applied toward M.P.H. and M.S. minimum total course requirement; may not be applied toward minimum graduate course requirement. May be repeated for credit. S/U grading.

**599. Doctoral Dissertation Research (2 to 8 units).** (Formerly numbered Public Health 599.) Prerequisite: consent of instructor. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

# Environmental Science and Engineering (Interdepartmental)

46-081 Center for the Health Sciences, (310) 825-9901

## Professors

Kyle D. Bayes, Ph.D. (*Chemistry and Biochemistry*)  
 Richard Berk, Ph.D. (*Sociology*)  
 David J. Chapman, Ph.D., D.Sc. (*Biology*)  
 Yoram Cohen, Ph.D. (*Chemical Engineering*)  
 Climis A. Davos, Ph.D. (*Environmental Health Sciences*)  
 John R. Froines, Ph.D. (*Environmental Health Sciences*)  
 Malcolm S. Gordon, Ph.D. (*Biology*)  
 William C. Hinds, Sc.D. (*Environmental Health Sciences*)  
 Raymond V. Ingersoll, Ph.D. (*Earth and Space Sciences*)  
 William E. Kastenberg, Ph.D. (*Mechanical, Aerospace, and Nuclear Engineering*)  
 Antony R. Orme, Ph.D. (*Geography*)  
 Michael K. Stenstrom, Ph.D. (*Civil Engineering*)  
 Irwin H. Suffet, Ph.D. (*Environmental Health Sciences*)  
 Stanley W. Trimble, Ph.D. (*Geography*)  
 Richard Turco, Ph.D. (*Atmospheric Sciences*)  
 Martin Wachs, Ph.D. (*Urban Planning; Distinguished Teaching Award*)  
 Arthur M. Winer, Ph.D. (*Environmental Health Sciences*), Director  
 Austin J. MacInnis, Ph.D., Emeritus (*Biology*)  
 David Okrent, Ph.D., Emeritus (*Mechanical, Aerospace, and Nuclear Engineering*)  
 Robert A. Mah, Ph.D., Emeritus (*Environmental Health Sciences*)  
 Richard L. Perrine, Ph.D., Emeritus (*Civil Engineering*)

## Associate Professors

David T. Allen, Ph.D. (*Chemical Engineering*)  
 Richard F. Ambrose, Ph.D. (*Environmental Health Sciences*)  
 Trudy Cameron, Ph.D. (*Economics*)  
 Margaret FitzSimmons, Ph.D. (*Urban Planning; Distinguished Teaching Award*)  
 Shane Que Hee, Ph.D. (*Environmental Health Sciences*)  
 Walter Reed, Ph.D. (*Earth and Space Sciences*)

## Assistant Professors

Warren Blier, Ph.D. (*Atmospheric Sciences*)  
 L. Donald Duke, Ph.D. (*Environmental Health Sciences*)

## Associate Field Program Supervisor

Robert G. Lindberg, Ph.D. (*Environmental Health Sciences*)

## Scope and Objectives

Enlightened management of the environment is necessary to maintain a suitable quality of life. Such management requires scientists trained in a multiplicity of environmental disciplines. These interdisciplinary, interactive skills are developed through the UCLA graduate Environmental Science and Engineering Program, leading to the Doctor of Environmental Science and Engineering (D.Env.) degree.

The goal of the program is to prepare professional environmental analysts to deal with the complexities of various courses of action on the environment and resources, to develop recommendations for sound environmental policies, and to devise means to implement policies adopted.

The present focus of the program, that of interdisciplinary training in the environmental sciences and its application, is a successful one. Graduates have been employed in technical assessment and management positions with governmental agencies, consulting firms, and industrial firms concerned with environment-related projects.

No undergraduate major is offered; however, studies can be arranged along several routes. Students with majors in the natural sciences, geography/environmental studies, public health, or engineering who have environmental or energy problem solving as a professional goal may wish to supplement their course preparation in consultation with the program faculty.

Although participating faculty members are mainly from the College of Letters and Science and the School of Engineering and Applied Science, the program is administered through the School of Public Health.

## Doctor of Environmental Science and Engineering

### Admission

In addition to meeting University minimum standards, you must have an excellent scholastic record (3.0 GPA in undergraduate work and 3.5 in graduate work) and must be acceptable to the interdepartmental committee. Your overall academic record, including a minimum combined Graduate Record Examination (GRE) score of 1,200, must reflect exceptional verbal and quantitative skills. Three letters of recommendation are required. You must hold a master's degree in engineering, public health, or one of the natural sciences to be formally admitted to the program.

Students with graduate training in fields of science and engineering who have not earned a master's degree may be considered for admission. In these cases you must show evidence of graduate training equivalent to the master's degree, including some research experience. Students with a bachelor's degree may be informally affiliated with the program while earning a master's degree in one of the participating departments.

All students must have taken the following preparation courses: (1) one year of introductory biology with laboratory; (2) one year of general chemistry with laboratory, including analytical methods, and one term of organic chemistry; (3) one course or equivalent experience in elementary programming and use of computer hardware and software; (4) one course in introductory geology with laboratory; (5) one year of calculus and one course in elementary statisti-

tics; (6) one year of introductory physics with laboratory. Any of the courses may be taken after you arrive at UCLA.

As English language skills are essential to completion of the curriculum, applicants for whom English is a second language are required to score successfully on the Test of English as a Foreign Language (TOEFL). If you are accepted into the program with identified language deficiencies, you must remove the deficiencies before being advanced to candidacy.

Subject to available funds, the program offers fellowships or graduate student researcher appointments to eligible first-year students. Prospective students may write for descriptive brochures to the Environmental Science and Engineering Program, School of Public Health, 46-081 CHS, UCLA, Los Angeles, CA 90024-1772.

## Major Fields or Subdisciplines

Specialties within the program include, but are not limited to, the assessment and management of hazardous substances in the air, soil, and water environments, migration of contaminants in groundwater, air pollution abatement, health risks of toxic substances, mitigation of ecosystem impacts, environmental assessment, and environmental problems common to the U.S. and Latin American countries. Research projects are conducted on a wide range of air and water pollution problems with biological and health impacts. Also, you may slant your work toward greater emphasis either on the science engineering aspect or on the science policy aspect of your specialty.

## Course Requirements

Course requirements consist of core courses, breadth courses, the environmental science and engineering seminar, and problems courses.

**Core and Breadth Courses** — Sixteen courses are required (one of which may be waived based on prior coursework), including four core courses offered by the program faculty. At least seven courses must be at the graduate level. Courses are selected from the following categories, with electives chosen in consultation with your faculty adviser.

**Environmental Science** — Seven courses, including Environmental Health Sciences 225 (core), 240, 264 (core), applied ecology (core), environmental assessment (core), and electives in environmental biology, microbiology, or ecology, in environmental geology, and in atmospheric sciences.

**Environmental Engineering** — Five courses, including engineering hydrology, water quality control systems, and three electives.

**Environmental Management, Law, and Policy** — Four courses, including environmental and health risk assessment (core), environmental law and policy, and two electives.

**Seminar** — You are required to enroll in Environmental Science and Engineering M411 twice per year.



**Problems Courses** — Problems courses constitute intensive multidisciplinary team research projects directed toward the solution of current environmental problems. Before proceeding to the problems course sequence, you must have completed a minimum of three core courses and seven breadth courses and have the approval of the program faculty. Twenty-four quarter units of the Environmental Science and Engineering 400 series (problems course sequence) are required. Enrollment in more than one problems course per term is not allowed. Normally problems course credit is earned only through courses offered by the program. However, you may petition the faculty for permission to earn problems course credit through multidisciplinary environmental projects offered in other departments at UCLA.

### Qualifying Examinations

The written qualifying examination is normally taken during your second year in residence, after completing the core courses and most of the breadth courses. If all or parts of the examination are failed, one and only one repeat is allowed — at the next offering. The written examination covers the material in the core courses, the breadth courses, and selected topics in classical and contemporary subjects in the program's areas of interest.

When you have completed all other course requirements and are in the final term of the problems courses, a doctoral committee is established. The committee conducts the University Oral Qualifying Examination, which explores the depth, breadth, and extent of your preparation, with appropriate emphasis on practical problems and situations. After successful completion of the oral examination and the problems course requirements, you are advanced to candidacy.

In case of failure, you may repeat the oral examination once after completing any additional coursework or individual study the doctoral committee may recommend.

### Internship

Once you have been advanced to candidacy, an 18- to 24-month internship in your field of interest is arranged at an outside institution. Arrangements for the internship are primarily your responsibility and must be approved by the doctoral committee, the interdepartmental committee, and the dean of the Graduate Division. Supervision during the field training experience is by your doctoral committee and the field program supervisor. During the internship, you must register for eight units of a 599 course in each academic-year term.

### Dissertation/Final Oral Examination

A dissertation is required and should be a scholarly treatment of the problem area in which you have worked, but not a description of the totality of the experience. It should show

evidence of critical thought and originality. No later than nine months after advancement to candidacy and the beginning of the internship, you are required to present a written prospectus, including an outline, of the dissertation and defend it before your doctoral committee. After completing the internship, you must return to UCLA to present an open seminar.

A final oral examination may be required at the option of your doctoral committee, focusing primarily on your internship experience and a defense of your dissertation. If the dissertation and your performance on the final oral examination are judged satisfactory, you are awarded the degree of Doctor of Environmental Science and Engineering (D.Env.).

### Graduate Courses

**400A. Environmental Science and Engineering Problems Course (8 units).** Prerequisite: consent of instructor and program chair. Primarily intended for students enrolled in environmental science and engineering doctoral program. Multidisciplinary technical and socioeconomic analysis and prognosis of significant current environmental problems. In Progress grading (credit to be given only on completion of course 400C).

**400B. Environmental Science and Engineering Problems Course (8 units).** Prerequisites: successful completion of course 400A, consent of instructor and program chair. Multidisciplinary technical and socioeconomic analysis and prognosis of significant current environmental problems. In Progress grading (credit to be given only on completion of course 400C).

**400C. Environmental Science and Engineering Problems Course (8 units).** Prerequisites: successful completion of course 400B, consent of instructor and program chair. Multidisciplinary technical and socioeconomic analysis and prognosis of significant current environmental problems.

**400D. Environmental Science and Engineering Problems Course (8 units).** Prerequisite: successful completion of course 400C and of internship approved by Environmental Science and Engineering Interdepartmental Committee. Multidisciplinary technical and socioeconomic analysis and prognosis of significant current environmental problems.

**410. Environmental Science and Engineering Workshop (2 units).** Prerequisite: consent of instructor. Primarily intended for students enrolled in environmental science and engineering doctoral program. Development of analytical or experimental skills essential to solution of environmental problems studied within courses 400A through 400D.

**M411. Environmental Health Sciences Seminar (2 units).** (Formerly numbered 411.) (Same as Environmental Health Sciences M411.) Prerequisite: consent of instructor. Required of graduate students in environmental health sciences for one term each year. Current topics in environmental health sciences and environmental science and engineering. May be repeated for credit. S/U grading.

**501. Cooperative Program (2 to 8 units).** Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual or Tutorial Studies (2 to 8 units).** Prerequisite: consent of instructor and program chair. Supervised investigation of advanced environmental problems. S/U grading.

## Epidemiology

71-254 Center for the Health Sciences, (310) 825-8579

### Professors

Lawrence R. Ash, Ph.D.  
Roger Detels, M.D., M.S.  
Ralph R. Frerichs, D.V.M., Dr.P.H., *Chair*  
Sander Greenland, Dr.P.H.  
Jess F. Kraus, Ph.D.  
Hal Morgenstern, Ph.D.  
Barbara R. Visscher, M.D., Dr.P.H.  
Allan Ralph Barr, Sc.D., *Emeritus*  
Ruth A. Boak, Ph.D., M.D., *Emerita*  
John M. Chapman, M.D., M.P.H., *Emeritus*  
John F. Schacher, Ph.D., *Emeritus*  
Telford H. Work, M.D., M.P.H., D.T.M.&H., *Emeritus*

### Associate Professor

Robert W. Haile, Dr.P.H.

### Assistant Professor

Matthew P. Longnecker, M.D., Sc.D.

### Lecturers

Jonathan D. Frisch, Ph.D.  
Martine Jozan, M.D., Dr.P.H., *Assistant Researcher*  
Constance S. Sullivan, Dr.P.H.  
Anne H. Coulson, *Senior Lecturer Emerita*,  
*Research Epidemiologist*

### Adjunct Professors

Brian E. Henderson, M.D.  
Thomas M. Mack, M.D., M.P.H.  
John M. Peters, M.D., M.P.H., Sc.D.

### Adjunct Associate Professors

David E. Coady, M.D., M.P.H.  
James R. Greenwood, Ph.D., M.P.H.  
Susan M. Preston-Martin, Ph.D., M.P.H.  
Gary H. Spivey, M.D., M.P.H.

### Adjunct Assistant Professors

Roberta M. Malmgren, Ph.D.  
Marc A. Strassburg, Dr.P.H.

### Scope and Objectives

Epidemiology has been defined as the study of the distribution and determinants of disease and injury in human populations. Epidemiologists study variations of disease in relation to such factors as age, sex, race, occupational and social characteristics, place of residence, susceptibility, exposure to specific agents, or other pertinent characteristics. Also of concern are the temporal distribution of disease, examination of trends, cyclical patterns, and intervals between exposure to causative factors and onset of disease. The scope of the field extends from study of the patterns of disease to the causes of disease and to the control or prevention of disease. What distinguishes epidemiology from other clinical sciences is the focus on health problems in population groups rather than in individuals.

Epidemiology is a young field with constantly expanding boundaries. The range of activities that may be at least partly epidemiologic in-

cludes determination of the health needs of populations, investigation and control of disease outbreaks, study of environmental and industrial hazards, evaluation of preventive or curative programs or treatments, and evaluation of the effectiveness and efficiency of intervention or control strategies. Many tools of epidemiology are borrowed from other fields such as microbiology, immunology, medicine, statistics, demography, and medical geography.

There is a growing core of purely epidemiologic methodology which includes not only statistical methodology and principles of study design, but a unique way of thinking that is beyond the rote memorization of rules. The contribution of epidemiology to any study involving groups of people is being increasingly recognized and demanded.

Epidemiologists may work in many settings, including international health agencies, state and local health departments, federal government agencies and health programs, health maintenance organizations, colleges and universities, and numerous research projects privately and publicly sponsored.

The objectives of the Department of Epidemiology fall into three broad categories — research, teaching, and community service. Degrees offered include the M.S. and Ph.D. in Epidemiology and, through the School of Public Health, the M.P.H. and Dr.P.H. with a specialization in epidemiology.

## Requirements for Graduate Degrees

### Admission

Application forms and the *Announcement of the UCLA School of Public Health* may be obtained by writing to the Student Affairs Office, School of Public Health, 16-071 CHS, UCLA, Los Angeles, CA 90024-1772. An *Epidemiology Handbook* may be obtained by writing to the Department of Epidemiology, 71-254 CHS, UCLA, Los Angeles, CA 90024-1772. Both the School of Public Health Application for Admission to Graduate Status and the *UCLA Application for Graduate Admission* must be completed. Three letters of recommendation are required, two from former professors and one from an employer (if no employer, three former professors) before an application is considered complete. It is your responsibility to ensure that the application file is complete.

The preferred deadline for graduate applications is December 15, 1993, for Fall Quarter 1994 admission. *Applications received after the deadline have considerably reduced opportunities for admission, financial aid, and housing.*

Applicants must meet the University minimum requirement of an acceptable bachelor's degree with a B (3.0) average in upper division coursework and/or prior graduate study. Exceptionally qualified applicants may be considered on an

individual basis. No screening examination is required for admission. If your undergraduate coursework has been deficient in breadth of fundamental training, you must take specified undergraduate courses after admission. Prior field experience is not required as a condition of admission, although a background of public health experience may be considered in your evaluation. In addition, you must be accepted by the Department of Epidemiology.

Applicants must also perform satisfactorily on a recent (within the last five years) Graduate Record Examination (GRE) General Test. Medical College Admission Test (MCAT) or Dental Admission Test (DAT) scores are accepted *only* for applicants *already holding* M.D. or D.D.S. degrees. Applicants at the master's level must have a minimum GRE combined (verbal and quantitative) score of 1,100. Applicants at the doctoral level need a minimum GRE combined (verbal and quantitative) score of 1,200. The analytical section is not required.

Refer to the *UCLA Application for Graduate Admission* for the Test of English as a Foreign Language (TOEFL) requirement for international applicants.

### Master's Applicants

Your prior program of study should include adequate preparation in mathematics, physical sciences, biological sciences, and social sciences, and typically includes two courses each in mathematics, biological sciences, social sciences; one course in physical sciences; and others that constitute an adequate preparation for the proposed area of specialization.

If your prior work in the biological, physical, mathematical, and social sciences does not constitute adequate preparation for your proposed area of specialization, you must include courses in those sciences in your graduate program; these may not be applied toward the minimum requirements for the degree.

### Master of Science Degree

The Master of Science is a research-oriented degree within the general field of epidemiology. It includes the preparation of a thesis or comprehensive examination/major written report. Teaching experience is not required.

See Schoolwide Programs at the end of this chapter for information on the M.P.H. degree.

### Course Requirements

You must complete at least one year of graduate residence at the University of California and a minimum of 56 units (38 units of core courses and 18 units of electives), at least 20 units of which must be in the 200 or 500 series. A maximum of one course from Epidemiology 290 or 291 and one 596 course (four units) may be applied toward the total course requirement. If you intend to write a thesis, four units of course 598 may also be applied toward the 18-unit elective requirement.

Required core courses include Epidemiology 200, 201A-201B, 220, 290 or 291, Biostatistics 100A or 110A, 100B or 110B; one additional statistics course (four units) in regression or multivariate methods to be approved by the department; and Biostatistics 403 or Epidemiology 410A-410B or equivalent. Equivalent courses must be approved by the department. Each core course may be waived if you have taken a similar course elsewhere and can pass the waiver examination. A waiver course does not reduce the unit requirements. Elective courses include all those offered by the department with the exception of those stated above.

All courses included for advancement to candidacy, except Epidemiology 290 or 291, must be taken for a letter grade (not on an S/U grading basis). You must maintain an average of no less than 3.0 (B) in all courses required or elected during graduate residence at the University of California. In addition, you must maintain an average of no less than 3.0 (B) in courses 200, 201A-201B, and 220.

A thesis or comprehensive examination must be completed before graduation.

### Thesis Plan

If the thesis option is approved, a thesis committee of faculty members is appointed by the dean of the Graduate Division on recommendation of the department. The committee approves the thesis prospectus before you file for advancement to candidacy. The thesis must be acceptable to the thesis committee.

### Comprehensive Examination Plan

If the comprehensive examination option is selected, a guidance committee of departmental faculty members is appointed. A comprehensive examination on your major area of study must be passed. If you fail, you may be reexamined once.

### Master of Science in Preventive Medicine and Public Health

The program is not admitting new students at this time.

### Ph.D. Degree

The Ph.D. is an advanced research degree that emphasizes depth of knowledge and research skills. The dissertation must demonstrate your ability for independent scholarly investigation.

There is no foreign language requirement for the Ph.D.; teaching experience is recommended but not required.

See Schoolwide Programs at the end of this chapter for information on the Dr.P.H. degree.

### Admission

In addition to the University minimum requirements, the department requires (1) satisfactory performance on the Graduate Record Ex-

amination (GRE), (2) at least a 3.0 junior/senior undergraduate grade-point average and at least a 3.5 GPA in graduate studies, and (3) approval by the department admissions committee, an academic adviser, and the department chair.

### Course Requirements

You must fulfill the course requirements for the M.S. degree in Epidemiology with an average of no less than 3.3 (B+) in Epidemiology 200, 201A-201B, and 220. Equivalent courses taken at other institutions may be used to fulfill these requirements subject to approval by the department. Continuation in the doctoral program is contingent on satisfying the 3.3 (B+) grade-point requirement. You must also take courses 202A, 202B or one additional statistics course beyond the M.S. requirements, at least three terms of course 292, and one pathobiology course (four units). The statistics and pathobiology courses must be approved by the department. In addition, you must take at least 12 units of graduate-level courses (excluding 500-level courses) outside the department, which must be selected with the approval of your academic adviser. If you have prior postbaccalaureate coursework, you may petition for substitution of part or all of the 12-unit requirement. Recommendation for the degree is based on your attainments rather than on the completion of specific courses.

### Qualifying Examinations

Before advancement to candidacy, you must pass the departmental written doctoral examination and the University Oral Qualifying Examination. Normally no more than one reexamination is allowed for the written examination. A doctoral committee is nominated and, if approved, administers the University Oral Qualifying Examination. After completing the course requirements and passing both the written and oral examinations, you may be advanced to candidacy and complete work on a dissertation in your principal field of study.

### Final Oral Examination

A final public defense of your dissertation is required.

### Upper Division Courses

**100. Principles of Epidemiology.** (Formerly numbered 112.) Lecture, two hours; discussion, four hours. Prerequisite: one full biological sciences course. Not open for credit to students with credit for course 200. Introduction to epidemiology, including factors governing health and disease in populations. Ms. Coulson, Mr. Kraus

**199. Special Studies (2 to 4 units).** (Formerly numbered Public Health 199.) Prerequisites: senior standing, consent of instructor and department chair (based on written proposal outlining course of study). Individual undergraduate guided studies under direct faculty supervision. Study to be structured by instructor and student at time of initial enrollment. Only four units may be taken each term.

## Graduate Courses

**200. Epidemiology I.** (Formerly numbered 114.) Lecture, two hours; laboratory, four hours. Prerequisites: Biostatistics 100A (may be taken concurrently), one full biological sciences course, consent of instructor. Not open for credit to students with credit for course 100. Introduction to epidemiology, including factors governing health and disease in populations. Mr. Frerichs, Ms. Visscher

**201A-201B. Epidemiologic Methods I and II (6 units each).** (Formerly numbered 211A-211B.) Lecture, four hours; discussion, two hours; other, 12 hours. Prerequisites: Biostatistics 100A, 100B, at least two upper division biology or social sciences courses, consent of instructor. Recommended but not required: course 100 or 200 or equivalent. Comprehensive coverage of concepts, principles, and methods in epidemiology, with emphasis on study design, statistical analysis, and causal inference. Theoretical and quantitative emphasis, focusing on investigation of disease etiology and other causal relationships in public health. Mr. Morgenstern

**202A-202B. Epidemiology: Theory and Methodology.** (Formerly numbered 211C-211D.) Prerequisites for course 202A: course 201B; for course 202B: course 202A, consent of instructor. Advanced principles and methods of epidemiologic analysis. Topics include relating prevalence and incidence, analysis of clustering and seasonality; measures of effect, sources of bias, regression to the mean, estimation and hypothesis testing in epidemiology; models for risk and rates; cohort analysis. S/U or letter grading. Mr. Greenland

**203. Topics in Theoretical Epidemiology (2 units).** (Formerly numbered 223.) Prerequisite: consent of instructor. Selected topics from current research areas in epidemiologic theory and quantitative methods. Topics selected from biologic models, epidemiologic models, problems in inference, model specification problems, design issues, analysis issues, and confounding. May be repeated for credit with consent of instructor. S/U grading. Mr. Greenland

**204. Advanced Applied Epidemiology.** Prerequisites: courses 201A-201B. Students submit written reviews of published research articles in applied epidemiology to be discussed in seminar format. Issues include study design, analysis, and causal inferences. New studies to be proposed and critiqued. S/U or letter grading. Mr. Haile

**210. Public Health Research Using Available Data (2 units).** (Formerly numbered 227.) Lecture, one hour; discussion, one hour. Prerequisites: courses 100, 410A or Biostatistics 403 or equivalent, Biostatistics 100A, consent of instructor. Presentations and discussions of availability, concepts, content, and usefulness of already collected data in public health research. Major emphasis on public data such as National Center for Health Statistics surveys, vital statistics, census, etc. Ms. Coulson

**M214. Immunology of AIDS (2 units).** (Formerly numbered Public Health M214.) (Same as Biology M293B, Microbiology M262B, and Microbiology and Immunology M262B.) Lecture, one hour; discussion, one hour. Prerequisites: Microbiology and Immunology 202A, 202B, 202C, 202D, M258B, M258C, or equivalent, consent of instructor. Lecture and student discussion of assigned publications. Topics include specific anti-HIV immune responses, activation of immune system by HIV, and basic mechanisms that underlie HIV-induced immunodeficiency. S/U or letter grading.

