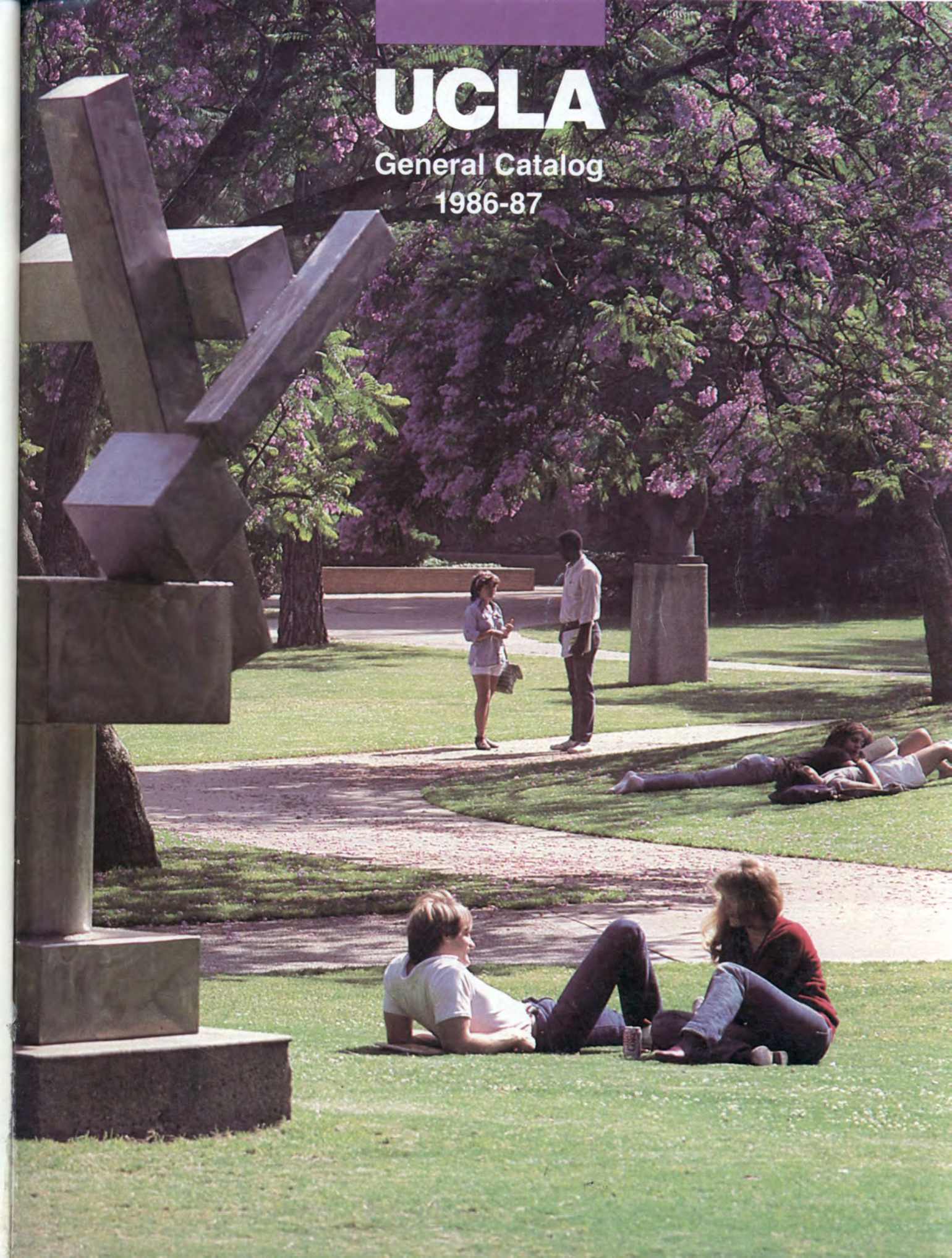
UCLA

General Catalog
1986-87



Organization of the Catalog

General Campus Colleges

College of Letters and Science

African Area Studies
African Studies
Afro-American Studies
American Indian Studies
Anthropology
Applied Linguistics
Archaeology
Asian American Studies
Astronomy
Atmospheric Sciences
Biology
Business and Administration
Chemistry and Biochemistry
Chicano Studies
Classics
Communication Studies
Comparative Literature
Cybernetics
Earth and Space Sciences
East Asian Languages and Cultures
East Asian Studies
Economics
English
Folklore and Mythology
French
Geography
Germanic Languages
History
History/Art History (see College of Fine Arts)
Honors Collegium
Indo-European Studies
International Relations
Islamic Studies
Italian
Kinesiology
Latin American Studies
Law and Society
Linguistics
Mathematics
Microbiology
Molecular Biology
Near Eastern Languages and Cultures
Near Eastern Studies
Philosophy
Physics
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
Urban Studies/Organizational Studies
Women's Studies
World Arts and Cultures (see College of Fine Arts)

College of Fine Arts

Art, Design, and Art History
Dance
History/Art History
Music
Theater, Film, and Television
World Arts and Cultures

General Campus Professional Schools

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

Graduate School of Management

School of Social Welfare

Health Science Schools

School of Dentistry

Oral Biology

School of Medicine

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

School of Nursing

School of Public Health

Environmental Science and Engineering

UCLA

GENERAL CATALOG
1986-87

UNIVERSITY OF CALIFORNIA, LOS ANGELES JUNE 1986 $4.00

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About This Catalog

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On the cover: The Franklin D. Murphy Sculpture Garden, featuring nearly 70 major works by late nineteenth- and twentieth-century masters, is a favorite spot for study, conversation, or just plain relaxation.