**220. Principles of Infectious Disease Epidemiology.** (Formerly numbered 210.) Lecture, three hours. Prerequisites: course 100 or 200 or equivalent, consent of instructor. Ascertainment of infection, transmission, and epidemiological parameters rather than clinical and pathological aspects. Specific diseases discussed in depth to illustrate epidemiologic principles. Mr. Ash

**223A. Protozoal Diseases of Man.** (Formerly numbered 218A.) Prerequisite: consent of instructor. May be taken concurrently with course 223B. Comprehensive overview of systematics, morphology, biology, host/parasite relationships, public health problems, and control of protozoa parasitic in man and animals. Mr. Ash (odd years)

**223B. Protozoal Diseases of Man (2 units).** (Formerly numbered 218B.) Laboratory, four hours. Prerequisite or corequisite: course 223A. Laboratory methods of diagnosis and microscopic recognition of protozoa parasitic in man and animals. Intestinal protozoa and organisms occurring in blood and tissues of their hosts and pathology associated with these infections. Mr. Ash (odd years)

**224A. Helminthic Diseases of Man.** (Formerly numbered 220A.) Prerequisite: consent of instructor. May be taken concurrently with course 224B. Comprehensive overview of systematics, morphology, biology, host/parasite relationships, public health problems, and control of nematodes, trematodes, and cestodes parasitic in man and animals. Mr. Ash (even years)

**224B. Helminthic Diseases of Man (2 units).** (Formerly numbered 220B.) Laboratory, four hours. Prerequisite: consent of instructor. Diagnosis and practical microscopic recognition of nematodes, trematodes, and cestodes parasitic in man and animals. Pathology produced by these infections. Mr. Ash (even years)

**227. AIDS: A Major Public Health Challenge.** (Formerly numbered 212D.) Prerequisites: course 100 or 200 or equivalent, Biostatistics 100A or 110A, consent of instructor. Presentation of epidemiologic, biologic, psychological, and clinical characteristics of AIDS and HIV-1 infection. Discussion of policy implications and intervention strategies. S/U or letter grading. Mr. Detels

**M228. Biology of HIV (2 units).** (Same as Microbiology and Immunology M275.) Prerequisites: course 100 and Biostatistics 100A or equivalent, two biology courses, consent of instructor. Overview of virologic and immunologic aspects of HIV disease for epidemiology or other health disciplines. Brief discussion of clinical manifestations and biosafety in the laboratory. S/U or letter grading. Ms. Giorgi

**230. Epidemiology of Sexually Transmitted Diseases.** (Formerly numbered 212L.) Prerequisites: course 100 or 200, consent of instructor. Sexually transmitted diseases; medical/biological aspects, epidemiology and control in developed and developing countries. S/U or letter grading. Ms. Visscher

**240. Cardiovascular Epidemiology.** (Formerly numbered 212E.) Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. Topics include definition, pathogenesis, descriptive epidemiology, magnitude of risk factors, strategies for prevention, lipoprotein metabolism, epidemiology of diabetes, hypertension, and chronic lung disease. Mr. Longnecker

**241. Epidemiology of Neurologic Disease (2 units).** (Formerly numbered 212G.) Prerequisites: course 100 or 200, consent of instructor. Epidemiologic characteristics of selected chronic neurologic diseases, with particular emphasis on etiology and possible control. Ms. Visscher

**242. Epidemiology of Cancer.** (Formerly numbered 215A.) Prerequisites: course 100 or 200, consent of instructor. Etiological concepts and mechanisms. Pathogenesis, diagnosis, and classification of neoplastic diseases. Epidemiologic principles and methods as applied to cancer. Classical studies in cancer epidemiology. Models of causal association. Mr. Haile

**243. Epidemiology of Cancer (2 units).** (Formerly numbered 215B.) Lecture, one hour; discussion, one hour. Prerequisites: course 242, consent of instructor. Current issues in cancer epidemiology, including etiologic research, screening programs, prevention. Mr. Haile

**244. Research Methods in Cancer Epidemiology (2 units).** (Formerly numbered 225.) Prerequisites: course 100, Biostatistics 100A, consent of instructor. Biologic, quantitative, philosophical, and administrative considerations in epidemiologic cancer research. Hypothesis specification and choice of study design. Uses of descriptive epidemiology, cohort studies, case control studies. Clustering, screening, and cancer control. Means of identifying subjects and controls. Design of instruments. Sources of bias and confounding. Mr. Mack

**246. Epidemiology of Aging (2 units).** Prerequisites: course 100 or 200 or equivalent, consent of instructor. Epidemiologic methods of estimating present and future burdens of aging: morbidity, disability, and dependency. Epidemiology of major disabling conditions affecting the elderly. Evaluation of possible intervention strategies. Methodologic issues in geriatric epidemiology. S/U or letter grading. Ms. Maimgren

**251. Epidemiology of Nonintentional Injuries.** (Formerly numbered 212I.) Lecture, three hours; discussion, two hours. Prerequisites: course 100 or 200, Biostatistics 100A, consent of instructor. Pertinent epidemiology methods for study of nonintentional trauma, including that from motor vehicle crashes, occupational exposures, falls, and other major external causes, which focus on research approaches, data sources, analytical techniques. Substantive findings on related subproblem areas presented for critical review. Mr. Kraus

**252. Epidemiology of Assault, Homicide, and Suicide (2 units).** (Formerly numbered 212K.) Lecture, two hours; discussion, one hour. Prerequisites: course 100 or 200, consent of instructor. Presentation and evaluation of epidemiologic research approaches to study of violent injury, including description of incidence, study design, risk factor analysis, and control evaluation. Mr. Kraus

**253. Acute Traumatic and Chronic Repetitive Injuries from Work-Related Exposures (2 units).** Lecture, two hours; discussion, one hour. Prerequisites: course 100 or equivalent, Biostatistics 100A, consent of instructor. Lectures and discussions on magnitude, scope, research approaches, and intervention strategies for work-related acute traumatic and chronic repetitive (musculoskeletal) injuries. Emphasis on injury research methods for all external causes of injury, utilizing epidemiology for high-risk group and risk-factor identification and injury prevention. S/U or letter grading. Mr. Kraus

**260. Environmental Epidemiology.** (Formerly numbered 213.) Lecture, two hours; discussion, one hour; independent study, three hours. Prerequisites: course 100 or 200, consent of instructor. Methodological problems and approaches of epidemiology for assessing health impact of major types of environmental exposure. Mr. Spivey

**261. Occupational Epidemiology.** (Formerly numbered 212J.) Lecture, two hours; discussion, two hours. Prerequisites: course 100 or 200 or equivalent, consent of instructor. Methodological considerations, approaches, and limitations in epidemiological studies of occupational groups and environments. Mr. Kraus

**263. Genetic Epidemiology (2 units).** (Formerly numbered 226.) Prerequisites: course 100 or 200, consent of instructor. Proper design, analysis, interpretation, and application of analytical methods used by genetic epidemiologists, including studies of familial prevalence, twins, migrants, genetic marker-disease associations, and more complex analyses of genetic models. Mr. Haile

**264. Meta-Analysis in Epidemiology (2 units).** Lecture, 90 minutes; discussion, 30 minutes. Prerequisites: courses 201A-201B, Biostatistics 406 or one multivariate analysis course beyond 100C or 200C. Designed to teach epidemiology doctoral students how to conduct and evaluate a meta-analysis of epidemiologic data. Mr. Longnecker

**266. Nutritional Epidemiology.** (Formerly numbered M266.) Lecture, two hours; discussion, one hour; laboratory, one hour. Prerequisites: courses 201A-201B, Biostatistics 100D or 110C, one prior nutrition course, consent of instructor. Designed to prepare students for conduct of research relating diet to health. Topics include methods of diet assessment, error in measurement of diet, methods of adjusting for energy intake in epidemiologic analysis, and analysis of epidemiologic data relating diet to disease. Mr. Longnecker

**270. Epidemiology and Health Policy (2 units).** (Formerly numbered 217.) Prerequisites: courses 100 or 201A-201B, Biostatistics 100B or 110B, Health Services 100, consent of instructor. Application of epidemiologic methods and findings in health services research, population health planning, and health policy to provide framework for integrating causal inference with decision making. Emphasis on conceptual and methodologic issues confronting researchers, clinicians, planners, administrators, and legislators. Mr. Morgenstern

**M276. Structure and Function of Nutrients Implicated in Etiology of Chronic Disease.** (Same as Community Health Sciences M267.) Lecture, two hours; discussion, one hour; laboratory, one hour. Prerequisite: one prior organic chemistry course. Basic nutrition course for public health and science majors. Mr. Longnecker

**280. Parasitic Diseases and Global Health.** (Formerly numbered 212F.) Prerequisite: consent of instructor. Overview of major human parasitic diseases in terms of their biology, occurrence, distribution, and transmission in nature; diseases they cause and impact they have on health of populations; interaction with other disease states; and interventional strategies for their control. Mr. Ash

**281. Epidemiology for Developing Countries.** (Formerly numbered 415.) Prerequisites: courses 100 and/or 200, Biostatistics 100A, consent of instructor. Uses of epidemiology for assessing the burden of illness in the community, establishing program priorities, and developing disease intervention or prevention strategies. Mr. Frerichs

**282. Rapid Epidemiologic Surveys in Developing Countries.** (Formerly numbered 418.) Prerequisites: courses 100 and/or 200, Biostatistics 100A, 100B, consent of instructor. Microcomputer-assisted planning and organizing of epidemiologic surveys in developing countries, including teaching of methods for two-stage cluster sampling, training interviewers, and use of microcomputers to develop questionnaires, select sample population, process and analyze data, and prepare final report. Mr. Frerichs

**290. Seminar: Epidemiology — Infectious and Tropical Disease (2 units).** (Formerly numbered 222.) Prerequisite: consent of instructor. Review of research on specific diseases of public health importance. May be repeated for credit. S/U grading.

**291. Seminar: Epidemiology — Methodology (2 units).** (Formerly numbered 221.) Prerequisites: course 100 or 200, consent of instructor. Review of current epidemiologic research contained in recent medical literature. May be repeated for credit. S/U or letter grading.

**292. Advanced Seminar: Epidemiology (2 units).** (Formerly numbered 229.) Prerequisites: course 201B, consent of instructor. Current research in epidemiology. May be repeated for credit. S/U grading.

**293. International HIV/AIDS Seminar (2 units).** Prerequisite: consent of instructor. Ongoing discussion of worldwide pandemic of HIV/AIDS, with emphasis on problems of surveillance, reporting, and intervention. Discussion of recent literature. Presentations by fellows from other countries. S/U grading. Mr. Detels

**400. Field Studies in Epidemiology (2 or 4 units).** (Formerly numbered Public Health 400.) Prerequisite: consent of instructor. Field observation and studies in selected community organizations for health promotion or medical care. Students must file field placement and program training documentation on form available from Student Affairs Office. May not be applied toward M.S. minimum course requirement; four units may be applied toward 44-unit minimum total required for M.P.H. degree.

**410A. Management of Epidemiologic Data (2 units).** (Formerly numbered Public Health 410A.) Prerequisites: course 100, Biostatistics 100A (one course may be taken concurrently with consent of instructor). Concepts, collection, and management of data, with particular emphasis on data bases in chronic infectious diseases. Introduction to personal computers and appropriate software for epidemiologic studies. Ms. Coulson

**410B. Management of Epidemiologic Data (2 units).** (Formerly numbered Public Health 410B.) Prerequisites: course 410A or equivalent, consent of instructor. Data management for various epidemiologic study designs, confidentiality concerns; data management systems; introduction to mainframe computer. Ms. Coulson

**411. Research Resources in Epidemiology (2 units).** (Formerly numbered Public Health 411.) Lecture, one hour; discussion, one hour. Prerequisites: course 100 or 200, Biostatistics 100A, consent of instructor. Instruction and practical experience in use of varied bibliographic aids and sources of information, building of reference files, and presentation of research findings for publication. Ms. Coulson, Ms. Deeney

**414. Practical Epidemiologic Investigations (2 to 4 units).** (Formerly numbered Public Health 414.) Lecture, one to two hours; laboratory, one to two hours. Prerequisites: course 100 or 200 or equivalent, consent of instructor. Practical approaches to epidemic investigations presented through problem sets based on actual outbreaks. Data collection, analysis, and written presentation of findings. Mr. Strassburg and the Staff

**M417. Injury Prevention Strategies and Countermeasures (2 units).** (Formerly numbered Public Health 417.) (Same as Community Health Sciences M417.) Prerequisites: course 100 or equivalent, consent of instructor. Lectures with discussion on injury prevention strategies and countermeasures, including critical review of effectiveness in the public health context. Emphasis on major public health injury problems from assaultive, self-inflicted, or unintentional causes. S/U or letter grading. Mr. Kraus

**495. Teacher Preparation in Epidemiology (2 units).** (Formerly numbered Public Health 495.) Prerequisites: 18 units of cognate courses in area of specialization, consent of department chair. May not be applied toward master's degree minimum total course requirement. May be repeated for credit. S/U grading.

**501. Cooperative Program (2 to 8 units).** (Formerly numbered Public Health 501.) Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. No more than eight units may be applied toward master's degree minimum total course requirement; may not be applied toward minimum graduate course requirement. S/U grading.

**502. UCLA/Hawaii Western Consortium Exchange (4 to 16 units).** (Formerly numbered Public Health 502.) Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken at University of Hawaii, Manoa, as part of UCLA/UH Western Consortium Exchange Program. Only the equivalent of eight quarter units taken at UH may be applied toward degree. Extra units may be applied toward department requirements by petition to Public Health Student Affairs Office. UH letter-graded courses appear on UCLA transcript with letter grades, while UH Cr/Ncr-graded courses appear as S/U grades. Grade points from these courses are not counted in UCLA grade-point average.

**596. Directed Individual Study or Research (2 to 8 units).** (Formerly numbered Public Health 596.) Prerequisites: graduate standing, consent of instructor. Individual guided studies under direct faculty supervision. Only four units may be applied toward M.P.H. and M.S. minimum total course requirement. May be repeated for credit.

**597. Preparation for Master's Comprehensive or Doctoral Qualifying Examinations (2 to 8 units).** (Formerly numbered Public Health 597.) Prerequisites: graduate standing, consent of instructor. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

**598. Master's Thesis Research (2 to 8 units).** (Formerly numbered Public Health 598.) Prerequisite: consent of instructor. Only four units may be applied toward M.P.H. and M.S. minimum total course requirement; may not be applied toward minimum graduate course requirement. May be repeated for credit. S/U grading.

**599. Doctoral Dissertation Research (2 to 8 units).** (Formerly numbered Public Health 599.) Prerequisite: consent of instructor. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

## Health Services

31-269 Center for the Health Sciences, (310) 825-2594, 825-7863

### Professors

Ronald M. Andersen, Ph.D. (*Fred W. and Pamela K. Wasserman Professor of Health Services*), Chair  
Robert H. Brook, M.D., Sc.D.  
E. Richard Brown, Ph.D.  
Jonathan E. Fielding, M.D., M.P.H.  
Patricia A. Ganz, M.D.  
Charles E. Lewis, M.D., Sc.D.  
Marvin Marcus, D.D.S.  
Stuart O. Schweitzer, Ph.D.  
Paul R. Torrens, M.D., M.P.H.  
Lester Breslow, M.D., M.P.H., *Emeritus*  
Carl E. Hopkins, Ph.D., M.P.H., *Emeritus*  
Milton I. Roemer, M.D., M.P.H., *Emeritus*  
Max H. Schoen, D.D.S., Dr.P.H., *Emeritus*  
William Shonick, Ph.D., *Emeritus*

### Associate Professors

Emily K. Abel, Ph.D.  
Glenn A. Melnick, Ph.D.  
Thomas H. Rice, Ph.D.  
Robert O. Valdez, Ph.D.

### Assistant Professors

Roshan Bastani, Ph.D., *in Residence*  
Gerald F. Kominski, Ph.D., *Associate Chair*

### Lecturers

Geraldine Dallek, M.P.H.  
William Gurtner, M.H.A.  
Joe Hafey, M.P.A.  
Diana W. Hilberman, M.S.P.H.  
Hwai-Tai Lam, Ph.D.  
Arleen Leibowitz, Ph.D.  
Joyce Mann, Ph.D.

### Adjunct and Visiting Professors

Ellen Alkon, M.D., M.P.H., *Adjunct*  
Michael Bobrow, A.I.A., *Adjunct*  
William Comanor, Ph.D., *Visiting*  
Molly J. Coye, M.D., M.P.H., *Visiting*  
Caswell A. Evans, Jr., D.D.S., M.P.H., *Adjunct*  
Arlene Fink, Ph.D., *Adjunct*  
Jacqueline B. Kosecoff, Ph.D., *Adjunct*  
Ruth J. Roemer, J.D., *Adjunct, Researcher*

### Adjunct and Visiting Associate Professors

Raymond D. Goodman, M.D., M.P.H., *Adjunct*  
Shoshanna Sofaer, Dr.P.H., *Visiting*

### Adjunct Assistant Professor

John C. Lammers, Ph.D.

### Assistant Field Program Supervisor

Diana W. Hilberman, M.S.P.H.

## Scope and Objectives

The field of health services examines the organization and financing of various activities to prevent and treat disease. This includes programs in both the public and private sectors at all levels — local, state, and federal.

Faculty members come from such diverse fields as economics, management, law, statistics, operations research, planning, medicine, history, sociology, and political science. These diverse backgrounds are harmonized by their devotion to the analysis of problems in the financing and delivery of health services, with focus on populations rather than individual patients.

The Department of Health Services offers both practice-oriented and research-oriented graduate programs. The primary professional degree, the Master of Public Health (M.P.H.), includes training in various aspects of health administration such as policy formulation, health planning, organization, and management. For more advanced professional work, the Dr.P.H. degree offers education in the full scope of public health services and prepares candidates for leadership in community health work at all jurisdictional levels.

For those interested in careers in research and teaching, the department offers M.S. and Ph.D. degrees in Health Services. These programs maintain close ties with related activities in the Schools of Dentistry and Medicine, including the Robert Wood Johnson Clinical Scholars Program, the Program in Prevention, and the Cancer Control Division. The RAND/UCLA Center for Health Policy Study and the RAND/UCLA Center for Health Care Financing Research afford opportunities for joint activities with the RAND Health Sciences Program. Graduates of the academic degree pro-

grams pursue careers in universities, as well as in public and private agencies involved in health services research and health policy analysis.

## Requirements for Graduate Degrees

### Admission

Application forms and the *Announcement of the UCLA School of Public Health* may be obtained by writing to the Student Affairs Office, School of Public Health, 16-071 CHS, UCLA, Los Angeles, CA 90024-1772, or to the Department of Health Services, 31-269 CHS, UCLA, Los Angeles, CA 90024-1772. Both the School of Public Health Application for Admission to Graduate Status and the UCLA *Application for Graduate Admission* must be completed. Three letters of recommendation are required, two from former professors and one from an employer (if no employer, three former professors) before an application is considered complete. It is your responsibility to ensure that the application file is complete.

The preferred deadline for graduate applications is December 15, 1993, for Fall Quarter 1994 admission. *Applications received after the deadline have considerably reduced opportunities for admission, financial aid, and housing.*

Applicants must meet the University minimum requirement of an acceptable bachelor's degree with a B (3.0) average in upper division coursework and/or prior graduate study. Exceptionally qualified applicants may be considered on an individual basis. No screening examination is required for admission. If your undergraduate coursework has been deficient in breadth of fundamental training, you may be required to take specified undergraduate courses after admission. Prior field experience is not required as a condition of admission, although a background of public health experience may be considered in your evaluation. In addition, you must be accepted by and accommodated in the Department of Health Services.

Applicants must also perform satisfactorily on a recent (within the last five years) Graduate Record Examination (GRE). The Medical College Admission Test (MCAT), Dental Admission Test (DAT), or Law School Aptitude Test (LSAT) are not accepted. However, in some cases, individuals with a medical, dental, or law degree may waive the GRE requirement. Certain other criteria must be met, including licensure to practice in California. A written request must accompany applications of those individuals desiring a waiver of this requirement. Graduate Management Admission Test (GMAT) scores are accepted only for applicants to the joint M.B.A./M.P.H. program. Applicants at the master's level must have a minimum GRE combined (verbal and quantitative) score of 1,100. Applicants at the doctoral level need a minimum GRE combined (verbal and quantitative) score of 1,200. The analytical section is not required.

Refer to the UCLA *Application for Graduate Admission* for the Test of English as a Foreign Language (TOEFL) requirement for international applicants.

### Master's Applicants

Your prior program of study should include adequate preparation in mathematics, physical sciences, biological sciences, and social sciences, and typically includes two courses each in mathematics, biological sciences, social sciences; one course in physical sciences; and others that constitute an adequate preparation for the proposed area of specialization.

If your prior work in the biological, physical, mathematical, and social sciences does not constitute adequate preparation for your proposed area of specialization, you must include courses in those sciences in your graduate program; these may not be applied toward the minimum requirements for the degree.

### Master of Science Degree

The Master of Science is a research-oriented degree within the general field of health services. It includes the preparation of a thesis or comprehensive examination/major written report. Teaching experience is not required.

See Schoolwide Programs at the end of this chapter for information on the M.P.H. degree.

### Course Requirements

You must complete at least one year of graduate residence at the University of California and 17 full courses, at least five of which must be graduate courses in the 200 or 500 series. Only one 596 course (four units) and one 598 course (four units) may be applied toward the total course requirement; only four units of either course may be applied toward the minimum graduate course requirement (10 courses). Health Services 597 may not be applied toward the degree requirements.

Required school core courses include Biostatistics 100A, 100B, and Epidemiology 100. Each core course may be waived if you have taken a similar course elsewhere and can pass the waiver examination.

Required department core courses include Health Services 200A-200B-200C, 237A-237B, 237C. You are strongly encouraged to take Biostatistics 200A, 200B, and Epidemiology 201A-201B. Elective courses should be selected from the 200 or 500 series in consultation with your adviser.

Only courses in which you receive a grade of C- or better may be applied toward the requirements for a master's degree. You must maintain an average of no less than 3.0 (B) in all courses required or elected during graduate residence at the University of California.

### Thesis Plan

If the thesis option is approved, a thesis committee is established. The committee approves the thesis prospectus before you file for advancement to candidacy. The thesis must be acceptable to the thesis committee.

### Comprehensive Examination/Report Plan

If the comprehensive examination/report option is approved, a guidance committee of faculty members is appointed. A written comprehensive examination on your major area of study must be passed. If you fail, you may be reexamined once.

The preparation of a major written research report is required; it must be approved by the guidance committee which also must certify successful completion of all degree requirements.

### Master of Science in Preventive Medicine and Public Health

The program is not admitting new students at this time.

### Ph.D. Degree

The Ph.D. is an advanced research degree that emphasizes depth of knowledge and research skills. The dissertation must demonstrate your ability for independent scholarly investigation.

There is no foreign language requirement for the Ph.D.; teaching experience is recommended but not required.

See Schoolwide Programs at the end of this chapter for information on the Dr.P.H. degree.

### Admission

In addition to the University minimum requirements, the department requires (1) satisfactory performance on the Graduate Record Examination (GRE), (2) completion of the M.S. in Health Services or an appropriately related field (students with an M.P.H. need to satisfy the course requirements of the M.S. in Health Services before or after admission), (3) at least a 3.0 junior/senior undergraduate grade-point average, at least a 3.5 GPA in graduate studies or demonstrated superiority in graduate work, and at least a B in each of the mandatory core courses, (4) a positive recommendation by the department to the School of Public Health, (5) approval by the doctoral admissions committee and the department chair. Screening examinations may be required.

### Course Requirements

In addition to the requirements for the M.S. in Health Services, you must take Health Ser-

vices 249H, Biostatistics 200A, 200B, and Epidemiology 201A-201B. A cognate with at least three courses (12 units) from a department that grants a Ph.D. degree is also required. Cognate courses must be at the graduate level and should be core theory and research courses for the discipline selected. Acceptable cognate areas include economics, epidemiology, history, political science, psychology, and sociology.

### Qualifying Examinations

Before advancement to candidacy, you must pass a written examination in the major field, complete the requirements in a minor field, and pass an oral qualifying examination on the major and minor fields. Normally no more than one reexamination is allowed. When you are ready to take the University Oral Qualifying Examination, a doctoral committee is nominated.

After passing the University Oral Qualifying Examination, you may be advanced to candidacy and commence work on a dissertation in your principal field of study. The doctoral committee guides your progress toward completion of the dissertation.

### Final Oral Examination

A final oral examination is required of all candidates.

### Upper Division Courses

**100. Health Services Organization.** (Formerly numbered 130.) Lecture, four hours; discussion, one hour. Prerequisite: four units of social sciences. Structure and function of American health care system; issues and forces shaping its future.

**131. Structure and Function of Health Care Facilities.** (Formerly numbered Public Health 131.) Lecture, two hours; discussion, two hours. Prerequisites or corequisites: course 100, consent of instructor. Introduction to structure, organization, and function of health care facilities.

**132. Financial and Managerial Accounting for Health Services Organizations.** (Formerly numbered 141.) Prerequisites: course 100 or equivalent, consent of instructor. Introduction to financial and managerial accounting and its application to the health services industry.

**133. Introduction to Health Economics.** (Formerly numbered 148.) Prerequisite: consent of instructor. Presentation of tools of economic analysis. Topics include introductory concepts of microeconomics, theory of demand for health insurance and health care, substitution of health personnel, hospital cost functions, and costs and benefits of health programs. Mr. Salehi

**134. Introduction to Comprehensive Health Planning.** (Formerly numbered Public Health 134.) Lecture, four hours; fieldwork, four hours. Prerequisite: one upper division microeconomics, statistics, calculus, or political science course. Concepts underlying health planning, state of the art, and some relevant literature. Mr. Melnick

**136. Introduction to Health Services Research.** (Formerly numbered 136A.) Prerequisites: Biostatistics 100A or equivalent, consent of instructor. Review of the field of health services research. Uses of quantitative methods and applications of conceptual/theoretical constructs (as well as methodologies) from social and behavioral sciences and epidemiology to studies of workings of health services. Mr. Lewis

**199. Special Studies (2 to 4 units).** (Formerly numbered Public Health 199.) Prerequisites: senior standing, consent of instructor and department chair (based on written proposal outlining course of study). Individual undergraduate guided studies under direct faculty supervision. Study to be structured by instructor and student at time of initial enrollment. Only four units may be taken each term.

## Graduate Courses

**200A-200B-200C. Health Systems Organization and Financing.** (Formerly numbered 230A-230B.) Lecture, four hours; discussion, two hours. In-depth analysis of health services systems in the U.S., using relevant theories, concepts, and models. **200A-200B.** Prerequisite: health services major. **200C.** Prerequisites: courses 200A-200B, and health services major or consent of instructor.

Mr. Andersen, Mr. Torrens

**M204A-M204B-M204C. Seminars: Pharmaceutical Economics and Policy.** (Formerly numbered M204.) (Same as Economics M204L-M204M-M204N.) Seminar, three hours every other week for three terms. Prerequisites: Economics 201A-201B-201C or equivalent, graduate standing in public health or economics, consent of instructor. Various topics in economics of pharmaceutical industry, including rates of innovation, drug regulation, and economic impact of pharmaceuticals. In Progress grading.

Mr. Comanor, Mr. Intriligator, Mr. Schweitzer

**214. Measurements of Effectiveness and Outcomes of Health Care.** Lecture, three hours. Prerequisites: courses 200A-200B-200C, 422, and Biostatistics 100A or equivalent, or consent of instructor. Historical perspective for development of health status measures and their utilization in assessment of outcomes and effectiveness in medical care. Review of current methods in context of current research and practice.

Ms. Ganz

**220. Seminar: Cost Containment.** (Formerly numbered 298.) Lecture, three hours. Through lectures and discussion of journal articles, analysis of success and failure of alternative methods of controlling U.S. health care costs. Examination of how other countries have controlled their costs.

Mr. Rice

**231. History of Public Health.** (Formerly numbered 435.) Discussion, three hours. Prerequisite: doctoral standing or consent of instructor. Emphasis on topics which illuminate current issues in public health policy. Discussion of historical perspectives on health care providers, health care institutions, health care reform movements, public health activities, childbirth, and AIDS.

Ms. Abel

**232. Governmental Health Services and Trends.** (Formerly numbered Public Health 232.) Prerequisites: course 100, two additional upper division social or behavioral sciences courses, consent of instructor. Systematic analysis of interface between organized programs of personal health services and governmental agencies at all jurisdictional levels. Study of changing relationships between traditional public health and newer medical care and quality control functions.

Mr. Shonick

**233. Health Policy Analysis.** (Formerly numbered Public Health 233.) Lecture, two hours; discussion, two hours. Prerequisites: course 100 or equivalent, three social sciences courses, consent of instructor. Conceptual and procedural tools for analysis of health policy, emphasizing role of analysis during various phases of the life cycle of public policy.

Mr. Valdez

**234. Health Services Organization and Management Theory.** (Formerly numbered 430.) Prerequisites: courses 100 or equivalent, 131, two upper division social sciences courses or equivalent, consent of instructor. Application of contemporary organization and management theory to systems that provide personal health care services. Environmental characteristics, missions/goals, structure and processes of health services organizations.

**235. Law, Social Change, and Health Service Policy.** (Formerly numbered Public Health 235.) Prerequisites: course 100, two upper division political science or sociology courses or equivalent, consent of instructor. Legal issues affecting policy formulation for environmental, preventive, and curative health service programs.

Ms. Roemer

**236. Microeconomic Theory of the Health Sector.** (Formerly numbered 238.) Lecture, four hours; discussion, two hours. Prerequisites or corequisites: Biostatistics 100A or equivalent and intermediate microeconomics. Microeconomic aspects of the health care system, including health manpower substitution, choice of efficient modes of treatment, market efficiency, and competition.

Mr. Kominski, Mr. Schweitzer

**237A-237B. Special Topics in Health Services Research Methodology.** (Formerly numbered Public Health 237A-237B.) Lecture, one hour; discussion, three hours. Prerequisites: course 100, Biostatistics 100A, 100B, 100C, or equivalent, consent of instructor. In-depth consideration of problems in application of statistical and other quantitative methods in health services research. Critique of adequacy of study designs, appropriateness of analyses, and degree to which conclusions are supported by data. S/U grading.

Mr. Rice, Mr. Valdez

**237C. Issues in Health Services Methodologies.** Prerequisites: courses 237A-237B, doctoral student standing. Intended to assist students in understanding the research process and its application in study of health services in the U.S. Introduction to issues related to reporting, disseminating, and documenting research findings. S/U grading.

Mr. Valdez

**238. Politics of Health Care.** (Formerly numbered 138.) Prerequisite: course 100 or equivalent. Concepts and procedures for political analysis; national, state, and local politics in health care; examination of selected case studies.

Mr. Valdez and the Staff

**239. Aging and Long-Term Care.** (Formerly numbered Public Health 239.) Prerequisites: courses 100, 238, Community Health Sciences 270, or equivalent, consent of instructor. Long-term care of the chronically ill elderly examined from perspective of political and sociodemographic trends, including populations at risk, policy options, and alternative forms of care such as nursing homes, home care, and care by informal support systems.

Ms. Abel

**240. Health Care Issues in International Perspective.** (Formerly numbered Public Health 240.) Prerequisites: two health administration courses, two upper division social sciences courses, or equivalent, consent of instructor. Analysis of crucial issues in health care; manpower policy, economic support, health facilities, patterns of health service delivery, regulation, planning, and other aspects of health care systems probed in settings of European welfare states, developing nations, and socialist countries.

Mr. Roemer

**M241. Women, Health, and Aging: Policy Issues (2 or 4 units).** (Formerly numbered Public Health M241.) (Same as Social Welfare M290D.) Lecture, three hours; discussion, one hour. Prerequisites: two upper division social sciences courses, two upper division biological sciences courses, or equivalent, consent of instructor. Social and economic context of older women's aging, major physical and psychological changes older women experience, delivery of health services to this population, and policies that respond to their health needs.

Ms. Abel

**244. Seminar: Health Services and Policy Evaluation.** (Formerly numbered Public Health 244.) Prerequisites: Biostatistics 100A, 100B, basic courses in program evaluation and health services organization, or equivalent, doctoral standing, consent of instructor. Seminar applying alternative evaluation research theories and methods to health service organizations and systems. Topics include linking evaluation criteria to policy decisions, theories, and previous research; political and organizational context of evaluation; utilization of findings; and meta-evaluation. S/U or letter grading.

**245. Society's Response to Aging.** (Formerly numbered Public Health 245.) Prerequisites: two health services courses, two upper division social sciences courses, or equivalent, consent of instructor. Examination of central issues of health care delivery to the elderly in the U.S. Topics include demographic trends, economic characteristics, health status, demand for care, health care financing, long-term care, and continuum of care for the aged.

**246. Seminar: Special Populations — Health Service Policy Issues.** (Formerly numbered 448.) Prerequisites: courses 200A-200B-200C, 232, 238, or equivalent, consent of instructor. Limited to doctoral students or M.S. and M.P.H. students with advanced degrees. Doctoral-level seminar which focuses on health services for selected priority population groups, integrating scientific, organizational, economic, ethical, and political evidence as a basis for public policy. Different populations may be selected for attention each year.

Mr. Brown

**247. Research Topics in Health Economics.** (Formerly numbered Public Health 247.) Prerequisites: courses 100, 236, 446 or equivalent, consent of instructor. Seminar in economic analysis of current health services issues. Critical examination of studies pertaining to health manpower, health care costs and controls, diffusion of technology, and cost-benefit analysis of health programs.

Mr. Schweitzer

**248. Small Area Planning for Resources for Personal Health Service.** (Formerly numbered Public Health 248.) Lecture, three hours; laboratory, two hours. Prerequisites: courses 100, 134, or equivalent, consent of instructor. General planning theory and health planning theory, methods, and experience with planning for personal health care resources for small geographic areas. Determining needs and estimating required utilization levels and health care resources. Survey of elements of different disciplines used in areawide health planning. Laboratory projects and exercises designed to implement studies of health planning theory and methods.

**249A-249Z. Special Topics in Health Services (2 to 4 units each).** (Formerly numbered Public Health 249A-249Z.) Prerequisites: consent of instructor, additional prerequisites for each offering as announced in advance by department. Advanced seminars covering current issues and special topics in health policy, health financing, and organization and administration of health services. Sections offered on regular basis, with topics announced in preceding term. May be repeated for credit with topic change:

**249D. Principles of Organization Leadership: Applications in Public Health and Welfare.** Lecture, three hours; discussion, three hours. Prerequisite: M.P.H. or M.S. degree or equivalent or consent of instructor. Examination of principles and models of organization leadership, including presentation by current leaders in the fields of health and welfare. Theories and empirical investigations of leadership qualities.

Mr. Andersen, Mr. Lammers

**249E. Health Policy Seminar.** (Formerly numbered Public Health 249E.) Prerequisites: courses 200A-200B-200C (may be taken concurrently), 236, Biostatistics 100A, 100B, or equivalent, consent of instructor. Limited to doctoral students and M.S. or M.P.H. students with advanced degrees. Public policy concerning payment for medical care services and characteristics of the market for those services: demand for care, fee-for-service and prepaid payment systems, regulation of price and capital investment, private sector efforts to control health care costs.

**249F. Quality Assessment and Assurance.** (Formerly numbered Public Health 249F.) Prerequisites: course 100, Biostatistics 100A, Epidemiology 100, one additional health services or epidemiology course, or equivalent, consent of instructor. Fundamental issues in quality assessment, quality assurance, and measurement of health status.

Mr. Brook

**249G. Medical Technology — Development, Diffusion, Assessment, and Health Services.** (Formerly numbered Public Health 249G.) Prerequisites: courses 200A-200B-200C, 238, or equivalent, one upper division policy analysis course. Doctoral-level seminar focusing on public policies that pertain to advancement of medical science and development of new technologies and promotion and regulation of their use. Mr. Kominski

**249H. Current Research Issues.** Discussion, two hours. Prerequisite: doctoral student standing. Review of articles in health services journals nominated as the best published during 1990. Analysis of articles to determine contribution to theory, methods, and/or implications for management or policy in health services organizations or health services as a field. S/U or letter grading. Mr. Andersen, Mr. Rice

**249I. Research Methodology.** Lecture, one hour; discussion, three hours. Prerequisites: courses 237A-237B, doctoral student standing. Theory-driven model building and specification, operationalization, data definition and documentation, data screening and transformation techniques, use of indexes and scales, and data reduction methods. Some hands-on measurement and analysis work. Research project with term-paper analysis required. Course builds on concepts and research methods learned in courses 237A-237B, 237C.

**249J. Mental Health Services.** Lecture, three hours. Prerequisites: courses 200A-200B-200C or doctoral standing or consent of instructor. Survey of contemporary American delivery of health services to emotionally and mentally ill and retarded. Analysis of characteristics of such services, with historical background of their evolution and projections of their future prospects.

**249K. Health Care Practice Guidelines, Variations in Care, and Patient Outcomes.** Lecture, three hours. Prerequisites: courses 200A-200B-200C, 422, Biostatistics 100A, 100B, graduate student standing. Participation of students in critical review and discussion of selected papers dealing with course topics, including small and large area variations in care, and development and implementation of clinical guidelines. Emphasis on implications for health policy. S/U grading. Ms. Ganz

**400. Field Studies in Health Services (2 or 4 units).** (Formerly numbered Public Health 400.) Prerequisite: consent of instructor. Field observation and studies in selected community organizations for health promotion or medical care. Students must file field placement and program training documentation on form available from Student Affairs Office. May not be applied toward M.S. minimum course requirement; four units may be applied toward 44-unit minimum total required for M.P.H. degree.

**422. Practices of Evaluation in Health Services: Theory and Methodology.** (Formerly numbered 422A-422B.) Lecture, three hours. Prerequisites: courses 200A-200B-200C or equivalent or consent of instructor. Introduction to health services evaluation. Examination and performance of specific evaluation procedures. Conducting of health services investigations, reporting results and methodologies. Ms. Bastani

**431. Managerial Processes in Health Service Organizations.** (Formerly numbered Public Health 431.) Lecture, one hour; laboratory, three hours. Prerequisites: course 234, consent of instructor. Managerial skills and behaviors applied to components of organizations at several levels: individual, interpersonal, group, intergroup, system, and interorganization. Unique features of health service organizations are stressed as applications are presented. Mr. Lammers

**432. Integrative Seminar: Health Services Management.** (Formerly numbered Public Health 432.) Prerequisite: course 431. Residents and preceptors are responsible for presenting cases of actual administrative problems for solution by teams of students and faculty.

**433. Health Service Organization Policy and Strategy.** (Formerly numbered Public Health 433.) Lecture, three hours; discussion, one hour. Prerequisites: courses 131, 234, 400 (at least six units), or equivalent, consent of instructor. Conceptual, analytical, and technical aspects of policy and strategy formulation in health service organizations. Special attention to structure and dynamics of competitive markets, corporate-level strategic planning and marketing, managerial ethics and values, organizational creativity/innovation. Mr. Gurtner

**434. Employer/Employee Health Management.** (Formerly numbered Public Health 434.) Lecture, two hours; discussion, two hours. Prerequisites: course 100, a combination of three graduate courses in health planning, hospital finance, health policy, health insurance, occupational health, health services research, and health information systems, or equivalent, consent of instructor. Preview and analysis of how employer and employee groups provide, sponsor, and manage health-related services for others. Mr. Fielding

**435. Management Science for Health Planning and Administration.** (Formerly numbered 132.) Lecture, three hours; laboratory, two hours. Prerequisites: Biostatistics 100A and either Biostatistics 403 or Management 404, or equivalent, consent of instructor. Introduction to use of quantitative analyses to support managerial and operational decisions in health services organizations. Topics include mathematical models for structuring decisions, resource allocation, inventory control, task sequencing, scheduling, and forecasting. Use of microcomputers.

**436. Financial Management of Health Service Organizations.** (Formerly numbered Public Health 436.) Prerequisites: courses 131, 132, 234, or equivalent, consent of instructor. Application of financial management and accounting principles to health care facilities, including unique financial characteristics of health care facilities, third-party reimbursement, cost finding and rate setting, operational and capital budgeting, auditing, and risk management. Mr. Kominski

**437. Legal Environment of Health Services Management (2 units).** (Formerly numbered Public Health 437.) Prerequisites: course 131 or equivalent, consent of instructor. General survey of legal aspects of health services management, including governance, agency, informed consent, medical malpractice, contracts, negligence, and case law relating to health facility operations.

**438. Issues and Problems of Local Health Administration.** (Formerly numbered Public Health 438.) Lecture, three hours. Prerequisites: course 100 or equivalent, Epidemiology 100, one additional health services course or equivalent, consent of instructor. Overview of administrative issues currently faced by local health departments, including providing public health programs during fiscal constraint, quality improvement, interagency relationships and partnerships, and political and public interactions. Ms. Alkon

**439. Dental Care Administration.** (Formerly numbered Public Health 439.) Lecture, three to four hours. Prerequisites or corequisites: Biostatistics 100A, Epidemiology 100, or equivalent. In-depth examination of several specific dental care policy issues: manpower, relationship of treatment to disease, national health program strategies, and evaluation mechanisms. Mr. Marcus

**440A. Health Information Systems: Organization and Management.** (Formerly numbered Public Health 440A.) Lecture, two hours; laboratory, three hours. Prerequisites: courses 200A-200B-200C or equivalent, consent of instructor. Principles of and systems related to organization and management of a health facility's health information system.

**440B. Health Information Systems: Organization and Management.** (Formerly numbered Public Health 440B.) Lecture, two hours; laboratory, three hours. Prerequisites: course 440A or equivalent, consent of instructor. Health and administrative research using clinical records. Principles of planning for routine and special studies. Individual investigation in methods of obtaining and processing data to meet needs of programs in institution and agency. Introduction to principles of medical auditing; analysis of medical and health services.

**441. Ambulatory Care in the U.S.** (Formerly numbered Public Health 441.) Seminar, three hours. Prerequisites: courses 132, 200A-200B-200C, and Management 403, or equivalent, or consent of instructor. Introduction to organization and management concepts, problems, and issues in ambulatory health services, including financial management and information systems requirements. Mr. Valdez

**442. Managed Health Care: Quality and Cost.** (Formerly numbered Public Health 442.) Lecture, three hours. Prerequisite: consent of instructor. Overview of issues related to growth, management, and planning of managed health care systems. Review of role of HMOs and PPOs, as well as discussion of managed care as a solution. Mr. Lammers

**443A. Preventive Medicine in Public Health Practice.** (Formerly numbered 413.) Lecture, two hours; discussion, two hours. Prerequisites: courses 100 or 200A-200B-200C, Biostatistics 100A, Epidemiology 100, graduate standing, consent of instructor. Development, current status, and potential of preventive medicine in public health practice, focusing on risk indicator approach (exercise, alcohol, stress, etc.), with consideration of program settings, delivery problems, and issues. Mr. Fielding

**443D. Advanced Hospital Financial Management Simulation.** (Formerly numbered Public Health 443D.) Lecture, one hour; discussion, one hour; laboratory, two hours. Prerequisites: courses 100, 132, 436, consent of instructor. Practical aspects of hospital management decisions in a changing environment examined through computer simulation, with particular attention to economic projections, demand patterns, investment programs, and health care regulations.

**443E. Advanced Hospital Financial Management Seminar.** (Formerly numbered Public Health 443E.) Prerequisites: courses 100, 131, 132, 436, or equivalent, consent of instructor. Hospital financial management, including reimbursement management, capital financing, and capital investment analysis, discussed and analyzed with respect to students' individual residency sites.

**444. Applied Methodology in Health Planning.** (Formerly numbered Public Health 444.) Lecture, three hours; fieldwork, four hours. Prerequisites: courses 200A-200B-200C, or equivalent, consent of instructor. Demonstration of methodology of health planning by involving students in formulation of actual health plan for existing agency in Los Angeles area. Mr. Melnick

**445. Strategic Planning and Marketing in Health Care.** (Formerly numbered 242.) Lecture, three hours; discussion, one hour. Prerequisites: courses 200A-200B-200C, Biostatistics 100A, 100B, or equivalent, consent of instructor. Survey course covering theory and applications of strategic planning and marketing concepts as they apply to health care organizations. Lectures and discussion of case studies for which students must prepare in advance, fieldwork, and micro-computer exercises. Mr. Melnick

**446. Financing Health Care.** (Formerly numbered Public Health 446.) Prerequisites: course 100, Economics 1, 2, or equivalent, consent of instructor. Patterns of health care financing by consumers, providers, third-party intermediaries; trends in health service use; expenditures, national health insurance, and international comparisons of health financing. Mr. Schweitzer



**447. State Health Policy Issues.** (Formerly numbered Public Health 447.) Seminar, three hours. Prerequisite: course 238. Focus on health policy development and implementation at state government level, with emphasis on financing, direct provision, and regulation of health care services, facilities, equipment technology, and manpower. Exploration of inter-governmental relationships.

**447D. Management of Health Maintenance Organizations.** (Formerly numbered Public Health 447D.) Lecture, three hours. Prerequisites: courses 100, 134, or equivalent, consent of instructor. Alternative approaches to fee-for-service for paying, providing, or arranging for delivery of health care services, and relating these approaches to national health policy.

**447E. Health Insurance Principles and Programs.** (Formerly numbered Public Health 447E.) Prerequisites: courses 100, 232, one additional health services course, or equivalent, consent of instructor. Examination of social, actuarial, and commercial assumptions underlying private health insurance. Comparison with government-sponsored health insurance. Analysis of diversity of voluntary medical care insurance plans under different sponsorships and with varied scopes of coverage and benefits and their implications for public and private medical care developments.

Mr. Shonick

**M448. Health Policy Issues for Dental Professionals (2 units).** (Formerly numbered M449.) (Same as Dentistry M422.) Prerequisites: course 100 or equivalent, Biostatistics 100A or equivalent, Epidemiology 100, consent of instructor. Current public health policy issues in dental health, including cost, financing, role of government, and quality assurance. S/U grading.

**M448D. Case Studies in Dental Practice (2 units).** (Formerly numbered M449D.) (Same as Dentistry M433A.) Provides students with practice methodology for evaluation of dental care settings. Didactic and field experience, providing foundation for evaluation of programs. S/U grading.

Mr. Marcus

**495. Teacher Preparation in Health Services (2 units).** (Formerly numbered Public Health 495.) Prerequisites: 18 units of cognate courses in area of specialization, consent of department chair. May not be applied toward master's degree minimum total course requirement. May be repeated for credit. S/U grading.

**501. Cooperative Program (2 to 8 units).** (Formerly numbered Public Health 501.) Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. No more than eight units may be applied toward master's degree minimum total course requirement; may not be applied toward minimum graduate course requirement. S/U grading.

**502. UCLA/Hawaii Western Consortium Exchange (4 to 16 units).** (Formerly numbered Public Health 502.) Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken at University of Hawaii, Manoa, as part of UCLA/UH Western Consortium Exchange Program. Only the equivalent of eight quarter units taken at UH may be applied toward degree. Extra units may be applied toward department requirements by petition to Public Health Student Affairs Office. UH letter-graded courses appear on UCLA transcript with letter grades, while UH Cr/NCr-graded courses appear as S/U grades. Grade points from these courses are not counted in UCLA grade-point average.

**596. Directed Individual Study or Research (2 to 8 units).** (Formerly numbered Public Health 596.) Prerequisites: graduate standing, consent of instructor. Individual guided studies under direct faculty supervision. Only four units may be applied toward M.P.H. and M.S. minimum total course requirement. May be repeated for credit.

**597. Preparation for Master's Comprehensive or Doctoral Qualifying Examinations (2 to 8 units).** (Formerly numbered Public Health 597.) Prerequisites: graduate standing, consent of instructor. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

**598. Master's Thesis Research (2 to 8 units).** (Formerly numbered Public Health 598.) Prerequisite: consent of instructor. Only four units may be applied toward M.P.H. and M.S. minimum total course requirement; may not be applied toward minimum graduate course requirement. May be repeated for credit. S/U grading.

**599. Doctoral Dissertation Research (2 to 8 units).** (Formerly numbered Public Health 599.) Prerequisite: consent of instructor. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

## Schoolwide Programs

16-071 Center for the Health Sciences, (310) 825-5516

### Master of Public Health

The M.P.H. is a professional degree in the field of public health. You are expected to focus on public health practice and to acquire a broad knowledge related to professional skills. Teaching experience is not required.

#### Admission

Application forms and the *Announcement of the UCLA School of Public Health* may be obtained by writing to the Student Affairs Office, School of Public Health, 16-071 CHS, UCLA, Los Angeles, CA 90024-1772. Both the School of Public Health Application for Admission to Graduate Status and the *UCLA Application for Graduate Admission* must be completed. Three letters of recommendation (with at least two from former professors) are required before an application is considered complete. It is your responsibility to ensure that the application file is complete.

The preferred deadline for graduate applications is December 15, 1993, for Fall Quarter 1994 admission. *Applications received after the deadline have considerably reduced opportunities for admission, financial aid, and housing.*

Applicants must meet the University minimum requirement of an acceptable bachelor's degree with a B (3.0) average in upper division coursework and/or prior graduate study. Exceptionally qualified applicants may be considered on an individual basis. If your undergraduate coursework has been deficient in breadth of fundamental training, you must take specified undergraduate courses after admission. Prior field experience is not required as a condition of admission, although a background of public health experience may be considered in your evaluation.

Applicants must also perform satisfactorily on a recent (within the last five years) Graduate Record Examination (GRE). The Medical College Admission Test (MCAT), Dental Admission Test (DAT), or Graduate Management Admission Test (GMAT) may be accepted in lieu of the GRE under certain circumstances.

Refer to the *UCLA Application for Graduate Admission* for the Test of English as a Foreign Language (TOEFL) requirement for international applicants.

Your prior program of study should include adequate preparation in mathematics, physical sciences, biological sciences, and social sciences, and typically includes two courses each in mathematics, biological sciences, social sciences; one course in physical sciences; and others that constitute an adequate preparation for the proposed area of specialization.

If your prior work in the biological, physical, mathematical, and social sciences does not constitute adequate preparation for your proposed area of specialization, you must include courses in those sciences in your graduate program; these may not be applied toward the minimum requirements for the degree.