Want Extra Copies?

Copies of the 1986-87 *UCLA General Catalog* are available for purchase at the Students' Store. To obtain a copy by mail, send a check or money order for $6 within California or $7 outside California (includes UPS or first-class postage) to ASUCLA Students' Store, 308 Westwood Plaza, Los Angeles, CA 90024, ATTN: Mail Out. Make checks payable to ASUCLA. You may also charge the cost to your VISA or MasterCard by calling the Mail Out Department at (213) 825-6064.

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 College of Fine Arts. Further details on graduate programs are available in the Graduate Division publication, *Standards and Procedures for Graduate Study at UCLA.*

UCLA (USPS 646-680)
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Calendar

	Fall 1986	Winter 1987	Spring 1987
First day to file undergraduate application with admissions officer, 1147 Murphy Hall (last day will depend on number of applications received)	November 1, 1985	July 1, 1986	October 1, 1986
Last day to file application for graduate admission, readmission, or renewal of application with complete credentials and application fee, with Graduate Admissions Office, 1247 Murphy Hall	January 15, 1986	October 1	December 31
Last day to file graduate petitions for change of major with Graduate Division, 1225 Murphy Hall	January 15	October 1	December 31
First day to obtain Student Parking Request forms at Campus Parking Service	May 1	October 6	January 12, 1987
Distribution of registration materials by letter groups for continuing students	June 9	October 27	February 2
Schedule of Classes goes on sale at Students' Store, Ackerman Union and North Campus Student Center	June 11	October 29	February 4
New and reentrant students eligible to register by mail should receive Registration Forms at permanent address (weekly mailings)	June 23-August 15	November 3-26	February 6-25
Academic counseling for new students is available by appointment in college and school offices	July 1	Consult college or school	Consult college or school
Enrollment for student health insurance at A2-143 Center for the Health Sciences	July 1-October 10	December 1-January 16	March 23-April 10
Last day to submit Student Parking Request for campus parking permit	July 9 (1st run) August 19 (2nd run)	November 11	February 17
***First mailing date for continuing student registration (fee payment)**	July 16	October 27	February 2
***First mailing date for continuing student enrollment in classes**	July 16	November 5	February 11
Eligibility date for new and reentrant registration by mail (Statement of Legal Residence must be filed by this date in order to receive Registration Forms by mail)	August 1	October 31	January 30
***First mailing date for new and reentrant student registration (fee payment) and enrollment in classes**	August 6	November 14	February 20
Last day to file undergraduate application for readmission with Registrar, 1134 Murphy Hall (late applicants will pay a $50 late payment fee)	August 15	November 25	February 25
***Last mailing date for all students to enroll in classes**	August 29	November 19	February 27
***Last mailing date for all students to register (pay fees)**	August 29	December 12	March 13
Fee payments must be deposited in Cashier's Drop Slot, 1125 Murphy Hall	September 2-12	December 15-19	March 16-20
Mailing of Tentative Study List datamailer with results of enrollment processed by mail, and appointment for undergraduate enrollment in person	September 10	November 25	March 6
First mailing of validated Reg Card datamailer	September 10	December 19	March 13
Second mailing of validated Reg Card datamailer (Reg Cards for payments hereafter are available at 1134 Murphy Hall when quarter begins)	September 15	December 22	March 20
English as a Second Language Placement Examination (ESLPE)	September 16, 23	December 30	March 24
Chemistry/Mathematics Preliminary Examination	September 23	October 29	February 4
QUARTER BEGINS	September 23	January 5	March 30
Financial Aid check distribution to registered students begins	September 23	January 5	March 30
Issuing of UCLA Student I.D. Cards to new and reentering students begins	September 23	January 5	March 30
Registration (fee payment) in person, 8:30 a.m. to 5 p.m. (allow 45 minutes to complete process)	September 23-26	—	—
Undergraduate enrollment in person by appointment	September 23-26	December 4-6	March 12-14
French Placement Examination	September 24	January 5	March 30
Music Placement Examination	September 24	—	—
Spanish and Portuguese Placement Examination	September 25	December 29	March 26
Subject A Placement Examination and Proficiency Examinations for English 3	September 25	January 5	March 30
INSTRUCTION BEGINS	September 29	January 5	March 30
Changes in Study List without fee, 8:30 a.m. to 5 p.m.	September 29-October 10	December 8-12, January 5-16	March 16-20, 30-April 10

*Tentative dates; refer to *Schedule of Classes* for specific quarter.