Applicants must be one of the following:

- (1) Holders of a bachelor's degree from an accredited institution. Preparation in the sciences basic to public health must be adequate. Such sciences may include various combinations of (a) life sciences, (b) physical sciences and mathematics, (c) social sciences, (d) behavioral sciences. You are not expected to be prepared in all four of these fields, but a background in a suitable combination of these sciences is required.
- (2) Qualified physicians at UCLA in the General Preventive Medicine Residency.
- (3) Qualified students in the Latin American or African Area Studies articulated degree program or in the School of Dentistry, Management, or Medicine.

#### Specific Concentration Requirements

- (1) Students concentrating in *biostatistics* should have completed at least one year of calculus. Majors in mathematics, statistics, computer science, or a field of application in biostatistics are preferred.
- (2) Students concentrating in *environmental health sciences* should have a bachelor's (or master's) degree in chemistry, physics, biology, engineering, or other appropriate field. Coursework should include one year of general chemistry (including quantitative analysis) and two quarters or one semester of organic chemistry and/or biochemistry, mathematics through calculus, one year of biological sciences, and one year of physics. Substitutions for these requirements will be considered for applicants with an otherwise superior academic background.
- (3) Applicants to the one-year *health services organization* program must have a prior doc-

toral degree (M.D., D.D.S., J.D., Ph.D., or equivalent). Applicants with doctoral degrees from other countries should plan to take the two-year program; satisfactory performance on the GRE is required, and a personal interview is recommended.

### Course Requirements

You must complete at least one year of graduate residence at the University of California and a minimum of 11 full courses, at least six of which must be graduate courses and at least two of which must be 400-series courses. Only one 596 course (four units) may be applied toward the six graduate courses; 597 and 598 courses may not be applied toward the degree. No more than 18 full courses may be required for the degree.

Required school core courses include Biostatistics 100A or 110A, Community Health Sciences 100, Environmental Health Sciences 100 or 101, Epidemiology 100 (200, 201A-201B for epidemiology majors), and Health Services 100 (200A-200B-200C for health services majors). Each core course may be waived if you have taken a similar college-level course elsewhere and can pass the waiver examination.

The remaining courses are determined by your choice of an area of specialization as described below and include the requirement of one course in the 400 series. Field training in an approved public health program of up to 10 weeks (a minimum of four units but no more than eight) is required of candidates who have not had prior relevant field experience.

In addition to the core courses, at least three courses (two or four units) outside your area of specialization are strongly recommended.

Only courses in which you receive a grade of C- or better may be applied toward the requirements for a master's degree. S/U-graded courses may not be applied toward the degree requirements. You must maintain an average of no less than 3.0 (B) in all courses required or elected during graduate residence at the University of California.

### Areas of Specialization

Areas of specialization and typical course plans, in addition to mandatory courses, are listed below.

#### Biostatistics

Required department courses include Biostatistics 100A, 100B, and 100C (in exceptional circumstances, courses 110A, 110B, and 110C may be substituted); 200A; 402A, 402B (satisfies the field training requirement); 410 or 411 or 412; three courses from 403, 404, 405, 406. Epidemiology 201A and 201B are recommended. Elective courses should be selected in public health, biomathematics, or mathematics. Students whose mathematics preparation does not include sufficient calculus must take courses in the Mathematics Department while in the M.P.H. program.

#### Community Health Sciences

*Behavioral Sciences and Health Education* — Community Health Sciences 210, 211, 217, 270, 271, 282, 482 (eight units), and 487 are required. In addition, four of five elective courses from the list of specialty areas are required. Individual courses may not be applied toward the required course units. Additional courses may be elected, in consultation with your faculty adviser, from within the department or in other schools/colleges at UCLA. Normally two years or six terms are needed to complete the course requirements. Candidates with a prior doctoral degree or advanced preparation in a related field may complete an M.P.H. degree in one year. It is possible for students to elect an additional area of concentration in another area.

*Population and Family Health* — Emphasis is on population, family health, nutrition, family planning, reproductive and women's health, maternal and child health, and international health (including applied nutrition, aspects of training methodologies and curriculum design, communications strategies, community and primary health care). You are required to complete at least 20 units (for health professionals) or 24 units (for generalists) of area courses (including Community Health Sciences 596), plus courses 210, 400. Elective courses are selected in consultation with your faculty adviser.

Note: The population and family health area offers a sequence of courses in applied nutrition. The School of Public Health also maintains a joint M.P.H./Dietetic Internship program with the West Los Angeles Veterans Administration Medical Center and Hospital.

Students with a professional degree may graduate with an M.P.H. in one academic year (48 units). Students without a professional health degree need four to six terms (60 units) of study.

#### Environmental Health Sciences

You can obtain the M.P.H. with a concentration in air pollution, environmental chemistry, environmental management, environmental toxicology, industrial hygiene, and water quality.

Required department core courses include Biostatistics 100B, Environmental Health Sciences 201, 210, 230, 240, 250, 401 (or 410A and 410B). You also must take at least 12 additional units in the department at the 200 level or above and additional courses as required by your area of concentration. A total of eight units must be in the 400 series.

#### Epidemiology

The Biomedical Knowledge Screening Examination is required of all students except those with a prior doctorate in the health sciences (M.D., D.D.S., D.V.M., D.N.Sc.).

Required department core courses include Biostatistics 100B, Epidemiology 201A-201B,

220, 400 (for predoctoral students), 596 (for postdoctoral students). At least eight additional units must be selected from epidemiology courses in infectious and tropical diseases (M214, 223A, 223B, 224A, 224B, 227, M228, 230), quantitative methods (202A, 202B, 203), chronic diseases (240, 241, 242, 243, 244), problems of developing countries (280, 281, 282), injuries (251, 252, 253, M417), and other topics (204, 210, 246, 260, 261, 263, 270, M276, 410A, 410B, 411, 414).

You must also submit a report demonstrating competence in epidemiology. For predoctoral students the report may not be submitted prior to completion of course 400, which must be taken after completion of course 201B. Course 596, for postdoctoral students, may be taken concurrently with 201B. Students holding a doctorate in an appropriate biomedical science may petition for waiver of course 400.

#### Health Services

Required department core courses include Health Services 200A-200B-200C.

*Policy and Management* — This is a two-year program requiring 18 full courses, a summer internship in a local health care organization, and a major written research report. Required courses include Health Services 400, 422, Biostatistics 100B, Health Services 236 or Management 403, and five courses from Health Services 131, 134, 231, 233, 234, 235, 236, 239, 240, 244, 431, 433, 434, 435, 436, 441, 444, 446, 447E. You must select at least two additional electives and are encouraged to choose courses outside the department and/or School of Public Health.

*M.P.H./M.B.A.* — This is a three-year concurrent degree program requiring a minimum of 12 full courses (48 units) in the School of Public Health and a summer internship in a local health care organization. Required courses include Health Services 400 and 422. Management 402 may be substituted for Biostatistics 100A. For further information, refer to the listing under "Cooperative Degree Programs" later in this section.

*Health Services Organization* — This is a one-year program requiring a minimum of 12 full courses (48 units). Admission is limited to students with prior doctoral-level degrees (M.D., Ph.D., J.D., D.D.S., or equivalent). Health Services 236 or Management 403 is required.

### Comprehensive Examination Plan

You must pass a comprehensive examination in your department. If you fail, you may be reexamined once. The aim of the examination, as a culminating experience, is to assess your ability to select theories, methods, and techniques from across the content matter of a field, integrate and synthesize knowledge, and apply it to the solution of public health problems.

## Field Training

Field training in an approved public health program is required of candidates who have not had prior relevant field experience. A minimum of four units, but no more than eight, is required.

## International Health Studies

The school offers several options for students interested in international health. An internationally oriented focus can be pursued, to some extent, in each department within the school through linked international health courses offered throughout the year. Many other departments on campus have international health-related interests and courses relevant to health occupations in cross-cultural settings, including Urban Planning, Anthropology, and Education. UCLA has outstanding centers for research and education in foreign areas — Latin American Center, von Grunbaum Center for Near Eastern Studies, Center for Russian and East European Studies, Asian American Studies Center, and Coleman African Studies Center — with faculty members highly qualified in the history, culture, languages, and sociopolitical and economic aspects of these areas. International health students in the School of Public Health are encouraged to use the relevant resources of these centers to the fullest.

If you are interested, you should first apply to the department/area most relevant to your academic background and professional skills area, clearly indicating your international interests on the application. Successful applicants are directed to an internationally oriented adviser. The school has an international health committee to facilitate, coordinate, and integrate the many international health courses. All master's degree students must meet both the school and departmental requirements for the degree. Electives beyond the requirements may be courses with international content or those relevant to a career in international health.

## Cooperative Degree Programs

Following are descriptions of combined programs of study leading to the M.P.H. degree. In the articulated degree programs listed below, no course may be used for credit toward more than one degree.

### M.A.-African Area Studies/M.P.H.

The School of Public Health and the African Area Studies Program have an articulated degree program whereby you can work sequentially for the master's degree in African area studies and the Master of Public Health. By planning the major field emphasis in public health while working toward the M.A. in African Area Studies, it may be possible to shorten the amount of time it would normally take to complete both degrees.

Students interested in this articulated program should write to the Assistant Graduate Adviser,

African Area Studies Program, UCLA African Studies Center, and/or the Student Affairs Office, UCLA School of Public Health.

### M.A.-Latin American Studies/M.P.H.

The School of Public Health and the Latin American Studies Program have arranged an articulated degree program, organized to permit specializations within the M.A. and the M.P.H. degrees, with the award of both degrees after approximately three years of graduate study. Qualified students apply to the graduate adviser of the Latin American Studies M.A. degree program and to a relevant area of public health, such as (1) environmental and nutritional sciences, (2) epidemiology, (3) health education, (4) population and family health.

Potential applicants should contact the Graduate Adviser, Latin American Studies, UCLA Latin American Center, and/or the Public Health/Latin American Studies Articulated Degree Program Adviser, UCLA School of Public Health.

### M.B.A./M.P.H.

The School of Public Health, Department of Health Services, and the John E. Anderson Graduate School of Management offer a three-year concurrent degree program designed for students who desire a management career in health care and related fields. The program reflects the combined interest of employers, faculty, and students who recognize the increasing challenges facing managers in the health care industry and the need for highly skilled and sensitive individuals who can creatively take on these challenges. Students should request application materials from both the M.B.A. Admissions Office, John E. Anderson Graduate School of Management, and the Health Services Management Program, UCLA School of Public Health. GMAT scores are required for admission.

## Preventive Medicine Residency Program

An accredited residency in general preventive medicine is available to physicians through the School of Public Health. The residency is designed to prepare qualified physicians for leadership roles in preventive medicine and public health practice, research, and teaching. Completion of the program can lead to board eligibility in general preventive medicine and public health — a specialty recognized by the American Board of Preventive Medicine.

The residency currently consists of at least two years of work but may be completed over a longer period of time. The first part is comprised of formal studies leading to the Master of Public Health degree (generally in family health, epidemiology, or health services). Other areas (e.g., maternal and child health) may be considered on an individual basis. Application must be made both to the School of Public Health for admission to the M.P.H. program

and to the Preventive Medicine Residency Program.

The second part consists of supervised field training in preventive medicine and public health, which is individually organized for each resident's particular interests and needs. A variety of opportunities is available through UCLA, including close working relationships with the Los Angeles County Department of Health Services, the Jonsson Comprehensive Cancer Center, Cedars-Sinai Medical Center, Saint John's Community Clinic, Venice Family Clinic, other city and county health departments in the state, Canyon Ranch in Tucson, and the Institute for Aerobic Research in Dallas. New affiliations are developed as the need arises. Residents may also undertake studies toward qualification for a more advanced degree in public health — the Dr.P.H. or Ph.D. — or do research in collaboration with members of the faculty. Physician applicants who have completed M.P.H. studies at an accredited school of public health may be admitted directly into the field training part, although physicians who will complete their M.P.H. training at UCLA are preferred. A license to practice medicine in California is a prerequisite to field training. For further information, contact the Student Affairs Office, UCLA School of Public Health.

## Doctor of Public Health

The Doctor of Public Health (Dr.P.H.) is the highest professional degree for the public health generalist. You are expected to focus on public health practice and to acquire broad knowledge related to professional skills. The dissertation is of an applied, practical, problem-solving nature and must demonstrate your ability for independent investigation.

There is no foreign language requirement; teaching experience is recommended but not required.

## Admission

In addition to the University minimum requirements, each department requires (1) satisfactory performance on the Graduate Record Examination (GRE), (2) completion of the M.P.H. or a master's degree in an appropriately related field (if the master's degree is in a field other than public health, you must have taken the equivalent of the M.P.H. mandatory core courses or include them in your course of study after admission), (3) at least a 3.0 junior/senior undergraduate grade-point average, at least a 3.5 GPA in graduate studies or demonstrated superiority in graduate work, and at least a B in each of the mandatory core courses, (4) a positive recommendation by a department to the School of Public Health, (5) approval by the admissions policy committee and the associate dean for Student Affairs. Screening or evaluation examinations may be required by each department.

## Course Requirements

The course requirements in the major field depend on the department/area and the field you select. You must take a minimum of six full courses (four must be at the 200 or 400 level) in at least two School of Public Health departments/areas other than your major department/area.

The major department/area also requires an additional area of concentration which may be either inside or outside the school. In departments/areas that allow it, an equivalent field experience completed while a doctoral student and approved by the guidance committee may be substituted for the additional area of concentration.

## Areas of Specialization

Areas of specialization and typical course plans, in addition to courses required for the master's degree, are listed below.

### Biostatistics

The Dr.P.H. requires a research orientation for which the coursework for the M.S. in Biostatistics is more appropriate preparation than the coursework for the M.P.H.

The following courses, if not already taken, should be included: Biostatistics 200B-200C; any four additional graduate-level courses in biostatistics selected with consent of your adviser; four courses in the 400 series selected with consent of your adviser; Statistics M152A, 152B-152C. All registered doctoral students enroll in Biostatistics 402B for one term each year. This may be used as the additional area of concentration referenced below.

In addition, six full courses (four must be at the 200 or 400 level) in at least two School of Public Health departments/areas other than Biostatistics are required for breadth. The department also requires an additional area of concentration which may be either inside or outside the school.

Electives, selected in consultation with your adviser, should be chosen from courses in mathematics, biomathematics, survey research methods, operations research, computer data processing, and other appropriate areas.

### Community Health Sciences

*Behavioral Sciences and Health Education* — At least four advanced research methods/statistics courses and at least five advanced courses from a list designed and offered by the area are required. In addition, six full courses (four must be at the 200 or 400 level) in at least two School of Public Health departments/areas other than your major area are required for breadth; four of these must be in only one other department/area. Two terms of research experience prior to beginning the dissertation are required, as is participation in Community Health Sciences 286 (area doctoral seminar) and 288. Elective courses should be selected in consultation with your adviser. Written quali-

fying examinations in both the major and minor areas of concentration are required.

*Population and Family Health* — Course content for the major field includes courses needed for the M.P.H., the area doctoral seminar, and two advanced courses in research methodology. Beyond the master's degree requirements, a minimum of 48 units (four terms with an average of 12 units each) is required. Of these, at least 20 units must be in this area, in addition to the area doctoral seminar.

In addition, six full courses (four must be at the 200 or 400 level) in at least two School of Public Health departments/areas other than your major area are required for breadth (you may petition to include up to two 100-level courses). The major area also requires 18 units in an additional area of concentration which may be either inside or outside the school.

### Environmental Health Sciences

You can obtain the Dr.P.H. with a concentration in air pollution, environmental chemistry, environmental management, environmental toxicology, industrial hygiene, and water quality. You must take a minimum of six full courses (four must be at the 200 or 400 level) in at least two School of Public Health departments/areas other than Environmental Health Sciences.

The department also requires additional courses in your major field as recommended by your adviser and guidance committee and courses in a minor field outside the department.

### Epidemiology

The recommended program includes additional courses in biostatistics, demography, and epidemiology beyond those required for the M.P.H.

You must take a minimum of six full courses (four must be at the 200 or 400 level) in at least two School of Public Health departments/areas other than Epidemiology. The department also requires an additional area of concentration which may be either inside or outside the school. An equivalent field experience completed while a doctoral student and approved by your guidance committee may be substituted for the additional area of concentration.

A detailed course plan is developed in consultation with your faculty adviser in the department and in your minor area.

### Health Services

The Dr.P.H. has a professional comprehensive orientation and prepares students for leadership positions in health services administration. An M.P.H. degree or equivalent is required, and full-time work experience in some aspect of public health is highly recommended. With full-time study, you may complete the Dr.P.H. in three years.

In your first two years you are normally expected to complete 18 full courses (72 units) beyond the M.P.H. degree to develop mastery in

(1) basic tools of social analysis, (2) health and disease in populations, (3) promotion of health and prevention of disease, and (4) health systems and their management. The specific course program depends on your previous coursework and experience. Your third year includes a residency in a public or private health services organization, seminar courses (eight units) devoted to principles and strategies of health services leadership, and preparation of a problem-solving dissertation related to your residency experience.

## Screening/Qualifying Examinations

No screening examination is required in any department except Biostatistics, which requires a written screening examination of all students entering the doctoral program, to be taken before the end of your first year in the program (if not taken prior to entering the program). Courses covered by this and other examinations are determined in consultation with your adviser and the department faculty.

Before advancement to candidacy, you must pass written examinations in your major field prepared and administered by the department faculty. Normally no more than one reexamination after failure is allowed. The doctoral committee is nominated after you have made a tentative decision on a dissertation topic. The doctoral committee administers the University Oral Qualifying Examination after you have successfully completed the written examinations.

## Final Oral Examination

A final oral examination is required of all candidates.

# Appendix

## Nondiscrimination

The University of California, in compliance with Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Age Discrimination Act of 1975, does not discriminate on the basis of race, color, national origin, religion, sex, handicap, or age in any of its policies, procedures, or practices; nor does the University discriminate on the basis of sexual orientation. This nondiscrimination policy covers admission and access to, and treatment and employment in, University programs and activities, including but not limited to academic admissions, financial aid, educational services, and student employment.

Inquiries regarding the University's equal opportunity policies may be directed to the Campus Counsel, 3149 Murphy Hall, UCLA, Los Angeles, CA 90024-1405, (310) 825-4042. Speech- and hearing-impaired persons may call TDD (310) 206-6083.

Inquiries regarding Americans with Disabilities Act (ADA) or 504 Compliance may be directed to Dr. Douglas Martin, Special Assistant to the Chancellor/Coordinator of ADA and 504 Compliance, A239 Murphy Hall, UCLA, Los Angeles, CA 90024-1405, Voice (310) 825-2242, CRS (800) 735-2929, TDD/TT (310) 206-3349, Fax (310) 825-3688.

Students may complain of any action which they believe discriminates against them on the ground of race, color, national origin, religion, sex, sexual orientation, handicap, or age and may contact the Office of the Dean of Students, 1206 Murphy Hall, for further information and procedures.

## Student Conduct: Violation of University Policies

Students are subject to disciplinary action for several types of misconduct or attempted misconduct, including but not limited to dishonesty such as cheating, multiple submission (i.e., the resubmission of any work which has been previously submitted for credit in identical or similar form in one course to fulfill any of the requirements of another course without the prior consent of the current instructor), plagiarism, or knowingly furnishing false information to the University; forgery, alteration, or misuse of University documents, keys, or identifications; theft of, damage to, or destruction of any property of the University or property of others while on University premises; unauthorized entry to or use of University properties, equipment, or resources; disruption of teaching, research, administration, disciplinary procedures, or other University activities; physical abuse, threats of violence, rape and other forms of sexual assault, or other conduct that threatens the health or safety of any person on University property or in connection with official University functions; disorderly conduct; disturbing the peace; sexual harassment; the use of "fighting words" when they constitute harassment; the use, possession, sale, distribution, or manufacture of alcohol on University properties or at official University functions which is unlawful or otherwise prohibited by, or not in compliance with, University policy or campus regulations; the unlawful use, possession, sale, distribution, or manufacture of controlled substances, identified in Federal and State Laws or Regulations, on University proper-

ties or at official University functions; and violations of other University policies or campus rules and regulations.

Further information on these infractions and on the procedures concerning student discipline are contained in the *University of California Policies Applying to Campus Activities, Organizations, and Students, Parts A and B; Universitywide Student Conduct Harassment Policy; UCLA Student Conduct Code of Procedures; and UCLA Activity Guidelines*. Copies of these documents are available in the Office of the Dean of Students (1206 Murphy Hall), Center for Student Programming (161 Kerckhoff Hall), and Student Psychological Services (A3-062 CHS).

In addition, the Office of the Dean of Students publishes "Official Notices" in the *Daily Bruin* at various times during the year. Such notices are important, and *all students are held responsible* for the information in them.

## Rape and Other Forms of Sexual Assault

UCLA will not tolerate sexual assault in any form, including acquaintance or date rape. Where there is probable cause to believe that the campus regulations prohibiting sexual assault have been violated by a student, the campus will pursue disciplinary actions which may include sanctions up to and including dismissal from the University.

A student accused of sexual assault can be prosecuted under California criminal statutes and disciplined under the campus student conduct policies and regulations. Even if the

## Salary and Employment Information, University of California

FIELD OF STUDY	DEGREE LEVEL OF GRADUATES		
	BACHELOR'S	MASTER'S	DOCTORATE
	AVERAGE MONTHLY SALARY <sup>1</sup>		
Engineering	\$2,660	\$3,212	\$4,205
Humanities	1,788	2,429	2,508
Life Sciences	1,871	2,396	3,196
Management	2,173	3,342	4,021
Physical Sciences	2,040	3,054	4,304
Social Sciences	1,857	2,440	3,991

<sup>1</sup>Source: A national survey of a representative group of colleges conducted by the College Placement Council, representing the 80 percent range of offers for March 1993 throughout the country. It should be noted that a wide variation in starting salaries exists within each discipline based on job location, type of employer, personal qualifications of the individual, and employment conditions at the time of job entry.

criminal justice authorities choose not to prosecute, the campus can pursue disciplinary action.

### Definitions

A student who individually, or in concert with others, participates in any of the following misconduct is subject to University discipline. (Refer to the *University of California Policies Applying to Campus Activities, Organizations, and Students, Part A* and the *UCLA Student Conduct Code of Procedures* which are available from the Office of the Dean of Students, 1206 Murphy Hall.) The following language describes specific conduct which, at UCLA, may subject a student to University discipline:

Physical abuse, threats of violence, rape, and other forms of sexual assault or other conduct that threatens the health or safety of any person on University property or in connection with official University functions. More specifically:

### Rape

For the purposes of this policy, rape refers to those actions defined as rape by the California Penal Code. The acts summarized below are among the behaviors prohibited by the California Penal Code:

- (1) Sexual intercourse against a person's will accomplished by force or threats of bodily injury.
- (2) Sexual intercourse against a person's will where the person has reasonable fear that she (or he) or another will be injured if she (or he) does not submit to the intercourse.
- (3) Sexual intercourse where the person is incapable of giving consent, or is prevented from resisting, which includes, but is not limited to, instances in which the complainant is prevented from resisting due to alcohol or drugs administered by or with the knowledge of the accused.

### Other Forms of Sexual Assault

The act of sexual assault includes forced sodomy (anal intercourse); forced oral copulation (oral-genital contact); forced penetration by a foreign object, including a finger; and sexual battery (the unwanted touching of an intimate part of another person for the purpose of sexual arousal). These also include situations where the accused sexually assaults a complainant incapable of giving consent, including where the complainant is prevented from resisting due to alcohol or drugs administered by or with the knowledge of the accused.

Note: For the purpose of this policy, students should understand that:

- (1) Forced intercourse or other unwanted sexual contact is defined as rape or sexual assault whether the assailant is a stranger or an acquaintance of the complainant.
- (2) Intoxication of the assailant shall not diminish the assailant's responsibility for sexual assault.

### If You Have Been Raped or Sexually Assaulted

Take care of your safety and health needs:

(1) **Immediately call the police department.** If possible, call the UCLA Police Department at (310) 825-1491 or 911.

(2) **Get medical attention.** Campus police will provide transportation to the Santa Monica Hospital Medical Center Emergency Room for emergency medical treatment and evidence collection. A counselor from the Santa Monica Rape Treatment Center will be available at that time, free of charge.

Utilize campus and community support services:

(1) **Contact a Rape Services Consultant (RSC)** at the Women's Resource Center. RSCs have expertise in working with people who have been raped or sexually assaulted. They can discuss options and alternatives, help identify the most appropriate support services, and provide information about medical care, psychological counseling, academic assistance, legal options, how to file a police report, and how to file a complaint through the Office of the Dean of Students. RSCs are available to assist any UCLA student regardless of where or when the assault occurred. For assistance, contact the Women's Resource Center at (310) 206-8240 or go to 2 Dodd Hall and ask to speak to an RSC.