	Fall 1986	Winter 1987	Spring 1987
LATE registration in person with $50 fee, 8:30 a.m. to 5 p.m.	September 29-October 10	December 22-24, 29-31, January 5-16	March 24-April 10
Graduate Study List Request should be filed with major department by 4 p.m.; all approved requests due to Registrar, 1134 Murphy Hall, by 5:15 p.m.	October 1	January 7	April 1
Last day: (1) To change Study List (add, drop courses) without fee (2) To check waiting lists for courses on computer (3) To file advancement to candidacy petitions for master's degree with Graduate Division, 1225 Murphy Hall (4) To file graduate leaves of absence with Graduate Division, 1225 Murphy Hall (5) To file Study List Request without fee (6) To file undergraduate request for fee reduction with college or school	October 10	January 16	April 10
Last day to register for ETS foreign language examinations in French, German, Russian, and Spanish	October 10	January 23	April 3
Registrar mails Official Study List datamailer to all registered students	October 13	January 20	April 13
WITH APPROVAL OF ACADEMIC DEAN: **(1) Last day for graduates to ADD courses with $3 petition fee** **(2) Last day for graduates to file Late Study List with $50 fee** **(3) Undergraduates approved for reduced fees are audited (must be enrolled in 10 units or less to be eligible for reduction)**	October 17	January 23	April 17
ETS foreign language examinations in French, German, Russian, and Spanish	October 18	January 31	April 11
Orientation meetings on format for master's theses and doctoral dissertations (see Theses and Dissertations Adviser, 141 Powell Library)	October 23-25	January 22-24	April 23-25
Last day to declare bachelor's degree candidacy for current quarter (without fee) with Registrar's Student Information, 1111 Murphy Hall	October 24	January 30	April 24
WITH APPROVAL OF ACADEMIC DEAN: **(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**	October 24	January 30	April 24
Last day for continuing students to file applications for undergraduate scholarships for 1987-88	—	February 1	—
Last day to submit final drafts of dissertations to doctoral committees for degrees to be conferred in current quarter	November 3	February 9	May 1
Last day: **(1) For undergraduates to change grading basis (optional P/NP) with $3 petition fee and APPROVAL OF ACADEMIC DEAN** **(2) To file removal of Incomplete petition ($5 fee) with Registrar's Student Information, 1111 Murphy Hall**	November 7	February 13	May 8
Last day to declare bachelor's degree candidacy (with $3 fee) with Registrar's Student Information, 1111 Murphy Hall	November 14	February 20	May 15
Last day to submit final drafts of theses to master's committees for degrees to be conferred in current quarter	November 17	February 23	May 18
Last day to file completed copies of theses for master's degrees and dissertations for doctoral degrees to be conferred in current quarter with Theses and Dissertations Adviser, 141 Powell Library	December 1	March 9	June 1
Last day to withdraw	December 5	March 13	June 5
WITH APPROVAL OF ACADEMIC DEAN: **(1) Last day for graduates to change grading basis (optional S/U) with $3 petition fee** **(2) Last day for graduates to DROP courses with $3 petition fee**	December 5	March 13	June 5
INSTRUCTION ENDS	December 6	March 14	June 6
Final Examinations	December 8-12	March 16-20	June 8-12
QUARTER ENDS	December 12	March 20	June 12
Last day to file applications for graduate merit-based financial support for 1987-88	January 15, 1987	Consult department	Consult department
Unofficial copy of previous quarter's grades available at Registrar's Student Information, 1111 Murphy Hall	January 31	May 1	August 1
Commencement			June 14
Academic and administrative holidays	July 4 September 1 November 27, 28 December 25, 26 January 1, 2	January 19 February 16 March 23	May 25

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

About UCLA

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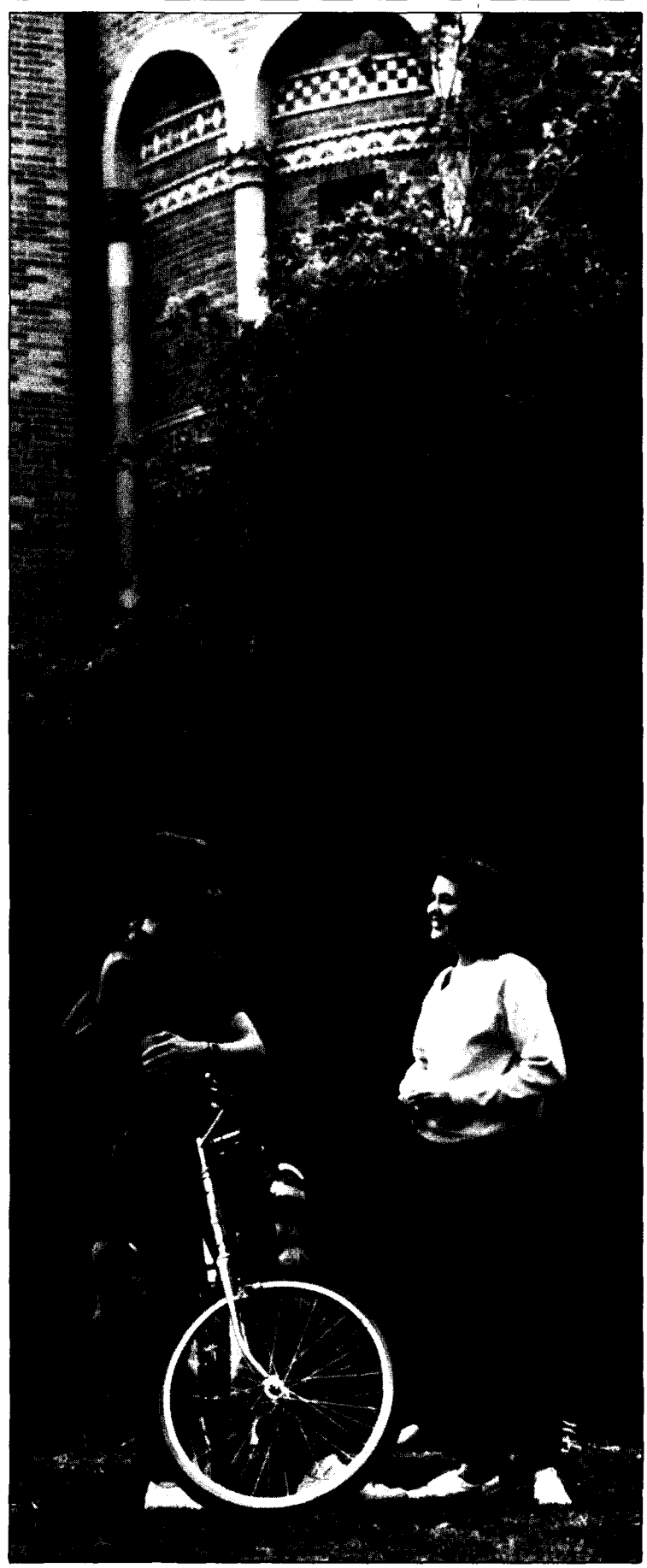