(2) **Contact the Rape Treatment Center** at Santa Monica Hospital Medical Center (310-319-4000) for free emergency medical treatment and counseling services.

### Campus Discipline Process When the Assailant Is a Student

Those who believe that they have been raped or otherwise sexually assaulted by a student on University properties or in conjunction with an official University function may file a complaint directly with the Office of the Dean of Students, 1206 Murphy Hall.

Cases referred to the Office of the Dean of Students will be treated under the hearing procedures set forth in the *UCLA Student Conduct Code of Procedures*. If the allegation is of rape or other forms of sexual assault and the case is referred to the Student Conduct Committee, the following *additional* procedures shall also apply:

- (1) The complainant shall be entitled, for support, to have up to two persons of the complainant's choice accompany the complainant to the hearing. A support person may be called as a witness, and the fact that he or she is to act as a witness shall not preclude that person's attendance throughout the entire hearing. If a support person is also a witness, the committee chair (or the hearing officer) may require him or her to testify before the complainant. Neither of these persons shall be entitled to represent or defend the complainant. Similar rights shall be afforded to the accused student.

(2) The complainant shall have the right to be present during the entire hearing notwithstanding the fact that the complainant is to be called as a witness.

(3) Evidence of the complainant's past sexual history, including opinion evidence, reputation evidence, and evidence of specific instances of the complainant's sexual conduct, shall not be admissible by the accused student unless the committee chair or hearing officer makes a specific finding of relevance after an offer of proof by the accused student. Under no circumstances is past sexual history admissible to prove consent. The offer of proof must be made and resolved by the panel or hearing officer before the complainant testifies.

(4) The hearing shall be closed to spectators.

## Harassment

### Sexual Harassment

Every member of the campus community should be aware that the University is strongly opposed to sexual harassment and that such behavior is prohibited both by law and by University policy.

### Definition

Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment when:

- (1) Submission to such conduct is made either explicitly or implicitly a term or condition of instruction, employment, or participation in other University activity;
- (2) Submission to or rejection of such conduct by an individual is used as a basis for evaluation in making academic or personnel decisions affecting an individual; OR
- (3) Such conduct has the purpose or effect of unreasonably interfering with an individual's performance or creating an intimidating, hostile, or offensive University environment.

In determining whether the alleged conduct constitutes sexual harassment, consideration will be given to the record as a whole and to the totality of the circumstances, including the nature of the sexual advances and the context in which the alleged incidents occurred (*University of California Policies Applying to Campus Activities, Organizations, and Students, Part B, Section 40.21*).

### Complaint Resolution

Experience has demonstrated that many complaints of sexual harassment can be effectively resolved through informal intervention. Individuals who experience what they consider to be sexual harassment are advised to confront the alleged offender immediately and firmly.

Additionally, an individual who believes that she or he has been sexually harassed may contact the alleged offender's supervisor and/or a Sexual Harassment Information Center

counselor for help and information regarding sexual harassment complaint resolution or grievance procedures at one of the locations listed below as determined by the complainant's status at the University at the time of the alleged incident:

- (1) Campus Ombuds Office, 1172 PCPC, (310) 825-7627 (for faculty, staff, students)
- (2) Women's Resource Center, 2 Dodd Hall, (310) 825-3945 (for students)
- (3) Office of Residential Life, Residential Life Building, (310) 825-3401 (for students)
- (4) Office of International Students and Scholars, 105 Men's Gym, (310) 825-1681 (for international students)
- (5) Student Psychological Services, 4223 Math Sciences, (310) 825-4207, or A3-062 Center for the Health Sciences, (310) 825-7985 (for students)
- (6) Office of Vice Chancellor — Academic Personnel, 2147 Murphy Hall, (310) 206-9345 (for faculty, including non-Senate academic appointees and student academic appointees when acting in the capacity of their non-Senate appointments)
- (7) Campus Human Resources/Employee and Labor Relations Division, 2126 Ueberroth Building, (310) 825-0661 (for campus staff employees and students when acting in the capacity of their staff appointments)
- (8) Medical Center Human Resources Office, 200 Security Pacific Building, (310) 825-0644 (for Medical Center staff employees and students when acting in the capacity of their staff appointments)
- (9) UCLA Extension Dean's Office, 770 UCLA Extension (UNEX), (310) 825-5603 (for UCLA Extension faculty, staff employees, and students)

### Other Forms of Harassment

The University strives to create an environment which fosters the values of mutual respect and tolerance and is free from discrimination based on race, ethnicity, sex, religion, sexual orientation, disability, age, and other personal characteristics. Certainly harassment, in its many forms, works against those values and often corrodes a person's sense of worth and interferes with one's ability to participate in University programs or activities. While the University is committed to the free exchange of ideas and the full protection of free expression, the University also recognizes that words can be used in such a way that they no longer express an idea, but rather injure and intimidate, thus undermining the ability of individuals to participate in the University community. The *University of California Policies Applying to Campus Activities, Organizations, and Students, Parts A and B* (hereafter referred to as *Policies*) presently prohibit a variety of conduct by students which, in certain contexts, may be regarded as harassment or intimidation.

For example, harassing expression which is accompanied by physical abuse, threats of violence, or conduct that threatens the health or safety of any person on University property or in connection with official University functions may subject an offending student to University discipline under the provisions of Section 51.16 of the *Policies*.

Similarly, harassing conduct, including symbolic expression, which also involves conduct resulting in damage to or destruction of any property of the University or property of others while on University premises may subject a student violator to University discipline under the provisions of Section 51.12 of the *Policies*.

Further, under specific circumstances described in the *Universitywide Student Conduct Harassment Policy*, students may be subject to University discipline for misconduct which may consist solely of expression. Copies of this *Policy* are available in the Office of the Dean of Students, 1206 Murphy Hall, or in any of the Harassment Information Centers listed below:

- (1) Campus Ombuds Office, 1172 PCPC, (310) 825-7627
- (2) Women's Resource Center, 2 Dodd Hall, (310) 825-3945
- (3) Office of Residential Life, Residential Life Building, (310) 825-3401
- (4) Office of International Students and Scholars, 105 Men's Gym, (310) 825-1681
- (5) Student Psychological Services, 4223 Math Sciences, (310) 825-4207, or A3-062 Center for the Health Sciences, (310) 825-7985
- (6) Office of Fraternity and Sorority Relations, 118 Men's Gym, (310) 825-6322

### Complaint Resolution

One of the necessary measures in our efforts to assure an atmosphere of civility and mutual respect is the establishment of procedures which provide effective informal and formal mechanisms for those who believe that they have been victims of any of the above misconduct.

Many incidents of harassment and intimidation can be effectively resolved through informal means. For example, an individual may wish to confront the alleged offender immediately and firmly. An individual who chooses not to confront the alleged offender and who wishes help, advice, or information is urged to contact any of the Harassment Information Centers listed immediately above.

In addition to providing support for those who believe they have been victims of harassment, Harassment Information Centers offer persons the opportunity to learn about the phenomena of harassment and intimidation; to understand the formal and informal mechanisms by which misunderstandings may be corrected and, when appropriate, student perpetrators may be disciplined; and to consider which of

the available options is the most useful for the particular circumstances.

With regard to the *Universitywide Student Conduct Harassment Policy*, complainants should be aware that not all conduct which is offensive may be regarded as a violation of this *Policy* and may, in fact, be protected expression. Thus, the application of formal institutional discipline to such protected expression may not be legally permissible. Nevertheless, the University is committed to reviewing any complaint of harassing or intimidating conduct by a student and intervening on behalf of the complainant to the extent possible.

## Faculty Code of Conduct

The entire Faculty Code of Conduct can be found in the *UCLA Faculty Handbook, Supplement A (1987)*, pages 32-35 (copies are available in the Academic Personnel Office, 3109 Murphy Hall). Section IIA outlines faculty obligations to students and reads as follows:

### Teaching and Students

Ethical Principles — "As a teacher, the professor encourages the free pursuit of learning in students; holds before them the best scholarly standards of the discipline; demonstrates respect for the student as an individual and adheres to the proper role as intellectual guide and counselor; makes every reasonable effort to foster honest academic conduct and to assure that the evaluation of students reflects their true merit; respects the confidential nature of the relationship between professor and student; avoids any exploitation of students for private advantage and acknowledges significant assistance from them; and protects their academic freedom." (from 1966 AAUP statement)

### Types of Unacceptable Conduct

(1) Failure to meet the responsibilities of instruction, including (a) arbitrary denial of access to instruction, (b) significant intrusion of material unrelated to the course, (c) significant failure to adhere, without legitimate reason, to the rules of the faculty in the conduct of courses, to meet class, to keep office hours, or to hold examinations as scheduled, (d) evaluation of student work by criteria not directly reflective of course performance, (e) undue and unexcused delay in evaluating student work.

(2) Discrimination against a student on political grounds, or for reasons of race, religion, sex, sexual orientation, ethnic origin, national origin, ancestry, marital status, medical condition, status as a Vietnam-era veteran or disabled veteran or, within the limits imposed by law or University regulations, because of age or citizenship or for other arbitrary or personal reasons.

(3) Use of the position or powers of a faculty member to coerce the judgment or conscience of a student or to cause harm to a student for arbitrary or personal reasons.

(4) Participating in or deliberately abetting disruption, interference, or intimidation in the classroom.

### Charges of Violation

If a student has reason to believe that a faculty member has violated the code, the student may consult with a member of the Academic Senate Grievance and Disciplinary Procedures Committee (3125 Murphy Hall, 310-825-3852) for help in deciding on appropriate action. If the student believes that formal discipline may be warranted, the alleged violator should be reported to the chair of the department and to the dean of the division or school with a request that a charge be filed with the Academic Senate Charges Committee. If the dean, in consultation with the vice chancellor of Academic Personnel, determines that there are not sufficient grounds for the administration to file a charge, the student may, after discussing the matter with a member of the Academic Senate Grievance and Disciplinary Procedures Committee, file such a charge in person.

### Residence for Tuition Purposes

If you have not been living in California with intent to make it your permanent home for more than one year immediately before the residence determination date for each term in which you propose to attend the University, you must pay a nonresident tuition fee in addition to all other fees. The residence determination date is the day instruction begins at the last of the University of California campuses to open for the quarter, and for schools on the semester system, the day instruction begins for the semester.

### Law Governing Residence

The rules regarding residence for tuition purposes at the University of California are governed by the California Education Code and implemented by Standing Orders of The Regents of the University of California. Under these rules adult citizens and certain classes of aliens can establish residence for tuition purposes. There are particular rules that apply to the residence classification of minors (see below).

### Who Is a Resident?

If you are an adult student (at least 18 years of age), you may establish residence for tuition purposes in California if (1) you are a U.S. citizen, (2) you are a permanent resident or other immigrant, or (3) you are a nonimmigrant who is not precluded from establishing a domicile in the U.S. Nonimmigrants who are not precluded from establishing domicile in the U.S. include those who hold valid visas of the following types — A, E, G, H-1, H-4, I, K, L, O-1, O-3, or R. To establish residence you must be physically present in California for more than one year, and you must have come here with the intent to make Califor-

nia your home as opposed to coming to this state to go to school. Physical presence within the state solely for educational purposes does not constitute the establishment of California residence, regardless of the length of your stay. You must demonstrate your intention to make California your home by severing your residential ties with your former state of residence and establishing those ties with California. If these steps are delayed, the one-year durational period will be extended until you have demonstrated both presence and intent for one full year. Effective fall 1993, if your parents are not residents of California or you were not previously enrolled as a UC student, you will be required to be financially independent in order to be a resident for tuition purposes. Your residence cannot be derived from your spouse or your parents.

### Requirements for Financial Independence

You are considered "financially independent" if one or more of the following apply: (1) you are at least 24 years of age by December 31 of the calendar year for which you are requesting residence classification; (2) you are a veteran of the U.S. Armed Forces; (3) you are a ward of the court or both parents are deceased; (4) you have legal dependents other than a spouse; (5) you are married, or a graduate student or a professional student, and you were not claimed as an income tax deduction by your parents or any other individual for the tax year immediately preceding the term for which you are requesting resident classification; or (6) you are a single undergraduate student and you were not claimed as an income tax deduction by your parents or any other individual for the two tax years immediately preceding the term for which you are requesting resident classification, and you can demonstrate self-sufficiency for those years and the current year. (Note: Financial dependence is not a factor in residence status for graduate student instructors, graduate student teaching assistants, research assistants, junior specialists, postgraduate researchers, graduate student researchers, and teaching associates who are employed 49 percent or more of full time in the term for which classification is sought.)

### Establishing Intent to Become a California Resident

Indications of your intent to make California your permanent residence can include the following: registering to vote and voting in California elections; designating California as your permanent address on all school and employment records, including military records if you are in the military service; obtaining a California driver's license or, if you do not drive, a California Identification Card; obtaining California vehicle registration; paying California income taxes as a resident, including taxes on income earned outside California from the date you establish residence; establishing a California residence in which you keep your personal belongings; and licensing for professional practice in California. The absence of

these indicia in other states during any period for which you claim residence can also serve as an indication of your intent. Documentary evidence is required, and all relevant indications will be considered in determining your classification. Your intent will be questioned if you return to your prior state of residence when the University is not in session.

### General Rules Applying to Minors

If you are an unmarried minor (under age 18), the residence of the parent with whom you live is considered to be your residence. If you have a parent living, you cannot change your residence by your own act, by the appointment of a legal guardian, or by the relinquishment of your parent's right of control. If you live with neither parent, your residence is that of the parent with whom you last lived. Unless you are a minor alien present in the U.S. under the terms of a nonimmigrant visa which precludes you from establishing domicile in the U.S., you may establish your own residence when both your parents are deceased and a legal guardian has not been appointed. If you derive California residence from a parent, that parent must satisfy the one-year durational residence requirement.

### Specific Rules Applying to Minors

(1) **Divorced or Separated Parents** — You may be able to derive California resident status from a California resident parent if you move to California to live with that parent on or before your 18th birthday. If you begin residing with your California parent after your 18th birthday, you will be treated like any other adult student coming to California to establish residence.

(2) **Parent of Minor Moves from California** — You may be entitled to resident status if you are a minor U.S. citizen or eligible alien whose parent(s) was a resident of California who left the state within one year of the residence determination date if (a) you remained in California after your parent(s) departed, (b) you enroll in a California public postsecondary institution within one year of your parent(s) departure, and (c) once enrolled, you maintain continuous attendance in that institution. Financial independence is not required in this case.

(3) **Two-Year Care and Control** — You may be entitled to resident status if you are a U.S. citizen or eligible alien and you have lived continuously with an adult who is not your parent for at least two years prior to the residence determination date. The adult with whom you are living must have been responsible for your care and control for the entire two-year period and must have been residing in California during the one year immediately preceding the residence determination date.

### Exemptions from Nonresident Tuition

(1) **Member of the Military** — If you are a member of the U.S. military stationed in California on active duty, unless you are assigned for educational purposes to a state-supported



institution of higher education, you may be exempt from the nonresident tuition fees until you have lived in California long enough to become a resident. You must provide the on-campus residence deputy with a statement from your commanding officer or personnel officer stating that your assignment to active duty in California is not for educational purposes. The letter must include the dates of your assignment to the state.

**(2) Spouse or Other Dependents of Military Personnel** — You are exempt from payment of the nonresident tuition fee if you are a spouse or a natural or adopted child or stepchild who is a dependent of a member of the U.S. military stationed in California on active duty. The exemption is available until you have lived in California long enough to become a resident. You must petition for a waiver of the nonresident tuition fee each term you are eligible. If you are enrolled in an educational institution and the member of the military is transferred on military orders to a place outside California where he or she continues to serve in the Armed Forces, or the member of the military retires from active duty immediately after having served in California on active duty, you may retain this exemption under conditions listed above.

**(3) Child or Spouse of Faculty Member** — To the extent funds are available, if you are an unmarried dependent child under age 21 or the spouse of a member of the University faculty who is a member of the Academic Senate, you may be eligible for a waiver of the nonresident tuition fee. Confirmation of the faculty member's membership on the Academic Senate must be secured each term this waiver is granted.

**(4) Child or Spouse of University Employee** — You may be entitled to resident classification if you are an unmarried dependent child or the spouse of a full-time University employee whose assignment is outside California (e.g., Los Alamos Scientific Laboratory). Your parent's or spouse's employment status with the University must be ascertained each term.

**(5) Child of Deceased Public Law Enforcement or Fire Suppression Employee** — You may be entitled to a waiver of the nonresident tuition fee if you are the child of a deceased public law enforcement or fire suppression employee who was a California resident at the time of his or her death and who was killed in the course of fire suppression or law enforcement duties.

**(6) Dependent Child of a California Resident** — If you have not been an adult resident of California for more than one year and are the natural or adopted dependent child of a California resident who has been a resident for more than one year immediately prior to the residence determination date, you may be entitled to a waiver of the nonresident tuition until you have resided in California the minimum time necessary to become a resident, so long as continuous attendance is maintained at an institution.

## Temporary Absences

If you are a nonresident student who is in the process of establishing a residence for tuition purposes and you return to your former home during noninstructional periods, your presence in the state will be presumed to be solely for educational purposes and only convincing evidence to the contrary will rebut this presumption. **Students who are in the state solely for educational purposes will NOT be classified as residents for tuition purposes regardless of the length of their stay.**

If you are a student who has been classified as a resident for tuition purposes and you leave the state temporarily, your absence could result in the loss of your California residence. The burden will be on you (or your parents if you are a minor) to verify that you did nothing inconsistent with your claim of a continuing California residence during your absence. Steps that you (or your parents) should take to retain a California residence include:

(1) Continue to use a California permanent address in all records — educational, employment, military, etc.

(2) Continue to satisfy California tax obligations. If you are claiming California residence, you are liable for payment of income taxes on your total income from the date you establish your residence in the state, including income earned in another state or country.

(3) Retain your California voter's registration and vote by absentee ballot.

(4) Maintain a California driver's license and vehicle registration. If it is necessary to change your driver's license or vehicle registration, you must change them back within the time prescribed by law.

## Petition for Resident Classification

You MUST PETITION IN PERSON at 1113 Murphy Hall for a change of classification from nonresident to resident status. All changes of status must be initiated prior to the first day of classes for the term for which you intend to be classified as a resident.

## Time Limitation on Providing Documentation

If additional documentation is required for residence classification but is not readily accessible, you will be allowed until the end of the applicable term to provide it.

## Incorrect Classification

If you were incorrectly classified as a resident, you are subject to a nonresident classification and to payment of all nonresident tuition fees not paid. If you concealed information or furnished false information and were classified incorrectly as a result, you are also subject to University discipline. Resident students who become nonresidents must immediately notify the residence deputy.

## Inquiries and Appeals

Inquiries regarding residence requirements, determination, and/or recognized exceptions should be directed to the Residence Deputy, Office of the Registrar, 1113 Murphy Hall, 405 Hilgard Avenue, Los Angeles, CA 90024-1429 (310-825-3447) or to the Legal Analyst — Residence Matters, 300 Lakeside Drive, 7th Floor, Oakland, CA 94612-3565. **NO OTHER UNIVERSITY PERSONNEL ARE AUTHORIZED TO SUPPLY INFORMATION RELATIVE TO RESIDENCE REQUIREMENTS FOR TUITION PURPOSES.**

You are cautioned that this summary is NOT a complete explanation of the law regarding residence. Note that changes may be made in the residence requirements between the publication of this statement and the relevant residence determination date. Any student, following a final decision on residence classification by the residence deputy, may appeal in writing to the legal analyst within 45 days of notification of the residence deputy's final decision.

## Privacy Notice

All of the information requested on the Statement of Legal Residence form is required (by the authority of Standing Order 110.2 (a)-(d) of The Regents of the University of California) for determining whether or not you are a legal resident for tuition purposes. Registration cannot be processed without this information. The Registrar's Office on campus maintains the requested information. You have the right to inspect University records containing the residence information requested on the form.

## Financial Aid Minimum Progress Standards

Federal regulations require UCLA to establish, publish, and apply standards of satisfactory academic progress for financial aid eligibility. Students who fail to meet minimum progress standards become ineligible to receive financial aid until they are in compliance with the standards.

## Undergraduate Students

### Qualitative Standard

The qualitative standard is enforced by your college or school. You are notified by your academic department if you fall below the required grade-point average (GPA).

### Quantitative Standard

This standard is enforced by the Financial Aid Office on the basis of the number of units (including remedial courses) successfully completed within any given number of regular session terms. It may differ from your college/school requirement.

All students receiving aid as full-time students must be enrolled in at least 12 units in order to obtain funds. To be eligible for financial aid,

you must successfully complete at least 24 units in each of your first two academic years at UCLA to maintain satisfactory academic progress. Thereafter, you must successfully complete 84 units by the end of your ninth term, 120 units by the end of your twelfth term, 156 units by the end of your fifteenth term, and 180 units by the end of your seventeenth term.

The measurement of progress occurs during the academic year. The schedule above is adjusted appropriately for students ending an academic year with a different number of terms completed than is listed above. If you enter UCLA in advanced standing, the number of terms for which you are eligible for aid is reduced proportionally to the number of transfer units credited to your record. For example, if you are credited with 84 transfer units, you would have only eight terms of financial aid eligibility as an undergraduate at UCLA. The annual evaluation of progress is measured against the beginning section of the first scale (i.e., you are required to complete 24 units in your first full academic year of enrollment). Individual situations that cause transfer students to begin their enrollment with a deficiency are accommodated through both the advising and appeal process.

If you are a continuing student at UCLA at the time you apply for financial aid, your progress is measured by the previous schedule in order to determine your eligibility (i.e., you must have successfully completed 48 units if you attended UCLA for six terms). As in the case of transfer students, you would then have only 11 terms of financial aid eligibility.

After 17 terms of enrollment as a full-time student or the equivalent as a part-time student, no further need-based financial aid is granted.

### Nonstandard Enrollment

Part-time students' progress is measured by an appropriately modified schedule, and aid is similarly modified. Summer enrollment must be counted proportionally as a period of enrollment if you apply the units earned toward graduation. Summer enrollment is reviewed as part of the following academic year. Accommodation is made for students enrolled in a joint degree program.

### Successful Completion

To successfully complete units, you must receive a grade of A, B, C, D, or P (S for graduate students) in a course. You are given temporary credit for an IP grade pending receipt of the final grade in the course. Grades of F, I, and NP (U for graduate students) do not earn completed units. An I grade that is replaced with a passing grade does earn units. Repeated courses for which completed units were previously credited do not earn completed units. DR (Deferred Report) grades do not earn units unless replaced by passing grades.

### Withdrawal and Cancellation

Withdrawal from a term in which you receive financial aid applies as a term attended and works to your disadvantage on the units-per-term schedule. Cancellation of your registration (prior to the first day of classes), however, does not apply as a term attended. Refund and payback of aid received is based on published schedules and the date you officially withdraw or cancel.

### Disqualification and Reinstatement

The Financial Aid Office monitors satisfactory progress annually after Winter Quarter grades are recorded. Your progress is measured according to the number of terms you have attended at UCLA and the number of units you have successfully completed.

If you have not met the requirements shown on the schedule, your financial aid is discontinued until the deficiencies are satisfied. You may use Summer Sessions to make up deficiencies. Reinstatement can also occur during an academic year.

Your financial aid eligibility is reinstated for the term following the term in which you reestablish compliance with the units-per-term schedule. For example, if you successfully complete 16 units in Fall Quarter and therefore make up your deficiency, you become eligible for consideration for assistance in Winter and Spring Quarters. Financial aid is then awarded on the basis of your need and the availability of funds.

### Appeal Process

If you fail to meet the satisfactory progress standards due to reasons such as debilitating illness, prolonged hospitalization, death in your immediate family, or other such mitigating circumstances, you may appeal your disqualification.

To appeal, submit a letter to the Financial Aid Appeal Committee setting forth the circumstances and how they affected your ability to meet the requirements. Based on the rationale and evidence you provide, the committee may reinstate your eligibility.

Students with mitigating circumstances should appeal as soon as possible. If you wait to make an appeal until after you have been notified that your aid has been discontinued, there may not be sufficient funds available in all of the programs for which you usually qualify.

### Graduate Students

#### Qualitative Standards

The qualitative standard is enforced by the dean of the Graduate Division in consultation with your department.

#### Quantitative Standard

To be eligible for financial aid as a full-time student, you must successfully complete at least eight units per term of enrollment. Approved study loads of less than eight units result in pro-

portionally reduced aid for that term and are charged against your maximum period of eligibility at the appropriate proportional rate.

### Disqualification and Appeal Process

If you fail to meet the qualitative and quantitative requirements, your financial aid is discontinued until the deficiencies are made up. Appeals are reviewed by your academic department, the dean of the Graduate Division, and/or the Financial Aid Appeal Committee.

### Period of Eligibility

The degree program to which you are admitted determines the maximum number of terms for which you can receive need-based financial aid. Terms for which no need-based aid is received are considered when determining your remaining number of terms of financial aid eligibility.