Introducing UCLA

". . . 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

Humble Beginnings

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 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: The University of California at Los Angeles (the "at" became a comma in 1958).

The Move Westward

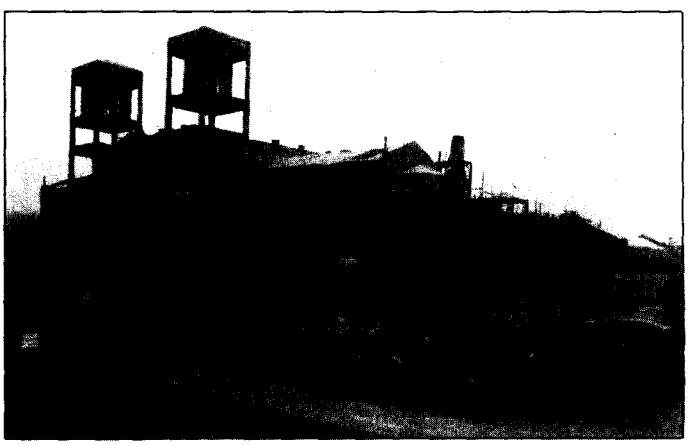
As the student population of the University continued to increase, the need for a new site became obvious and the search was soon underway for a permanent home for UCLA. On September 21, 1927, Director Moore turned the first shovelful of soil that broke ground for the creation of the campus of his dreams.

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

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



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

Royce, Haines, Kinsey, and Moore Halls and Powell Library: the UCLA of 1929.

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.

Nearly 150 buildings on 411 acres house 13 colleges and schools and serve over 34,000 students. UCLA's top administrative officer is Chancellor Charles E. Young who has provided dynamic leadership for the campus since he took office in the fall of 1968.

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

UCLA is a place of broad vistas, spacious quadrangles, and landscaped gardens. The stately Tudor Gothic and Italian Romanesque architecture of the early buildings blends with the contemporary and modern design of the newer structures. Royce Hall, one of the original four buildings, was recently renovated and remains the campus symbol. UCLA is a place of contrasts. 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 Peter V. Ueberroth Building (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** (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 you will be 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 30,500 students is equal to that at UC Berkeley, but the UCLA campus is enriched by an additional 3,800 men and women studying in its health science 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 special academic assistance programs for new students, a staff of helpful advisers and counselors in every college 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. Lecture groups of more than 200 — especially in introductory courses — are not unusual, but in such cases students generally also enroll in discussion sections of about 25 students. 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.

ACADEMICS — UCLA has two colleges and 11 professional schools. The College of Letters and Science and the College of Fine Arts offer programs leading to both undergraduate and graduate degrees, as do the School of Engineering and Applied Science and the School of Nursing. 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, 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 102 different disciplines; graduate students may earn one of 77 master's and 92 doctoral and professional degrees.

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 John Simon Guggenheim fellows and many members of both the National Academy of Sciences and the American Academy of Arts and Sciences. During the past academic year 15 faculty members received Fulbright scholarships to conduct research, lecture, and consult abroad, making UCLA the leading university nationwide for the second consecutive year in the number of scholars presented the prestigious award.

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 more than $170 million a year 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 main criteria for faculty promotion, and distinguished teaching awards are among those most highly prized by UCLA professors.

STUDENT BODY — 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 the majority are from California, students come from all 50 states and more than 100 foreign countries to study at UCLA. International students number more than 2,100, making this one of the most popular American universities for students from abroad. Ethnic minorities comprise about one third of the undergraduates and 25 percent of the graduate student population.

NUMEROUS OTHER FACTORS — With nearly 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.

The University played a significant role in the 1984 Summer Olympics in Los Angeles, with a 4,000-athlete Olympic Village, all gymnastics and tennis events, the drug-testing laboratory, and most theatrical events of the Olympic Arts Festival on its campus.

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.

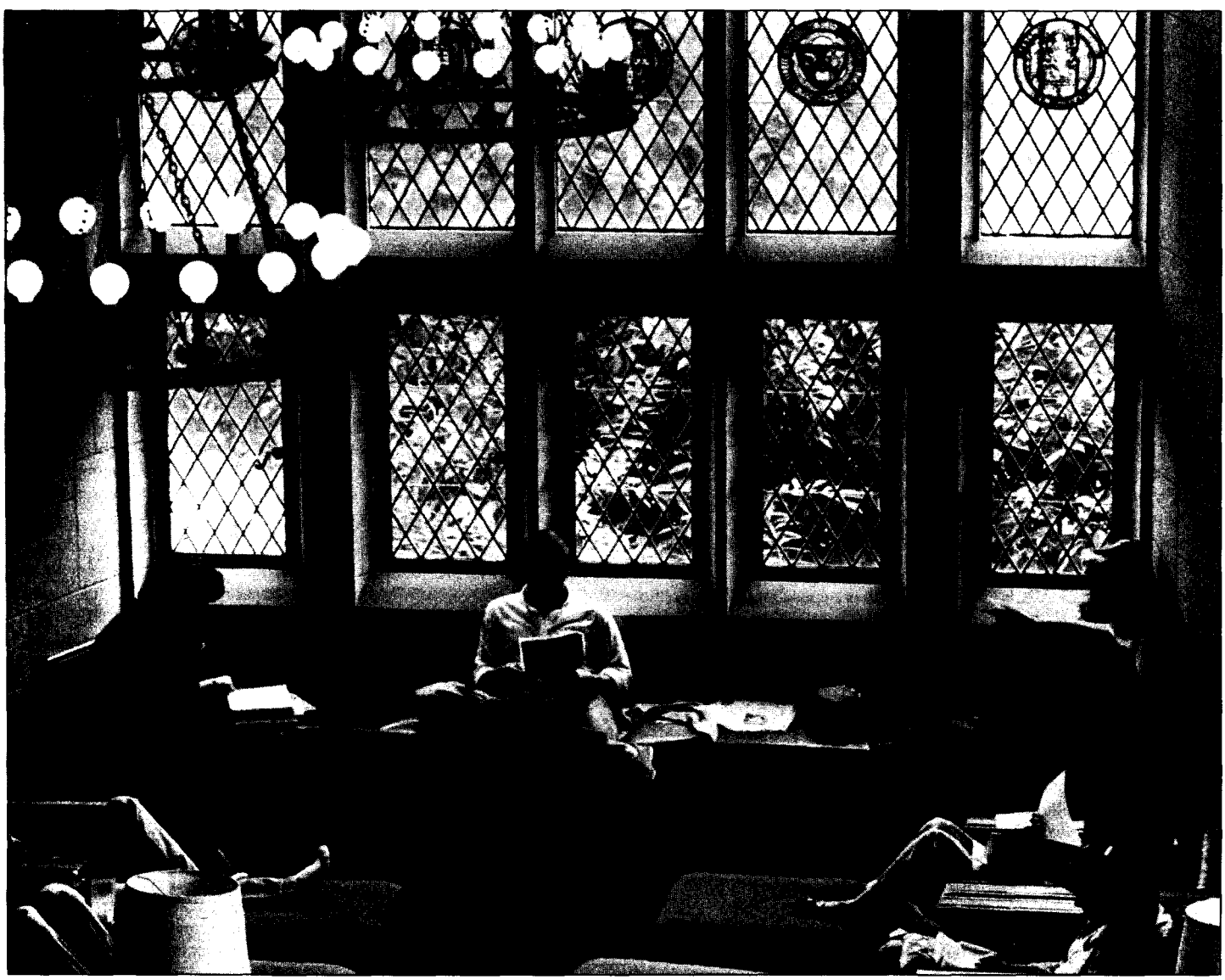
The UC campuses have a combined enrollment of 148,000 students, 90 percent of them California residents. About one fourth study at the graduate level. Some 150 laboratories, extension centers, and research and field stations strengthen teaching and research while providing public service to California 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 and certain admininistrative 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 3,000 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 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, 825-9431) and funded through a contract with the Department of Energy, conducts research in the fields of biomolecular and cellular science, environmental biology, and nuclear medicine. Its major facilities include a cobalt radiation installation, a biomedical cyclotron, an ECAT III scanner, and environmentally controlled growth chambers.

The **BRAIN RESEARCH INSTITUTE,** center of neuroscience research at UCLA, is located in the Center for the Health Sciences (73-364 BRI, 825-5061). It has the largest investigative program of its kind in the country, with more than 140 scientists working on problems ranging from the nerve cell to human behavior. The institute provides an environment for specific multidisciplinary research and training on the structure and function of the brain.

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 73-016 Center for the Health Sciences (206-8045).

The **MENTAL RETARDATION RESEARCH CENTER,** located in 58-258 NPI&H (825-5542), 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.

The **JULES STEIN EYE INSTITUTE** is one of the best equipped centers for research and treatment of eye diseases anywhere in the world. This comprehensive facility, located in the Center for the Health Sciences (825-5051), 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.

In the health sciences, research carried out in ORUs is complemented by research on neurological and neuromuscular diseases in the **Jerry 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 **Center for Ulcer Research and Education** is a federally funded center doing basic and applied research on the origin and treatment of ulcers.

Life Sciences

The **MOLECULAR BIOLOGY INSTITUTE** provides the 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 (825-1018).

The **CENTER FOR THE STUDY OF WOMEN,** located in 236A Kinsey Hall (825-0590), coordinates and disseminates interdisciplinary research on women, focusing on three programmatic areas: women, work, and the economy; women, language, and the arts; and women, science, and health. The center promotes innovative research by sponsoring conferences, publications, a visiting scholars program, the Graduate Gender Studies Union, and ongoing colloquia on Women, Culture, and Theory and Women in Science. In collaboration with other UC campuses, women's studies programs, and community groups, the center seeks to address public policies affecting women's lives.