If you are in a credential program or a professional master's program (other than Master of Fine Arts), you are eligible for a maximum of nine terms of need-based financial aid. The professional master's degrees include LL.M., M.Arch., M.A.T., M.B.A., M.C.L., M.E., M.Ed., M.J., M.L.S., M.N., M.P.A., M.P.H., M.S.P., M.S.W.

If you are in a Master of Fine Arts program, you are eligible for a maximum of 12 terms of need-based financial aid. If you are in an M.A. or M.S. program, a doctoral program, or a combination master's/doctoral program, you are eligible for a maximum of 27 terms of need-based financial aid. Students who change their program may be accommodated through an extension of terms of eligibility. The extension should be secured at the time the program change is made.

### Professional Schools

Students attending the Schools of Dentistry, Law, and Medicine are covered by criteria established by the respective school.

## Grading Regulations

### Assigning a Grade

The instructor in charge of a course is responsible for determining the grade of each student in the course. The standards for evaluating student performance are based on the course description as approved by the appropriate course committee.

The final grade in the course is based on the instructor's evaluation of the student's achievement in the course. When on an examination or other work submitted by a student, the student is suspected of having engaged in plagiarism or otherwise having cheated, the suspected infraction is to be reported to the appropriate administrative officer of the University for consideration of disciplinary proceedings against the student. Until such proceedings, if any, have been completed, the grade DR (Deferred Report) is assigned for that course. If in such disciplinary pro-

ceedings it is determined that the student did engage in plagiarism or otherwise cheat, the administrative officer, in addition to imposing discipline, reports back to the instructor of the course involved, the nature of the plagiarism or cheating. In light of that report, the instructor may replace the grade DR with a final grade that reflects an evaluation of that which may fairly be designated as the student's own achievement in the course as distinguished from any achievement that resulted from plagiarism or cheating.

### Grade Complaints

A grade may be appealed, on any reasonable grounds, to the instructor, the chair of the department, and the dean of the division or school.

If the student believes that the instructor has violated the Faculty Code of Conduct by assigning the grade on any basis other than academic, the matter should first be taken up with the instructor. If the matter is not resolved, the student may go for counsel to the Campus Ombuds Office or may follow the procedures for the formal filing of charges (see "Faculty Code of Conduct" earlier in the Appendix). If a charge is sustained by the Academic Senate Committees on Charges and on Privilege and Tenure, an ad hoc committee will be appointed within two weeks to review the disputed grade, and any warranted change will be made within four weeks.

### Correction of Grades

All grades, except DR, I, and IP, are final when filed by the instructor in the end-of-term course report. However, the Registrar's Office is authorized to change a final grade (1) on written request of an instructor, provided that a clerical or procedural error is the reason for the change or (2) on written request of the chair of the UCLA Academic Senate in cases where it has been determined by the Committee on Privilege and Tenure that an instructor has assigned a grade on any basis other than academic grounds. No change of grade may be made on the basis of reexamination or, with the exception of the I and IP grades, the completion of additional work. Any grade change request made more than one year after the original filing must be validated for authenticity of the instructor's signature by the department chair. Any grade change request made by an instructor who has left the University must be countersigned by the department chair. All grade changes are recorded on the transcript.

### Policy on Alternate Examination Dates

In compliance with Section 92640(a) of the California Education Code, the University must accommodate requests for alternate examination dates at a time when that activity would not violate a student's religious creed. This requirement does not apply in the event that administering the test or examination at an alternate time would impose an undue hardship which could not reasonably be avoided. Accommodation for alternate examination dates will be worked out directly and on an

individual basis between the student and the faculty member involved.

(1) In general, students should make such requests of the instructor during the first two weeks of any given academic term, or as soon as possible after a particular examination date is announced by the instructor.

(2) Students unable to reach a satisfactory arrangement with their instructor should contact the Campus Ombuds Office, 1172 PCPC, or the Office of the Dean of Students, 1206 Murphy Hall, for assistance.

(3) Instructors who have questions or who wish to verify the nature of the religious event or practice involved should contact the Campus Ombuds Office or the Office of the Dean of Students for assistance.

### Undergraduate Final Examinations

No student shall be excused from assigned final examinations, except as provided above in the policy on alternate examination dates and as provided in the following three paragraphs.

The instructor in charge of an undergraduate course is responsible for assigning the final grade in the course. The final grade shall reflect the student's achievement in the course and shall be based on adequate evaluation of that achievement. The instructor's method of evaluation must be announced at the beginning of the course. The methods may include a final written examination, a term paper, a final oral examination, a take-home examination, or other evaluation device. Evaluation methods must be of reasonable duration and difficulty and must be in accord with applicable departmental policies. Final written examinations may not exceed three hours' duration and will be given only at the times and places established and published by the department chair and the Registrar's Office.

At the end of the term in which a student is expected to be graduated, a student's major department may examine him or her in the field of the major, may excuse the student from final examinations in courses offered by the department during that term and, with the approval of the appropriate Committee on Courses, assign a credit value to such general examination.

An instructor shall, if he or she wishes, release to individual students their original final examinations (or copies). This may be done by any method which insures the students' right to privacy. Otherwise, the instructor shall retain final examination materials, or a copy thereof, until the end of the next succeeding regular term of instruction, during which period students shall have access to their examinations.

### Disclosure of Student Records

Pursuant to the Federal Family Educational Rights and Privacy Act of 1974, the California

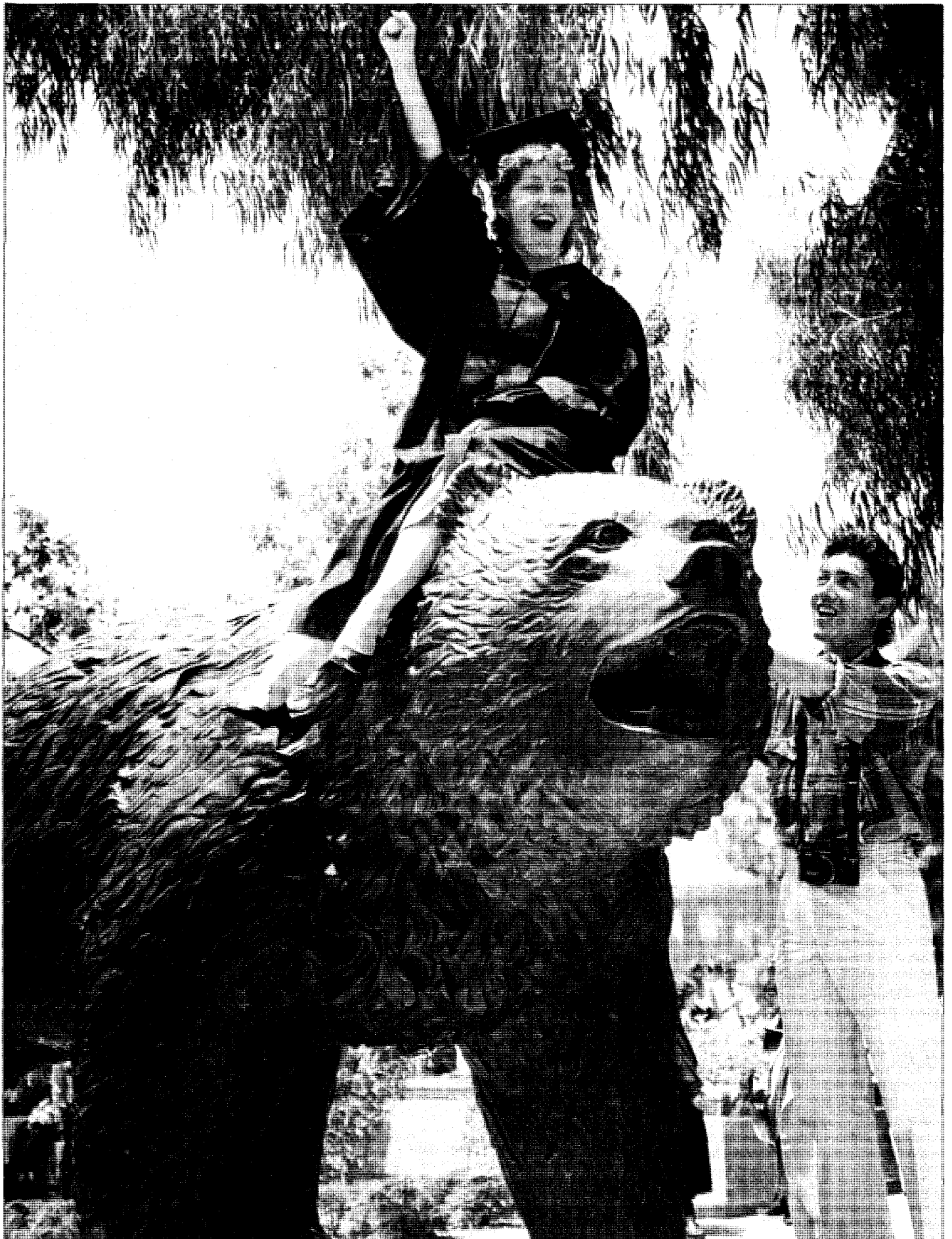
Education Code as amended in 1976, and the University of California Policies Applying to the Disclosure of Information from Student Records, students at UCLA have the right (1) to inspect and review records pertaining to themselves in their capacity as students, except as the right may be waived or qualified under the Federal and State Laws and the University Policies, (2) to have withheld from disclosure, absent their prior consent for release, personally identifiable information from their student records, except as provided by the Federal and State Laws and the University Policies, (3) to inspect records maintained by the University of disclosures of personally identifiable information from their student records, (4) to seek correction of their student records through a request to amend the records or, if such request is denied, through a hearing, and (5) to file complaints with the U.S. Department of Education regarding alleged violations of the rights accorded them by the Federal Act.

The University may release or publish, without the student's prior consent, items in the category of "public information," which are name, mailing and/or permanent address, telephone numbers, major field of study, dates of attendance, and degrees and honors received. You can limit public access to this information and designate if you wish to receive mailings that the University considers optional by completing the "Privacy Release" section of the Data Change Request on the quarterly Registration Form. Official University mailings are sent to all students, while optional mailings are sent only to students with no designated limitations.

To restrict the release or publication of the following information — the most recent previous educational institution attended, participation in officially recognized activities (including but not limited to intercollegiate athletics), and the name, weight, and height of participants on intercollegiate athletic teams — complete the Decline to Release form available in the Registration/Enrollment Office, 1113 Murphy Hall.

Student records which are the subject of the Federal and State Laws and the University Policies may be maintained in a wide variety of offices. Students are referred to the *UCLA Campus and CHS Directory* which lists all the offices which may maintain student records, together with their campus address and telephone number. Students have the right to inspect their student records in any such office subject to the terms of the appropriate Federal and State Laws and the University Policies. Inspection of records maintained by the Registrar's Office is by appointment only, with 24-hour advance notice. Call (310) 206-0482 or inquire at 1134 Murphy Hall.

A copy of the Federal and State Laws, the University Policies, and the *UCLA Campus and CHS Directory* may be inspected in the office of the Information Practices Coordinator, 2330 Murphy Hall. Information concerning these matters and students' hearing rights is also available there.



In addition to the public information described here, information related to your Social Security number, sex and marital status, and the name(s), address(es), and telephone number(s) of your parents or next of kin are made available to the UCLA University Relations Department for use in alumni, development, and public relations activities. To restrict the release of this additional information, fill out a Request for University Relations Information Restriction form available in the Registration/Enrollment Office, 1113 Murphy Hall.

## UCLA Graduation Rates

Graduation rates have shown a steady increase over the last eight years. While a little less than two thirds of freshmen who entered UCLA in Fall Quarter 1980 graduated in at least six years, the figure has risen to over 74 percent for the 1986 entering class. In addition, over the last two years of available data, graduation rates have increased for both four- and five-year periods. The five-year graduation rate of 69 percent for the 1987 class is higher than any other five-year rate. The 32 percent four-year rate for the 1988 class portends even higher five- and six-year rates over the next two years.

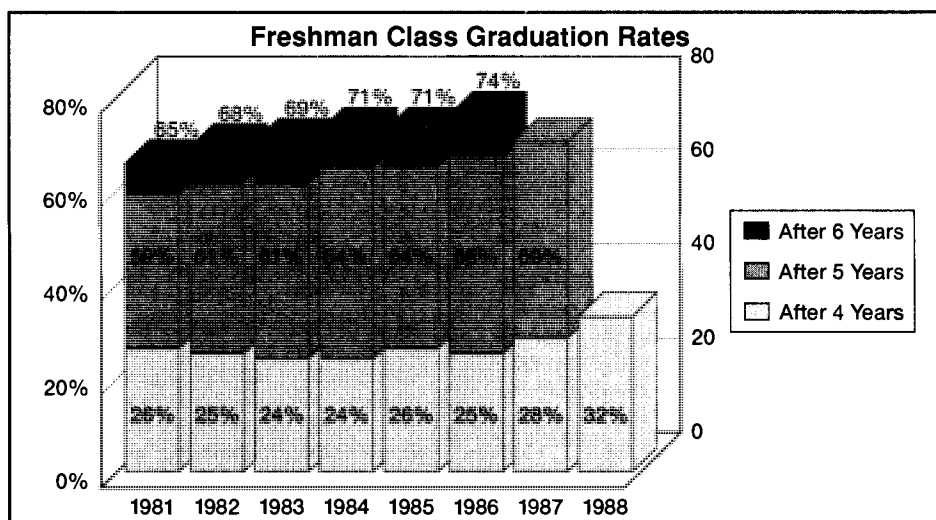
Students attending public universities often average five years to earn a bachelor's degree. Many enroll for a sixth year to prepare for graduate or professional school admission. Additional reasons students take more than four years to complete their degrees include employment and time taken for internships, travel, or field studies. Also, the data show elapsed time. Actual enrollment averages 13 to 14 terms. In addition, many students who do not earn a degree at UCLA have transferred to another UC campus or university.

## Campus Security Information

### UCLA Police Department

The UCLA Police Department (310-825-1491), located at Westwood Plaza and Circle Drive South, has 56 sworn California State Police Officers empowered by the State of California with the authority to enforce all state and local laws. UCLA police officers patrol the campus 24 hours a day, 365 days a year. They enforce all applicable local, state, and federal laws (with special emphasis on the laws involving alcohol and controlled substances), arrest violators, investigate and suppress crime, and provide a full range of police services.

The department is linked by computer to city, state, and federal criminal justice agencies that provide access to information concerning criminal records, wanted persons, stolen property, and vehicle identification. The Detective Bureau handles all criminal investigations, and detectives conduct interviews, arrest vio-



lators, execute search warrants, and file cases with the city and county prosecutors' offices.

To assist in prevention and apprehension efforts, the department employs unarmed security guards to patrol the Center for the Health Sciences and UCLA Medical Center. These guards provide on-site security and assistance for all who use the facilities.

In addition, the department employs approximately 200 student community service officers (CSOs) who are the "eyes and ears" (trained observers) of the department and act as non-intervention visual deterrents to crime. CSOs wear high-visibility uniforms and carry two-way police radios. They are dispatched by the department's Communications Center and provide a direct link to police, fire, or medical aid. The CSO Division provides over 20 different safety and security programs but is most well-known for the Campus Escort Service and the Evening Van Service. The Campus Escort Service operates every day of the year from dusk to 1 a.m. Individuals requesting the service call the Communications Center; a CSO is then dispatched to walk them safely to their destination. The service is available to UCLA students, staff, faculty, and visitors and operates on campus and in the nearby residential areas. The Evening Van Service provides a safe and convenient mode of transportation around campus at night. The vans run on specific routes similar to a municipal bus system.

### Incident Reporting

The UCLA Police Department has primary jurisdiction over the UCLA campus and the Center for the Health Sciences. The City of Los Angeles Police Department does not handle calls for service on campus. All requests for police service should be made to the UCLA Police Department (Circle Drive South and Westwood Plaza). All crime occurring on campus and in the Center for the Health Sciences should be reported immediately to the department to ensure appropriate action is taken. The University endorses a policy that strongly encourages victims to report all inci-

dents to the UCLA Police Department anytime of the day or night. Crimes occurring off campus should be reported immediately to the law enforcement agency with proper jurisdiction over that area.

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

NONEMERGENCY calls for service can be made by contacting the UCLA Police Department at (310) 825-1491.

### Crime Prevention

Crime prevention provides the best measure of protection. Therefore, the UCLA Police Department supports a proactive Crime Prevention Unit that works closely with community members to make UCLA a safer place to work, live, and learn. The unit gives presentations on vehicle and residential security, personal safety, office and equipment security, and rape prevention. Brochures and literature on crime prevention and personal safety are available. Throughout the year, the crime prevention officer and the student housing offices present personal safety workshops and many other crime awareness programs.

The Women's Resource Center (WRC) and the Crime Prevention Unit provide presentations on sexual assault issues. Topics include acquaintance rape education and prevention, personal safety and prevention techniques, recovery from sexual assault, clear communications, pornography, and the continuum of violence and rape in society. The educational programs, tailored to meet the needs of individual audiences, include films, discussion groups, lectures, role-plays, and communication exercises. The WRC reaches students through the residence halls, sororities, fraternities, athletic teams, student clubs, and various student functions. Services include crisis intervention

### FBI Crime Index Offenses — Los Angeles

	1988	1989	1990	1991	1992	% Change
<b>Violent Crime</b>						
Homicide/Manslaughter	0	0	1	0	0	—
Rape						
Rape by Force	2	0	1	1	3	—
Attempt to Commit Rape	1	0	2	0	0	—
Robbery	10	13	15	27	16	—
Aggravated Assault	9	21	17	32	11	—
<b>Total Violent Crime</b>	<b>22</b>	<b>34</b>	<b>36</b>	<b>60</b>	<b>30</b>	<b>-50%</b>
<b>Property Crime</b>						
Burglary	360	291	308	598	660	10%
Larceny/Theft						
Bicycle Theft	68	43	43	84	87	4%
Other Larceny/Theft	835	676	654	838	717	-14%
Motor Vehicle Theft	224	186	128	173	142	-18%
Arson	0	0	2	3	18	—
<b>Total Property Crime</b>	<b>1,487</b>	<b>1,196</b>	<b>1,135</b>	<b>1,696</b>	<b>1,624</b>	<b>-4%</b>
<b>Total FBI Crime Index</b>	<b>1,509</b>	<b>1,230</b>	<b>1,171</b>	<b>1,756</b>	<b>1,654</b>	<b>-6%</b>

### Clearance Rates of FBI Crime Index Offenses — Los Angeles

	1990		1991		1992	
	Reports	Percent	Reports	Percent	Reports	Percent
	Cleared	Cleared	Cleared	Cleared	Cleared	Cleared
<b>Violent Crime</b>						
Homicide/Manslaughter	1	0	0%	0	0	0%
Rape						
Rape by Force	1	0	0%	1	1	100%
Attempt to Commit Rape	2	2	100%	0	0	0%
Robbery	15	6	40%	27	7	26%
Aggravated Assault	17	10	59%	32	1	3%
<b>Total Violent Crime</b>	<b>36</b>	<b>18</b>	<b>50%</b>	<b>60</b>	<b>9</b>	<b>15%</b>
<b>Property Crime</b>						
Burglary	308	52	17%	598	39	7%
Larceny/Theft						
Bicycle Theft	43	0	0%	84	6	7%
Other Larceny/Theft	654	95	15%	838	86	10%
Motor Vehicle Theft	128	29	23%	173	39	23%
Arson	2	0	0%	3	0	0%
<b>Total Property Crime</b>	<b>1,135</b>	<b>176</b>	<b>16%</b>	<b>1,696</b>	<b>170</b>	<b>10%</b>
<b>Total FBI Crime Index</b>	<b>1,171</b>	<b>194</b>	<b>17%</b>	<b>1,756</b>	<b>179</b>	<b>10%</b>

and advocacy for victims of sexual assault; short-term counseling and referrals for survivors, their families, and friends; support groups for rape survivors; and self-defense classes and a lending library. The WRC works closely with the student housing offices and the police department to increase campus safety.

Several programs have been designed to increase the level of crime awareness and campus safety at UCLA. All incidents of criminal activity which pose a potential threat to the campus are brought immediately to the attention of the community through *Campus Alert Bulletins*. With the combined efforts of the Crime Prevention Unit, the Women's Resource Center, and the CSOs, incidents of sexual assault on campus have been reduced.

### Alcohol and Substance Abuse Education

Students with alcohol or substance abuse problems create safety and health risks for themselves and others. Such abuses also can result in a wide range of emotional and behavioral problems. Therefore, UCLA makes available to every student a variety of alcohol and substance abuse awareness programs which are designed to discourage the use of illicit substances and to educate students on the merits of legal and responsible alcohol con-

sumption. Student Psychological Services (310-825-7985) provides counseling and referral assistance to students who are troubled by alcohol or substance abuse problems. The service is completely confidential and free to regularly enrolled students. All information and counseling will be treated in accordance with University policies and state and federal laws. Your decision to seek assistance will not be used in connection with any academic determination or as a basis for disciplinary proceedings.

### Policies

UCLA has been designated drug free, and only under certain conditions is alcohol consumption permitted (none is permitted at athletic events). In keeping with its educational mission, the University assumes the responsibility to better inform the UCLA community about alcohol and substance abuse.

The sale, manufacture, distribution, or possession of any controlled substance without a prescription is illegal under both state and federal laws. Such laws are strictly enforced by the UCLA Police Department. Student violators are subject to University disciplinary action, criminal prosecution, fine, and imprisonment.

The sale, consumption, and distribution of alcohol on the UCLA campus is restricted by the UCLA alcohol policy and California State Law.

Organizations or groups violating alcohol or substance policies or laws may be subject to sanctions by the University.

### Residential Housing

UCLA is the size of a small city and provides residential housing to approximately 18,000 students. Housing facilities range from apartments designed for students with children to multi-student apartment complexes to high-rise student residence halls. The UCLA Police Department and student housing staff work hand in hand to create a safe and comfortable living and learning environment.

Campuswide security and safety programs for residents are held throughout the year to increase crime potential awareness and improve campus safety. To keep residents immediately informed of major crime or threats to the campus, *Crime Alert Bulletins* are posted in residential areas by the housing staff. However, residents must take an active role to ensure their own safety by exercising simple commonsense crime prevention techniques. Because the campus is open 24 hours a day, visitation to residence halls and apartments is not restricted. All residence halls have 24-hour access control on entrance doors, and during the evening hours access control monitors are stationed at each entrance. Police officers and CSOs are also assigned to the residence halls.

UCLA-affiliated organizations that maintain off-campus facilities come under the jurisdiction of their local police department. The UCLA Police Department does not compile statistical data on criminal activity that occurs in such facilities, including off-campus housing facilities not operated by the University. Information related to specific locations should be requested from the law enforcement agency with proper jurisdiction over those areas.

### Safety Tips

The nature of the studies and research done at UCLA requires many of the campus buildings to be open 24 hours. Because the campus is so large and adjacent to the greater Los Angeles community, individuals with criminal intent find it easy to access the University grounds. Regardless of the time of day or night and no matter where you are on campus, be alert and aware of your surroundings and exercise good commonsense safety precautions. If you park on campus, remember to lock your vehicle and consider investing in a steering wheel locking device and/or alarm. Take advantage of all of the safety services provided by the University and the UCLA Police Department. Use the Campus Escort Service when walking at night. Keep your room and apartment doors locked at all times. Most important, if you need assistance, do not hesitate to contact the UCLA Police Department.

# Endowed Chairs

Although UCLA is a public institution, private gifts are increasingly important in maintaining the quality of the University's three missions of teaching, research, and community service. Among the principal forms of private support are endowed professorships or "chairs," which support the educational and research activities of distinguished members of the faculty.

As this catalog goes to press, UCLA has 106 endowed chairs which have been approved by The Regents of the University of California, as follows. (\* Asterisks indicate new chairs which have been approved by The Regents since publication of the 1992-93 *UCLA General Catalog*.)