Physical Sciences and Engineering

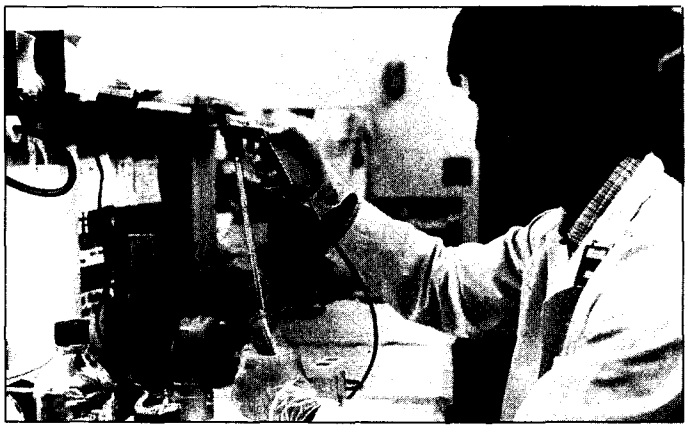
The **CRUMP INSTITUTE FOR MEDICAL ENGINEERING,** located in a modular unit on Circle Drive South at Westwood Plaza (825-4111), applies theory and engineering practice to problems in clinical medicine. Research focuses on noninvasive physiological monitoring of human subjects from infants to the aged, including development of experimental regimens, methods and equipment for data collection, and new mathematical techniques of data analysis, to assess the stability of these complex systems. Additional research areas include biochemical sensors, drug delivery systems, medical electronics, and biomechanics.

The **INSTITUTE OF GEOPHYSICS AND PLANETARY PHYSICS (IGPP)** is a Universitywide ORU; the branch at UCLA is engaged in research into the nature of the Earth, moon, and other planetary bodies, interplanetary space, and stellar interiors and their evolution. Laboratory studies include space physics, plasma astrophysics, fluid dynamics, meteoritics, seismology, climate dynamics, glaciology, petrology, geochronology, archaeology, and origins of life. The UCLA branch office is located in 3839 Slichter Hall (825-1664).

The **WHITE MOUNTAIN RESEARCH STATION** is a Universitywide ORU 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 and physical sciences. The administrative office is located in 6713 Geology (825-2093).

Among other interdisciplinary activities in the physical sciences and engineering at UCLA, a newly formed **Hazardous Waste Control Laboratory** is researching ways to reduce the volume and toxicity of hazardous wastes and dispose of the remainder in a safe manner. On another

frontier, an **Artificial Intelligence Laboratory** designed exclusively for research in this burgeoning field has opened under the wing of the Computer Science Department.



Social Sciences

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** (3111 Campbell Hall, 825-7403) conducts and sponsors research on the Afro-American experience, coordinates the Afro-American Studies curriculum, publishes research results, and sponsors community service programming.

The **American Indian Studies Center** (3220 Campbell Hall, 825-7315) is one of the largest centers of its kind in the country. It 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** (3232 Campbell Hall, 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 **Chicano Studies Research Center** (3121 Campbell Hall, 825-2363) facilitates interdisciplinary academic research related to the Chicano experience. The center has research and academic programs and maintains a publications unit and research library that are considered leading contributors to Chicano studies nationally.

In addition to the ethnic centers, UCLA has four major interdisciplinary **AREA STUDIES CENTERS** which coordinate teaching and research activities concerning major geographic areas. Some of the world's leading specialists on area studies have joined these centers, which rank among the best in the nation.

The **African Studies Center** (10244 Bunche Hall, 825-3686) is the major center for African studies in the Western U.S. It furthers teaching and research on Africa involving economics, linguistics, humanities, social sciences, and theater, film, and television. The center also works with the professional schools of Architecture and Urban Planning, Education, Management, and Public Health.

The **Latin American Center** (10343 Bunche Hall, 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 **Gustave E. von Grunebaum Center for Near Eastern Studies** (10286 Bunche Hall, 825-1181) promotes research and training in basic problems related to the Near and Middle East countries in modern and medieval times. It also sponsors lectures, seminars, and conferences and promotes an extensive publications program.

The **Center for Russian and East European Studies** (334 Kinsey Hall, 825-4060) promotes and coordinates research on Russia and the countries of Eastern Europe through conferences, lectures, seminars, and academic exchange programs with Russian and Eastern European universities.

The **INSTITUTE OF INDUSTRIAL RELATIONS,** located in 1101G Campbell Hall (825-1964), has an interdisciplinary research and publishing program directed toward the study of labor law, labor-management relations, 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 Survey Research Center and the Social Science Data Archive. Training in survey research methodology is available to students through participation in the annual Los Angeles area survey. The institute is located in 11252 Bunche Hall (825-0711).

Other interdisciplinary activities in the social sciences involve the study of arms control, nuclear proliferation, and international security in the **Center for International and Strategic Affairs.** A nationally respected **Business Forecasting Project** in UCLA's Graduate School of Management forecasts short-run and long-run economic activity both regionally and nationally. The **Center for the Study of Evaluation** in the Graduate School of Education is at the forefront of efforts to improve the quality of schooling in America through systematic evaluation practices. And the recently formed **Center for Pacific Rim Studies** promotes research, course offerings, seminars, and faculty and student exchange programs on the people and nations bordering the Pacific Ocean.

Arts and Humanities

The **INSTITUTE OF ARCHAEOLOGY,** located in 288 Kinsey Hall (206-8934), develops and coordinates the archaeological research and activities of more than 10 academic departments with field interests in the Americas, Asia, Africa, and Europe. Its major goal is to contribute to a reconstruction of the human past based on archaeological evidence. Activities include management of archives and laboratories such as the Rock Art Archive, public lectures, seminars, a publications program, field surveys, and excavations. The institute's Archaeological Survey coordinates research and data collection on Southern California archaeological sites.

The **CENTER FOR THE STUDY OF COMPARATIVE FOLKLORE AND MYTHOLOGY,** located in 1037 GSM (825-4242), supports and coordinates the comparative study of 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 Western civilization between A.D. 300 and 1650. Major programs include training research assistants, appointing postdoctoral associates and visiting professors, organizing conferences and colloquia, and sponsoring publication of research. The center is located in 11365 Bunche Hall (825-1970, 825-1880).

The **CENTER FOR SEVENTEENTH- AND EIGHTEENTH-CENTURY STUDIES,** located in 1157 Bunche Hall (206-8552), coordinates the research activities of more than 60 faculty members studying the development of civilization in the early modern period. It is an extension of and includes the programs of UCLA's William Andrews Clark Memorial Library. Center programs involve appointing predoctoral and postdoctoral fellows and visiting professors, organizing conferences and colloquia, and sponsoring publication of research.

In other research activities, a recently established **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 Lab,** one of the best-known labs of its kind in the nation, researchers are finding new ways to analyze speech functions and make voiceprints for use in law enforcement. The University is establishing the **Armand Hammer Center for Leonardo Studies and Research** where scholars will have access to major resources for the study of the works of Leonardo da Vinci. And the College of Fine Arts has established an **Advanced Design Research Group** to develop innovative ways to manage and store information.

Resources for Research and Study

The 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, rated second in the nation last year by the Association of Research Libraries. The 19-branch system consists of the University Research Library, the College Library, the Clark Library, and 16 specialized subject libraries. Collectively they contain nearly six million volumes and extensive holdings of government publications, pamphlets, manuscripts, maps, microtext editions, music scores, recordings, photographs, and slides. They regularly receive over 80,000 serial publications.

The main card catalog in the University Research Library lists older holdings in all campus libraries. ORION, the library's on-line information system, provides location and holdings information for materials cataloged since 1977, plus current information for materials on order or in processing. *ORION on Fiche,* available in all campus libraries, is a quarterly microfiche list of information contained in the ORION data base.

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 branches.

The University Research Library

The University Research Library on north campus (825-1201) is a modern six-story building designed primarily as a graduate research library serving the social sciences and humanities. The building houses over two 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 1,086,000 microcopies of newspapers, books, and periodicals, has a variety of reading and copying equipment. During academic sessions library hours on weekdays are 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 Anais 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 Michael 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 houses 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 United States government, the State of California, California counties and cities, selected United States 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.

The College Library

The College Library, located in the Powell Library Building (825-1938), is designed to meet the basic study needs of most undergraduates. Its 245,000 books and periodicals are maintained in open stacks, with course reserve materials, lecture notes, past examinations, and APS (Academic Publishing Service) readings available for loan. During academic sessions library hours on weekdays are 8 a.m. to 10 p.m. (5 p.m. Friday), Saturday 10 a.m. to 6 p.m., Sunday noon to 9 p.m. The **Photographic Services** office, housed in the Powell Library Building, provides a complete photographic reproduction service for duplicating books, periodicals, manuscripts, and maps. The Powell Library Building, with study space for 1,100 students, is open daily until midnight.

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 (825-8301) provides current hours of service for each library.

The **Architecture and Urban Planning Library** includes materials treating architecture, building technology, city and regional planning, and selected environmental topics. The **Art Library** supports the department's art, design, and art history programs. For those interested in the Italian Renaissance, one of the greatest research centers in the world for the study of Leonardo da Vinci is the **Elmer Belt Library of Vinciana,** part of the Art Library.

The **Biomedical Library,** in the Center for the Health Sciences, is one of the finest libraries of its kind in the country. Its 440,000 volumes and over 7,000 serial subscriptions serve all the UCLA health and life science schools and the UCLA Medical Center.

The **Chemistry Library** includes material on chemistry, biochemistry, and molecular biology, while education, psychology, teaching English as a second language, and kinesiology are the principal subjects covered by the **Education and Psychology Library.** Materials for engineering, astronomy, computer science, meteorology, and mathematics are kept in the **Engineering and Mathematical Sciences Library.** The **English Reading Room** mainly duplicates the Research Library's holdings in English and American literature, and major subjects covered by the **Geology-Geophysics Library** include geoscience, invertebrate paleontology, planetary and space science, and hydrology.

The **UCLA Law Library** has a substantial collection of over 300,000 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 Graduate School of Management and the various subjects related to business and management.

The **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 Western U.S. The **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. Materials in Chinese, Japanese, and Korean are available in the **Oriental Library,** and the **Physics Library** covers all aspects of that science, including acoustics and spectroscopy.

The **Theater Arts Library** is the home of many prestigious collections which have been donated to UCLA, such as those of Charlton Heston, Rosalind Russell, director William Wyler, and animator Walter Lantz. The collections include original scripts, contracts, correspondence, shooting diaries, and much more. And the **University Elementary School Library** contains contemporary materials for children from kindergarten through junior high school age.