## College of Letters and Science

- Maurice Amado Chair in Sephardic Studies
- Armenian Educational Foundation Chair in Modern Armenian History
- Arthur Andersen and Company Alumni Chair in Business Economics
- Henry J. Bruman Chair in German History
- Ralph Bunche Chair in International Studies
- Edward W. Carter Chair in Netherlandish Art
- James S. Coleman Chair in International Development Studies
- Courtaulds Chair in Chemistry
- Mr. and Mrs. C.N. Flint Professorship of Philosophy
- Gloria and Paul Griffin Chair in Philosophy
- Armand Hammer Chair in Leonardo Studies
- Marvin Hoffenberg Chair in American Politics and Public Policy
- Endowed Chair in Modern European History
- Franklin D. Murphy Chair in Italian Renaissance Studies
- Narekatsi Chair in Armenian Studies
- 1939 Club Chair
- President's Chair in Developmental Immunology
- Hans Reichenbach Chair in Philosophy of Science
- David S. Saxon Presidential Chair in Physics
- Louis B. Slichter Chair in Geophysics and Planetary Physics
- Charles Speroni Chair in Italian Literature and Culture
- UCLA Alumni and Friends of Japanese Ancestry Chair in Japanese American Studies
- UCLA Foundation Chair
- Saul Winstein Chair in Organic Chemistry

## School of the Arts

- UCLA Art Council Professorship of Art

## School of Engineering and Applied Science

- L.M.K. Boelter Chair in Engineering
- Norman E. Friedmann Chair in Knowledge Sciences

- Hughes Aircraft Company Chair in Electrical Engineering
- Hughes Aircraft Company Chair in Manufacturing Engineering
- Levi James Knight, Jr., Chair in Engineering
- Nippon Sheet Glass Company Chair in Materials Science
- Northrop Chair in Electrical Engineering/Electromagnetics
- Ralph M. Parsons Chair in Chemical Engineering
- Rockwell International Chair in Engineering
- TRW Chair in Electrical Engineering

## Graduate School of Architecture and Urban Planning

- S. Charles Lee Chair in Architecture and Urban Planning
- Harvey S. Perloff Chair

## Graduate School of Education

- Allan Murray Cartter Chair in Higher Education
- George F. Kneller Chair in Education and Philosophy

## School of Law

- Harry Graham Balter Chair in Law
- Connell Professorship of Law
- Richard C. Maxwell Chair in Law
- Arjay and Frances Fearing Miller Chair in Law
- David G. Price and Dallas P. Price Chair in Law
- Security Pacific Bank Chair
- William D. Warren Chair in Law

## John E. Anderson Graduate School of Management

- Allstate Chair in Insurance and Finance
- Marion Anderson Chair in Management
- California Chair in Real Estate and Land Economics
- Edward W. Carter Chair in Business Administration
- James A. Collins Chair in Management
- Warren C. Corder Chair in Money and Financial Markets
- Ernst and Young Chair in Accounting
- Henry Ford II Chair in International Management
- Goldyne and Irwin Hearsh Chair in Money and Banking
- IBM Chair in Computers and Information Systems
- Harry and Elsa Kunin Chair in Business and Society
- William E. Leonhard Chair in Management
- Chauncey J. Medberry Chair in Management
- Paine Chair in Management
- Times Mirror Chair in Management Strategy and Policy

## School of Social Welfare

- Marjorie Crump Chair in Social Welfare

## School of Medicine

- William S. Adams, M.D., Chair in Medicine
- Louis D. Beaumont Chair in Surgery
- Bowyer Professorship of Medical Oncology
- Judson Braun Chair in Biological Psychiatry
- Joseph Campbell Chair in Child Psychiatry
- Iris Cantor Chair in Breast Imaging
- Edward W. Carter Chair in Internal Medicine
- Castera Chair in Cardiology
- Tony Coelho Chair in Neurology
- Crump Chair in Medical Engineering
- M. Philip Davis Chair in Microbiology and Immunology
- Dumont-UCLA Chair in Transplantation Surgery
- Max Factor Family Foundation Chair in Nephrology
- Charles Kenneth Feldman Chair in Ophthalmology
- Dolly Green Chair in Ophthalmology
- Maud Cady Guthman Chair in Cardiology
- Chizuko Kawata Chair in Cardiology
- George F. Kneller Chair in Family Medicine
- Grace and Walter Lantz Chair in Ophthalmology
- Eleanor I. Leslie Chair in Neuroscience
- William P. Longmire, Jr., Chair in Surgery
- Della Martin Chair in Psychiatry
- Sherman M. Mellinkoff Distinguished Professor in Medicine Chair
- James H. Nicholson Chair in Pediatric Cardiology
- Samuel J. Pearlman, M.D., and Della Z. Pearlman Chair in Head and Neck Surgery
- Thomas P. and Katherine K. Pike Chair in Alcohol Studies
- Elizabeth R. and Thomas E. Plott Chair in Gerontology
- Leo G. Rigler Chair in Radiological Sciences
- Augustus S. Rose Chair in Neurology
- Jennifer Jones Simon Chair in Biophysics
- Norman F. Sprague Chair in Molecular Oncology
- Frances and Ray Stark Chair in Ophthalmology
- Francis Stark Chair in Neurology
- Jules Stein Chair in Ophthalmology
- W. Eugene Stern Chair in Neurosurgery
- Ruth and Raymond Stotter Chair in Neurosurgery
- Dorothy and Leonard Straus Chair in Gastroenterology
- Streisand Chair in Cardiology
- Leon J. Tiber, M.D., and David S. Alpert, M.D., Chair in Medicine
- Richard D. and Ruth P. Walter Chair in Neurology
- Wasserman Professorship of Ophthalmology

## School of Nursing

- \*Lulu Wolf Hassenplug Chair in Nursing

## School of Public Health

- Fred H. Bixby Chair in Population Policy
- Fred W. and Pamela K. Wasserman Chair in Health Services

# University Administrative Officers

## Regents Ex Officio

*Governor of California*

Pete Wilson

*Lieutenant Governor of California*

Leo T. McCarthy

*Speaker of the Assembly*

Willie L. Brown, Jr.

*State Superintendent of Public Instruction*

To be named

*President of the Alumni Association of the University of California* +

Robert E. Murphy

*Vice President of the Alumni Association of the University of California* +

Roy L. Shults

*President of the University*

J.W. Peltason

## Appointed Regents +

William T. Bagley (2002)

Roy T. Brophy (1998)

Clair W. Burgener (2000)

Glenn Campbell (1996)

Frank W. Clark, Jr. (2000)

Ward Connerly (2005)

John G. Davies (2004)

Tirso del Junco (1997)

Alice J. Gonzales (1998)

S. Sue Johnson (2002)

Meredith J. Khachigian (2001)

Leo S. Kolligian (1997)

Howard H. Leach (2001)

Lester Hsin-Pei Lee (2005)

S. Stephen Nakashima (2004)

Dean A. Watkins (1996)

Harold M. Williams (1994)

Jacques S. Yeager (1994)

Darby Ann Morrisroe (1994) +

## Faculty Representatives to the Board of Regents

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Daniel L. Simmons

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*Vice President — Agriculture and Natural Resources*

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*Vice President — University and External Relations*

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*Special Assistant to the President*

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*President Emeritus of the University and Professor Emeritus of Economics*

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*President Emeritus of the University and Professor Emeritus of Physics*

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*Vice President Emeritus of the University, Professor Emeritus of Agricultural Economics, and Agricultural Economist Emeritus*

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*Treasurer Emeritus of The Regents*

Owsley B. Hammond

*General Counsel Emeritus of The Regents*

Thomas J. Cunningham

## Chancellors of the Campuses

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Chang-Lin Tien

*Chancellor at Davis*

Theodore L. Hullar

*Chancellor at Irvine*

Laurel L. Wilkening

*Chancellor at Los Angeles*

Charles E. Young

*Chancellor at Riverside*

Raymond L. Orbach

*Chancellor at San Diego*

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*Chancellor at San Francisco*

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*Chancellor at Santa Barbara*

Barbara S. Uehling

*Chancellor at Santa Cruz*

Karl S. Pister

+Terms of Regents appointed by the Governor expire February 28 of the year named in parentheses. The Student Regent (Darby Ann Morrisroe) and Alumni Regents serve a one-year term beginning July 1 and ending June 30 of the year listed.



## University Professors

- E. Margaret Burbidge, *University Professor*, San Diego, Department of Physics
- Melvin Calvin, *University Professor Emeritus*, Berkeley, Department of Chemistry
- Donald J. Cram, *University Professor*, Los Angeles, Department of Chemistry and Biochemistry
- Gerard Debreu, *University Professor*, Berkeley, Departments of Economics and Mathematics
- Amos Funkenstein, *University Professor*, Berkeley, Department of History
- Murray Krieger, *University Professor*, Irvine, Department of English and Comparative Literature
- Yuan T. Lee, *University Professor*, Berkeley, Department of Chemistry
- Julian S. Schwinger, *University Professor Emeritus*, Los Angeles, Department of Physics
- Glenn T. Seaborg, *University Professor Emeritus*, Berkeley, Lawrence Berkeley Laboratory
- S. Jonathan Singer, *University Professor*, San Diego, Department of Biology
- Neil J. Smelser, *University Professor*, Berkeley, Department of Sociology
- Edward Teller, *University Professor Emeritus*, Livermore, Lawrence Livermore Laboratory
- Charles H. Townes, *University Professor Emeritus*, Berkeley, Department of Physics
- Sherwood L. Washburn, *University Professor Emeritus*, Berkeley, Department of Anthropology
- John R. Whinnery, *University Professor Emeritus*, Berkeley, Department of Electrical Engineering and Computer Sciences
- Hayden White, *University Professor*, Santa Cruz, Board of Studies in History of Consciousness

## UCLA Administrative Officers

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- Vice Chancellor — Capital Programs*  
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- Vice Chancellor — Graduate Programs and Dean of Graduate Division*  
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- Vice Chancellor — Student Affairs*  
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Don A. Rockwell, M.D.
- Director of Neuropsychiatric Institute*  
Gary L. Tischler, M.D.
- Director of UCLA Medical Center*  
Raymond G. Schultze, M.D.
- University Librarian*  
Gloria S. Werner, M.L.
- Dean of UCLA Extension and Continuing Education*  
Robert Lapiner, Ph.D.

## Deans of UCLA Colleges and Schools

- Graduate School of Architecture and Urban Planning*  
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- School of Dentistry*  
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- School of Engineering and Applied Science*  
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- School of Law*  
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- Division of Life Sciences*  
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- Division of Physical Sciences*  
Clarence A. Hall, Jr., Ph.D.
- Division of Social Sciences*  
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- School of Medicine*  
Sidney H. Golub, Ph.D., *Interim*
- School of Nursing*  
Ada M. Lindsey, R.N., Ph.D.
- School of Public Health*  
Abdelmonem A. Afifi, Ph.D.
- School of Social Welfare*  
Rosina M. Becerra, Ph.D.
- School of Theater, Film, and Television*  
Gilbert Cates, M.A.



*UCLA mascot in the late 1940s.*

# Counselors and Advisers

Department/Major	Counselor/Adviser	Address	Extension
Aerospace Studies	Gary A. Jorgenson, Faculty Alexandra Skierso, Staff	212 Men's Gym 208 Men's Gym	51742 51742
African Area Studies (Graduate)	Alice Nabalamba, Staff Beverly K. Robinson, Faculty	10250 Bunche Hall 10373 Bunche Hall	52944 56552
African Languages (Undergraduate)	Thomas J. Hinnebusch, Faculty	3125 Campbell Hall	59747
African Studies (Undergraduate)	Christopher Ehret, Faculty	6265 Bunche Hall	54093
Afro-American Studies	Liz Bean, Staff (G/UG) Franklin Gilliam, Jr., Faculty (G/UG)	160 Haines Hall 170 Haines Hall	68009 57403
American Indian Studies (Graduate)	Hanay Geiogamah, Faculty Dennis Moristo, Staff	3220 Campbell Hall 3101 Campbell Hall	57315 69671
Anatomy and Cell Biology (Graduate)	Edwin L. Cooper, Faculty	73-245 CHS	59556
Anesthesiology/Nurse Anesthesia (Graduate)	Scot D. Foster/Wynne R. Waugaman, Faculty	14445 Olive View Drive, Sylmar	(818) 364- 3277
Anthropology	Rosemarie Ashamalla, Staff (UG) Ann Walters, Staff (G)	341 Haines Hall 341 Haines Hall	63362 52511
Applied Linguistics (Graduate)	Colette Kramer, Staff	3300A Rolfe Hall	61985
Archaeology (Graduate)	Helle Girey, Staff	A148 Fowler Building	54169
Architecture (Graduate)	Larry Nadeau, Staff	B302 Perloff Hall	56103
Art	Eve Luckring, Staff (G/UG)	1300 Dickson	53077
Art History	Merrilyn Pace, Staff (G/UG)	3209 Dickson	53480
Arts, School of the	Students A-L: Beth Gray, Staff Students M-Z: Betsy Foster, Staff	125 East Melnitz Building  125 East Melnitz Building	63564  63564
Asian American Studies	Enrique Delacruz, Staff (G/UG)	3230 Campbell Hall	52974
Astronomy	Matthew A. Malkan, Faculty (G) Edward L. Wright, Faculty (UG)	8322 Math Sciences 8308 Math Sciences	53404 55755
Athletics	Christy Brawner/Wayne Johnson/Richard Stanley, Staff	Morgan Center	58699
Atmospheric Sciences	Warren Blier, Faculty (UG) Michael Carr, Staff (G/UG) Robert Fovell, Faculty (UG) Richard M. Thorne, Faculty (G) Richard Turco, Faculty (G) Michio Yanai, Faculty (G)	7127 Math Sciences 7127 Math Sciences 7127 Math Sciences 7127 Math Sciences 7127 Math Sciences 7127 Math Sciences	67428 51954 69956 55974 56936 51653
Biological Chemistry (Graduate)	Peter A. Edwards, Faculty Gregory S. Payne, Faculty	33-257 CHS 33-257 CHS	63717 63121
Biology	NancyPurtill/Jocelyn Yamadera, Staff (G) Roxane Winkler, Staff (UG)	2316 Life Sciences 2312 Life Sciences	51959 51680
Biomathematics (Graduate)	Carol Newton, Faculty	AV-617 CHS	55800
Biomedical Physics/Radiological Sciences (Graduate)	Loretta Brookes, Staff/Moses A. Greenfield, Faculty/ Edward J. Hoffman, Faculty	1V-365 CHS	57811
Chemistry and Biochemistry	Phyllis Jergenson, Staff (G) Wendy Fujinami, Staff (UG)	4006 Young Hall 4016 Young Hall	53150 51859
Chemistry/Materials Science (Undergraduate)	Barbara Brooks, Staff Nancy M. Haegel, Faculty	5732K Boelter Hall 5731H Boelter Hall	58918 55473
Chicana and Chicano Studies (Undergraduate)	To be named, Staff/David E. Lopez, Faculty	67 Kinsey Hall	67695
Classics	Bernard D. Frischer, Faculty (G) Robert A. Gurval, Faculty (UG)	7377 Bunche Hall 7276 Bunche Hall	51867 56744
Communication Studies (Undergraduate)	Eugenie H. Dye, Staff	330A Kinsey Hall	68446, 53303
Comparative Literature (Graduate)	Katherine King, Faculty C.P. Haun Saussy, Faculty	331 Royce Hall 284A Royce Hall	63613 59687
Cybernetics (Undergraduate)	Beth Rubin, Staff	6291B Boelter Hall	57482
Dance	Elsie Dunin, Faculty (G) Wendy Temple, Staff (UG)	124 Dance Building 148 Dance Building	53952 61328
Dentistry/Oral Biology (Graduate)	Soon-Ok Dixon, Staff M.S.: Douglas Junge, Faculty Ph.D.: Lawrence E. Wolinsky, Faculty	63-050 Dentistry 63-014 Dentistry 63-070 Dentistry	51955 55795 50030
Design	Roma King, Staff (G/UG)	1200 Dickson	53645
Development Studies (Undergraduate)	Qamarul Huda, Staff	11276 Bunche Hall	52927
Earth and Space Sciences	John M. Christie, Faculty (G) Wayne A. Dollase, Faculty (UG) Spring Verity, Staff (G/UG)	4680 Geology 3667 Geology 3683 Geology	51420 53823 53917

Department/Major	Counselor/Adviser	Address	Extension	
East Asian Languages and Cultures	Chinese:			
	Leo Ou-fan Lee, Faculty (G)	296A Royce Hall	59465	
	C.P. Haun Saussy, Faculty (UG)	284A Royce Hall	59687	
	Japanese:			
	Shoichi Iwasaki, Faculty (UG)	284B Royce Hall	69289	
East Asian Studies (Undergraduate)	Herbert E. Plutschow, Faculty (G)	264 Royce Hall	59297	
	Korean:			
	John B. Duncan, Faculty (G)	278 Royce Hall	53773	
	Chinese:			
	Richard E. Strassberg, Faculty	262 Royce Hall	65857	
Economics	Japanese:			
	Herbert E. Plutschow, Faculty	264 Royce Hall	59297	
	Korean:			
	John B. Duncan, Faculty	278 Royce Hall	53773	
	Lora Clarke, Staff (G)	8242 Bunche Hall	61413	
Education (Graduate)	Helen Wilke, Staff (UG)	2253 Bunche Hall	55118	
	Cary Whitcup, Staff	1605 Maxxam Building	58326	
	Engineering and Applied Science	Office of Student Affairs (UG)	6426 Boelter Hall	52826
	Chemical:			
	Yoram Cohen, Faculty (G)	5531 Boelter Hall	58766	
English	Civil:			
	Lewis P. Felton, Faculty (G)	3066C Engineering I	55633	
	Computer Science:			
	Milos D. Ercegovic, Faculty (G)	3732 Boelter Hall	55414	
	Electrical:			
	Oscar M. Stafsudd, Jr., Faculty (G)	58-113 Engineering IV	54360	
	Materials Science:			
	Jenn-Ming Yang, Faculty (G)	5732H Boelter Hall	52758	
	Mechanical, Aerospace, and Nuclear:			
	George E. Apostolakis, Faculty (G)	38-137 Engineering IV	51300	
Environmental Science and Engineering (Graduate)	Adele Butterfield, Staff (G)	2203 Rolfe Hall	51223	
	Holly Gillcash/Reed Wilson, Staff (UG)	2222 Rolfe Hall	51389	
	Richard F. Ambrose, Faculty	46-059 CHS	56144	
Ethnomusicology and Systematic Musicology	Myrna Prescott, Staff	46-081 CHS	59901	
	Arthur M. Winer, Faculty	46-081 CHS	61278	
	Alfred Bradley, Staff (UG)	2539 Schoenberg Annex	54768	
Folklore and Mythology (Graduate)	Mary Crawford, Staff (G)	2539 Schoenberg Annex	54769	
	Joseph F. Nagy, Faculty	1041 AGSM	53962	
	Patrick Coleman, Faculty (UG)	246A Royce Hall	54183	
French	Nicholas Collaros, Faculty (UG)	232G Royce Hall	63272	
	Eric Gans, Faculty (G)	238 Royce Hall	54294	
	Andrea Loselle, Faculty (UG)	240B Royce Hall	53040	
	Gerry A. Hale, Faculty (UG)	1251 Bunche Hall	51166,	
Geography/Environmental Studies			53426	
	Arlene Meyers, Staff (G)	1253 Bunche Hall	54655	
	Students A-L:			
Germanic Languages	Jill Anne Kowalik, Faculty (UG)	324 Royce Hall	53955	
	Wolfgang Nehring, Faculty (G)	326 Royce Hall	53955	
	Students M-Z:			
History	Ehrhard Bahr, Faculty (G)	310A Royce Hall	53955	
	Christopher M. Stevens, Faculty (UG)	328 Royce Hall	53955	
	Barbara Bernstein, Staff (G)	6265 Bunche Hall	53269	
	Sylvia Dillon/Paul Padilla, Staff (UG)	6248 Bunche Hall	53720	
	Sheila Patel, Staff (G)	6273A Bunche Hall	53124	
History/Art History (Undergraduate)	Sylvia Dillon/Paul Padilla, Staff	6248 Bunche Hall	53720	
	Indo-European Studies (Graduate)	Hartmut E.F. Scharfe, Faculty	290 Royce Hall	52174
Islamic Studies (Graduate)			68235	
	Michael G. Morony, Faculty	6242 Bunche Hall	51962	
	Marga Cottino-Jones, Faculty (G)	354 Royce Hall	61345	
Italian	Lucia Re, Faculty (UG)	350 Royce Hall	61350	
	Latin American Studies	Carolyn Ramirez-La Faso, Staff (G/UG)/Linda Rodriguez, Faculty (G/UG)	10347 Bunche Hall	66571
Law, School of (Graduate)	Admissions Information	71 Dodd Hall	54041	
	Letters and Science, College of	College Counseling Service	A316 Murphy Hall	51965
Library and Information Science (Graduate)	ASK peer counselors — available at Campbell Hall (southwest corner), Royce/Powell Quad, and Schoenberg Hall (vending area), weekdays 10 a.m. to 2 p.m., in Griffin Commons Monday, Tuesday, and Thursday 4 to 8 p.m. and Wednesday 6 to 8 p.m., and adjacent to 1105 Murphy Hall, weekdays 9 a.m. to 4 p.m.			
	Linguistics	Constance Nyhan/Joan Westra, Staff	205 GSLIS Building	55269
		Thomas J. Hinnebusch, Faculty (UG)	3125 Campbell Hall	59747
		Nina M. Hyams, Faculty (UG)	3125 Campbell Hall	68375
		Hilda Koopman, Faculty (UG)	3125 Campbell Hall	59466
Linguistics and Computer Science (Undergraduate)		Pamela L. Munro, Faculty (UG)	3125 Campbell Hall	60056
		Russell G. Schuh, Faculty (G)	3125 Campbell Hall	50634
		Edward P. Stabler, Faculty	3125 Campbell Hall	58376
		M.B.A.: Ilene Hanotis, Staff	3371 AGSM	56121
		Ph.D.: Gloria Mugavero, Staff	3379 AGSM	52824
Management (Graduate)		F. Michael Christ, Faculty (G)	6356 Math Sciences	54971
		Linda Johnson, Staff (UG)	6356 Math Sciences	61286
Mathematics		Admissions Information	13-144 CHS	56081
		Asim Dasgupta, Faculty	13-272 Factor Building	68649
Medicine, School of (Graduate)		Patricia J. Johnson, Faculty	43-265 CHS	54870
		Janna Weimer, Staff	43-118 CHS	65148
	Microbiology and Immunology (Graduate)			

Department/Major	Counselor/Adviser	Address	Extension
Microbiology and Molecular Genetics	Heidi Cohen, Staff (G/UG)	1602 Molecular Sciences	58482
Military Science	Kevin Murphy, Faculty	142 Men's Gym	57381
Molecular Biology (Graduate)	Sabeeha Merchant, Faculty	168 MBI	51018
Music	Alfred Bradley, Staff (UG)	2539 Schoenberg Annex	54768
	Mary Crawford, Staff (G)	2539 Schoenberg Annex	54769
Musicology	Alfred Bradley, Staff (UG)	2539 Schoenberg Annex	54768
	Mary Crawford, Staff (G)	2539 Schoenberg Annex	54769
Naval Science	Donna Tenerelli, Staff	123 Men's Gym	59075
Near Eastern Languages and Cultures	Elizabeth Carter, Faculty (UG)	297 Kinsey Hall	65474
	Thomas Penchoen, Faculty (G)	392 Kinsey Hall	61385
Near Eastern Studies (Undergraduate)	Stanford J. Shaw, Faculty	5353 Bunche Hall	51374, 54601
Neuroscience	Evelyn J. Cederbaum, Staff (UG)	73-369 CHS	50427
	Wendy B. Macklin, Faculty (G)	48-162 NPI&H	62988
	Lauri Reed, Staff (UG)	73-364 CHS	62349
	Jody Spillane, Staff (G)	73-360 CHS	58153
Nursing	Lauretta Bobo/Kathy Scrivner, Staff (UG)	2-200 Factor Building	57181
	La Juana Richards/Kathy Scrivner, Staff (G)	2-200 Factor Building	57181
Oral Biology/Dentistry (Graduate)	Soon-Ok Dixon, Staff	63-050 Dentistry	51955
	M.S.: Douglas Junge, Faculty	63-014 Dentistry	55795
	Ph.D.: Lawrence E. Wolinsky, Faculty	63-070 Dentistry	50030
Pathology and Laboratory Medicine (Graduate)	Judith A. Berliner, Faculty	13-186 CHS	55719, 52436
Pharmacology (Graduate)	Richard W. Olsen, Faculty	23-278 CHS	55093
Philosophy	Kristin Carnohan, Staff (G/UG)	329 Dodd Hall	61356
Physics	Penny Lucky, Staff (G)	3-145G Knudsen Hall	52307
	Françoise Quéval, Staff (UG)	3-160 Knudsen Hall	52453
Physiological Science	Leanne Januszewski, Staff (UG)	2834 Slichter Hall	53892
	Suzie Vader, Staff (G)	2834 Slichter Hall	53891
Physiology (Graduate)	Sheri Klein, Staff	53-237 CHS	56717
	Sally J. Krasne, Faculty	1126 JLNRC	58884
Political Science	Kathy Escobedo, Staff/Michael Wallerstein, Faculty (UG)	4256 Bunche Hall	53862
	Barbara Jess, Staff/Thomas Schwartz, Faculty (G)	4266 Bunche Hall	53372
Psychiatry and Biobehavioral Sciences (Graduate)	Mary Mossman, Staff (G/UG)	C8-202 NPI&H	50770, 53855
Psychology	Beth Argus/Jill Langley, Staff (UG)	1531 Franz Hall	52730
	Dena Chertoff, Staff (G)	3457 Franz Hall	54117
	Steve Herbert, Staff (UG)	1531 Franz Hall	59882
Public Health (Graduate)	Office of Student Affairs: Glenda Baker, Staff/Judith M. Siegel, Faculty	16-071 CHS	55516
	Biostatistics: Sue Ingham, Staff/Peter A. Lachenbruch, Faculty	51-254 CHS	55250
	Community Health Sciences: Emil Berkanovic, Faculty/Diana Springer, Staff	26-078 CHS	65487
	Environmental Health Sciences: Climis A. Davos, Faculty/Jayne Rosenthal, Staff	56-070 CHS	51348
	Epidemiology: Ralph R. Frerichs, Faculty/Mary Jane Pica, Staff	71-254 CHS	58579
	Health Services: Kristen Morefield, Staff/Stuart O. Schweitzer, Faculty	31-254 CHS	52594
Radiological Sciences/Biomedical Physics (Graduate)	Loretta Brookes, Staff/Moses A. Greenfield, Faculty/ Edward J. Hoffman, Faculty	1V-365 CHS	57811
Religion, Study of (Undergraduate)	Robert M. Adams, Faculty	370 Dodd Hall	62799
	Kristin Carnohan, Staff	329 Dodd Hall	61356
Romance Linguistics and Literature (Graduate)	Michelle Markel-Cohen, Staff	359 Royce Hall	50237
	A. Carlos Quicoli, Faculty	5325 Rolfe Hall	68584
Scandinavian Section	James R. Massengale/Mary Kay Norseng/ Ross P. Shideler, Faculty (G/UG)	332 Royce Hall	52432
Slavic Languages and Literatures	Henning Andersen, Faculty (G)	115 Kinsey Hall	58123, 52676
	Michael Heim, Faculty (UG)	115 Kinsey Hall	57894, 52676
Social Welfare (Graduate)	Jane E. Kurohara/James Lubben/ Terrence J. Roberts, Faculty	247 Dodd Hall	57737
Sociology	Marlies Dietrich, Staff (G)	254C Haines Hall	51026
	Mary Jo Johnson, Staff (UG)	254A Haines Hall	51215
Spanish and Portuguese	Hilda Peinado, Staff (G/UG)	5314 Rolfe Hall	51430
Teaching English as a Second Language and Applied Linguistics (Graduate)	Colette Kramer, Staff	3300A Rolfe Hall	61985
Theater, Film, and Television, School of	Andrea Buchanan, Staff (G)	103 East Melnitz Building	51749
	Roslyn Trezevant Haley, Staff (UG)	103 East Melnitz Building	51766
	Steven Moore, Staff (UG)	103 East Melnitz Building	53663
	Cecilia Wilmott, Staff (G)	103 East Melnitz Building	60466
Urban Planning (Graduate)	Robyn Martin, Staff	1125J Perloff Hall	57331
Women's Studies (Undergraduate)	Mary M. Smith, Staff	240 Kinsey Hall	68156
World Arts and Cultures (Undergraduate)	Silvily Kessler Thomas, Staff	124 Dance Building	63696, 61342

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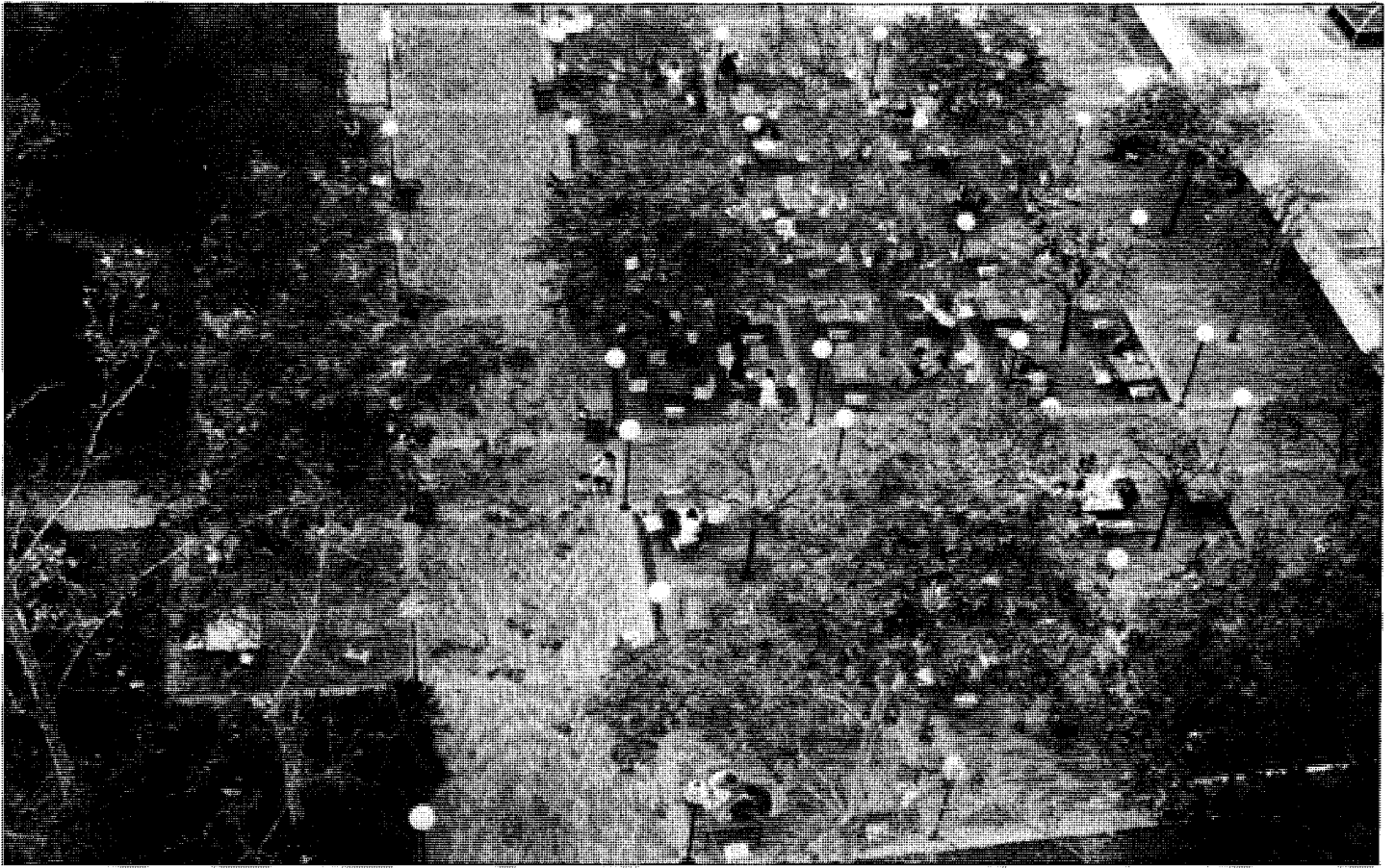


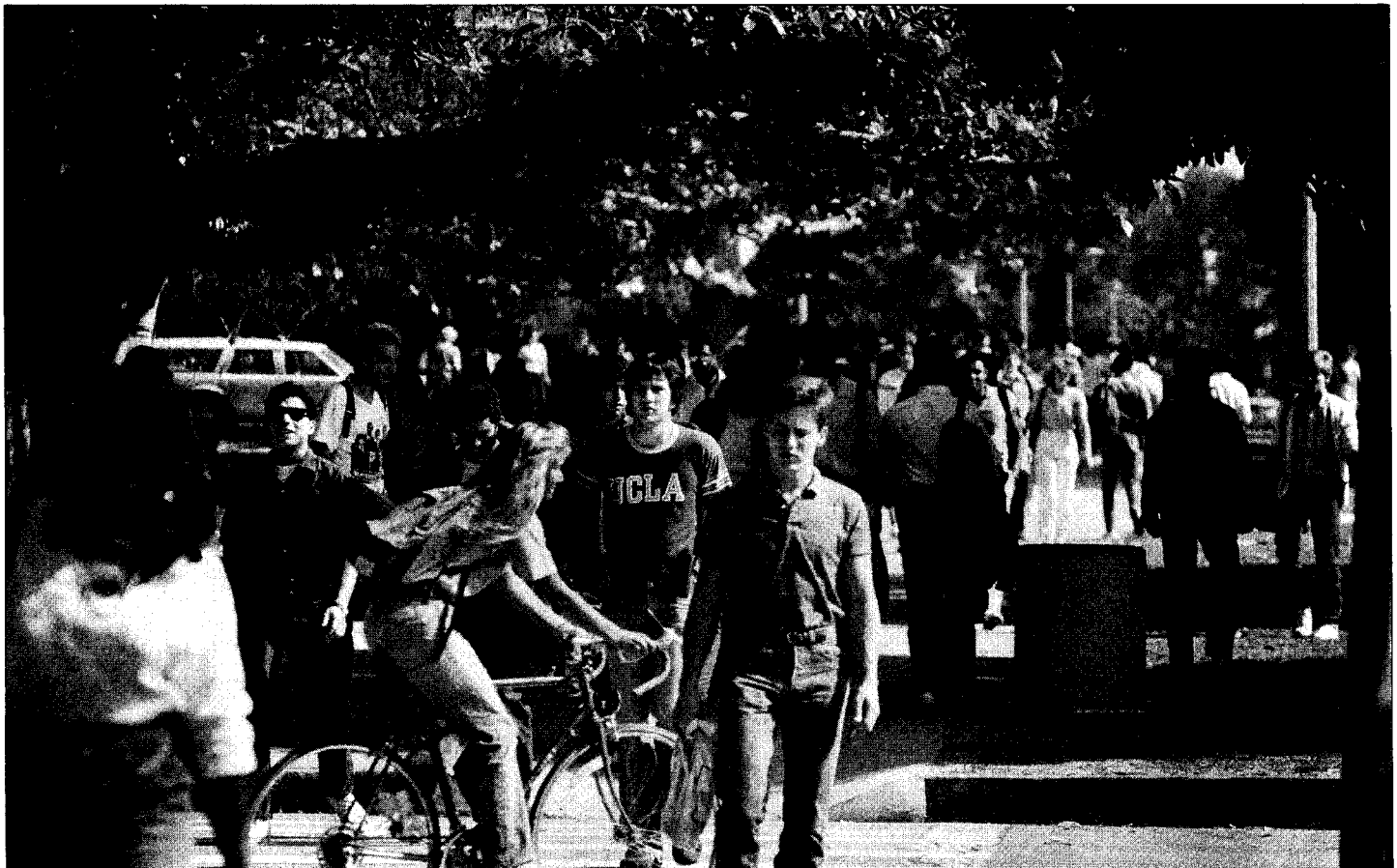
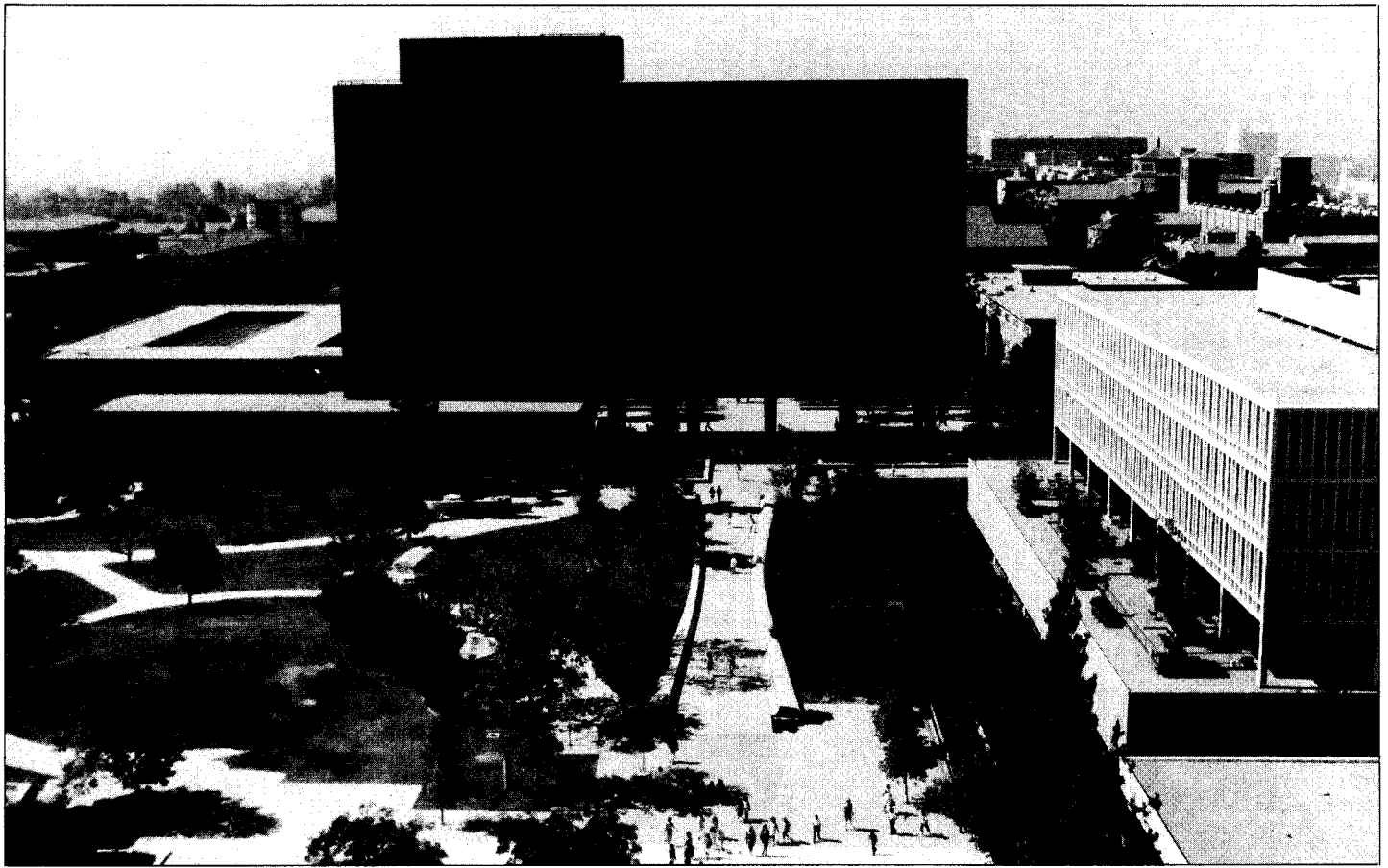
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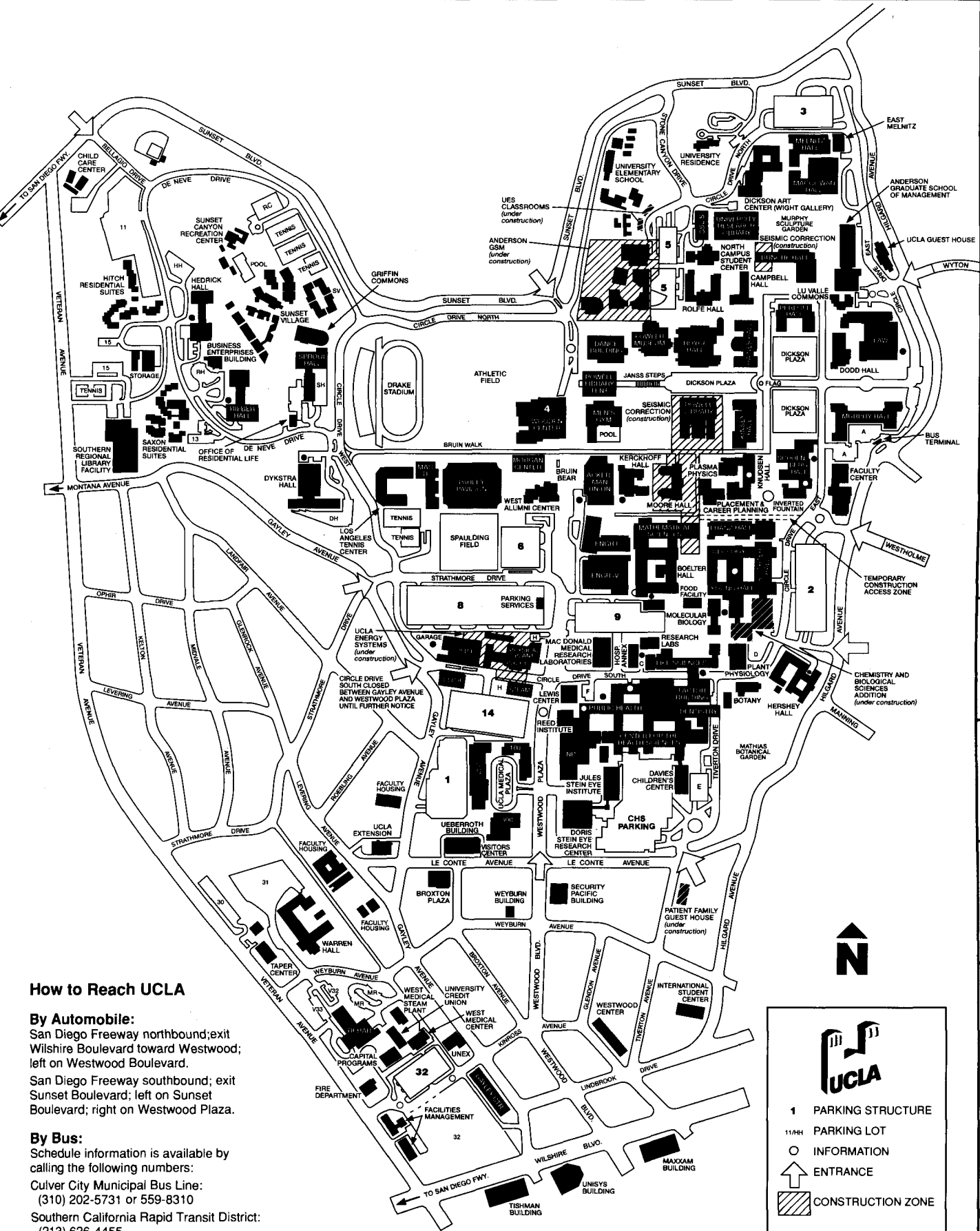
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**How to Reach UCLA**

**By Automobile:**  
 San Diego Freeway northbound; exit Wilshire Boulevard toward Westwood; left on Westwood Boulevard.  
 San Diego Freeway southbound; exit Sunset Boulevard; left on Sunset Boulevard; right on Westwood Plaza.

**By Bus:**  
 Schedule information is available by calling the following numbers:  
 Culver City Municipal Bus Line:  
 (310) 202-5731 or 559-8310  
 Southern California Rapid Transit District:  
 (213) 626-4455  
 Santa Monica Municipal Bus Line:  
 (310) 451-5445

**UCLA**

- 1 PARKING STRUCTURE
- 11/4H PARKING LOT
- INFORMATION
- ↑ ENTRANCE
- ▨ CONSTRUCTION ZONE

## CAMPUS LEGEND

Building	Grid No.
Ackerman Student Union	E5
Belt Library (Dickson Art Center)	B6
Boelter Hall	F5
Botany	F6
Broxton Plaza	H4
Bunche Hall	C6
Business Enterprises Building	C2
Campbell Hall	C6
Campus Services Buildings I and II	F4
Capital Programs Building	I3
Center for the Health Sciences	G5
Biomedical Cyclotrons	G5
Brain Research Institute	G5
Davies Children's Center	G5
Dentistry, School of	F5
Doris Stein Eye Research Center	G5
Factor Health Sciences Building	F5
Jules Stein Eye Institute	G5
Lewis Neuromuscular Research Center	F4
MacDonald Medical Research Laboratories	F5
Medical Center	G5
Medicine, School of	G5
Neuropsychiatric Institute and Hospital	G5
Nursing, School of	F5
Public Health, School of	F5
Reed Neurological Research Center	G4
Chemistry and Biological Sciences (Molecular Sciences)	F6
Child Care Center	B1
Court of Sciences Food Facility	F5
Dance Building	C5
Dickson Art Center	B6
Dodd Hall	D6
Drake Stadium	D3
Dykstra Hall	E3
East Melnitz Building	B6
Engineering I	E5
Engineering IV	E5
Facilities Management	I3
Faculty Center	E6
Fowler Museum of Cultural History	C5
Franz Hall	E6
Garage	F4
Gayley Center	I4
Geology	E6
Griffin Commons (Sunset Village)	C3
Grunwald Center for the Graphic Arts (Dickson Art Center)	B6
Haines Hall	C6
Hedrick Hall	C2
Hershey Hall	F6
Hitch Residential Suites	C1
International Student Center	I5
Kerckhoff Hall	D5
Kinsey Hall	D6
Knudsen Hall	E6
Law, School of	C7
Library and Information Sciences, Graduate School of	B5
Life Sciences	F5
Los Angeles Tennis Center	E3
Lu Valle Commons	C6
Macgowan Hall	B6
Management, Anderson Graduate School of	C6
Mathematical Sciences	E5
Mathias Botanical Garden	G6
Maxxam Building (Graduate School of Education)	I5
Melnitz Hall	B6

Building	Grid No.
Men's Gymnasium	D5
Molecular Biology Institute	F5
Moore Hall	E5
Morgan Intercollegiate Athletics Center	D4
Murphy Hall (Administration)	D6
Murphy Sculpture Garden	B6
North Campus Student Center	C6
Parking Services (Lot 8)	F4
Pauley Pavilion	E4
Perloff Hall	C6
Physical Plant Office	F4
Placement and Career Planning Center	E6
Plant Physiology	F6
Plasma Physics	D5
Police, Campus	F4
Powell Library	D5
Powell Library Tent	D5
Rehabilitation Center	I3
Residential Life Building	D3
Rieber Hall	D2
Rolfe Hall	C5
Royce Hall	C5
Saxon Residential Suites	D2
Schoenberg Hall	D6
Security Pacific Building	H4
Slichter Hall	E6
Southern Regional Library Facility	D1
Sproul Hall	D3
Sunset Canyon Recreation Center	B2
Sunset Village	C3
Taper Center	I2
Tishman Building	I4
UCLA Extension Building	G3
UCLA Guest House	C7
UCLA Medical Plaza	G4
Ueberroth Building	G4
Unisys Building	I5
University Credit Union	I3
University Elementary School	B5
University Research Library	B6
University Residence	B5
Visitors Center (Ueberroth Building)	H4
Warren Hall	H2
West Alumni Center	E4
West Medical Center	E4
Westwood Center (Monty's Building)	I5
Weyburn Building	H4
Wight Art Gallery (Dickson Art Center)	B6
Wooden Recreation and Sports Center	D4
Young Hall	E6

Parking Structures and Lots	Grid No.
Medical Plaza (1)	G4
Hilgard-Westholme (2)	E6
Hilgard-Sunset (3)	A6
Wooden Center (4)	D4
Sunset-Westwood (5)	C5
West Alumni Center (6)	E4
Gayley-Strathmore (8)	F4
Westwood-Circle Drive (9)	F5
Gayley-Landfair (14)	F4
Lot 32	I3
Medical Visitors (CHS)	G5

Grid numbers refer to map on previous page.



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# Correspondence Directory

**University of California, Los Angeles, CA 90024**

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

**Speech- and hearing-impaired persons: TDD (310) 825-2833**

<b>Office</b>	<b>Location</b>	<b>Telephone</b> (Area Code 310)
<b>Academic Advancement Program</b>	1209 Campbell Hall	825-1481
<b>Accounting Office, Student</b>	2333 Murphy Hall	825-5067
<b>Admissions</b>		
Undergraduate	1147 Murphy Hall	825-3101
Graduate	1247 Murphy Hall	825-1711
<b>Alumni Association</b>	West Alumni Center	825-3901
<b>Campus Ombuds Office</b>	1172 PCPC Building	825-7627
<b>Cashier's Office, Main</b>	1125 Murphy Hall	825-2201
<b>Dean of Students, Office of the</b>	1206 Murphy Hall	825-3871
<b>Financial Aid Office</b>	A129J Murphy Hall	206-0432
<b>Graduate Division</b>		
Affirmative Affairs Office	1248 Murphy Hall	825-2469
Graduate Student Support	1252 Murphy Hall	825-3521
Student and Academic Affairs Section	1255 Murphy Hall	825-4226
<b>Housing</b>		
UCLA Community Housing Office	350 De Neve Drive	825-4491
UCLA On-Campus Housing Assignment Office	270 De Neve Drive	825-4271
<b>International Student Center</b>	1023 Hilgard Avenue	208-4587
<b>International Students and Scholars, Office of</b>	105 Men's Gym	825-1681
<b>Libraries</b>		
College Library	Powell Library Tent	825-1938
University Research Library	URL Building, North Campus	825-1323
<b>Parking Services</b>	555 Westwood Plaza (Structure 8)	825-9871
<b>Placement and Career Planning Center</b>	PCPC Building	825-2981
<b>Registrar's Office</b>	1105 Murphy Hall	825-1091
<b>Student Health Service</b>	A2-130 Center for the Health Sciences	825-4073
<b>Students' Store</b>	B Level, Ackerman Union	825-7711
<b>Summer Sessions</b>	1147 Murphy Hall	825-8355
<b>UCLA Extension</b>	10995 Le Conte Avenue	825-9971
<b>Visitors Center</b>	1417 Ueberroth Building	206-8147