The Clark Library

Supplementing the University Library is the **William Andrews Clark Memorial Library,** with its collection of some 80,000 volumes and 14,900 manuscripts related to English culture of the seventeenth and eighteenth centuries. Its John Dryden collection is among the most complete in the world. The library, located approximately 10 miles from the UCLA campus, contains noncirculating materials. Leaflets describing the Clark Library and information about University transportation to it are available at the Reference Desk in the Research Library.

Special Archive Collections

Three unique collections, the UCLA Film, Television, and Radio Archives, are a living resource equally respected by industry and scholars. Students use them to learn the finer points of production techniques and to study the careers of leading actors and directors, many of whom also use the archives. All three archive collections are located in 1438 Melnitz Hall and are open Monday through Friday from 9 a.m. to 5 p.m. For information and/or viewing appointments, call 206-8013.

The **FILM ARCHIVES,** with more than 30,000 titles, is the largest film center west of 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 the nitrate print collection of Twentieth Century-Fox, the pre-1948 studio print holdings of Paramount Pictures, more than 600 Warner Brothers prints, and selected nitrate prints from the Columbia Studios collection.

The **TELEVISION ARCHIVES,** under joint auspices of the Academy of Television Arts and Sciences and UCLA, constitutes the nation's largest university collection of its kind. Its 25,000 titles include kinescope, telefilm, and videotapes spanning television history, with particular emphasis on drama and comedy from 1947 to the present. A special Collection of Television Technology and Design includes over 300 historical television cameras and receivers dating from the 1930s.

The **RADIO ARCHIVES** contains more than 40,000 broadcasts from the early 1930s to the present. Significant collections include 700 Hallmark Company broadcasts and personal collections featuring Jack Benny, Bing Crosby, and Dick Powell. The Collections of Clete Roberts and Edward R. Murrow highlight a range of news and documentary material.

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. Major art exhibitions, both traveling and assembled at UCLA, are displayed in the **WIGHT ART GALLERY,** located in the Dickson Art Center Gallery Building. More than 200,000 visitors each year come to see a series of 12 exhibitions of painting, sculpture, photography, prints and drawings, folk art, architecture, and design. For a

schedule of exhibitions, call 825-9345. The gallery is open Tuesday from 11 a.m. to 8 p.m., Wednesday through Friday from 11 a.m. to 5 p.m., and weekends from 1 to 5 p.m. Daily tours are given at 1 p.m. Group tours are by appointment; call 825-3264. The administrative office is located in 1100 Gallery Building (825-1461).

On the second floor of the Wight Gallery Building is the **GRUNWALD CENTER FOR THE GRAPHIC ARTS,** which houses a distinguished collection of some 30,000 prints, drawings, and photographs. Maintained as a study and research center for the benefit of students and the community, the center's permanent holdings include significant examples from the fifteenth century to the present. It is particularly noted for its collection of German expressionist prints formed by Fred Grunwald and comprehensive holdings of Matisse, Picasso, and Goya. The center, located in 2122 Gallery Building (825-3783), is open weekdays by appointment from 9 a.m. to 5 p.m.

The **FRANKLIN D. MURPHY SCULPTURE GARDEN,** located north of Bunche Hall, contains a collection of nearly 70 major works by Rodin, Matisse, Calder, Lachaise, Lipchitz, Moore, Miro, Hepworth, and many other late nineteenth- and twentieth-century masters. All works in the growing collection, situated on a picturesque five-acre expanse, are private gifts to the University.

The **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, located in 55A Haines Hall (825-4361), offers assistance with instruction and research and sponsors major exhibitions, lecture programs, and symposia. Gallery hours are noon to 5 p.m. Wednesday through Sunday.

Other Resources

The **OFFICE OF ACADEMIC COMPUTING (OAC),** with administrative offices in 4302 Math Sciences, is responsible for all general-purpose academic computing activities on the UCLA campus. OAC provides a broad range of services, including operation of IBM 3090 and 4341

computers for general campus use; facilities management and operation of the IBM 4381 for the Social Sciences Computing Program and of eight VAX 750 systems for the Program on Computing in the College of Letters and Science; assistance to individuals and departments in the selection and use of microcomputer hardware and software through the Microcomputer Support Office; maintenance of numerous public computing facilities and a large library of application software; instruction in the use of computer hardware and software through free noncredit classes; and professional consulting services.

UCLA's principal computing system is the IBM 3090, available to all colleges, schools, and departments within UCLA. Any registered student can also access the IBM 4341 computer for independent research or to learn computing skills. The campus network of mainframe computers allows students and faculty access to such modern computing services as ORION, the UCLA library information system; BITNET, a rapidly growing computer network connecting universities around the world; and a campuswide electronic mail system. To arrange for use of the IBM 3090 or 4341 computer, apply in the OAC User Relations Office (4302 Math Sciences, 825-7548) weekdays from 8 a.m. to 5 p.m.

The **DIVISION OF LABORATORY ANIMAL MEDICINE,** located in 1V-211 CHS (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. Several reserves are close enough to campus for daily access. For more information, contact Arthur Gibson, 124 Botany (825-8062).

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 James Northern, 1303 Life Sciences (825-1282).

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 **MILDRED E. 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 250,000 dried plant specimens. The administrative office is located in 124 Botany (825-3620).

The **HANNAH 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 conferences and receptions, and by others seeking a serene setting for meditation and solitude. It is open to individual visitors and groups by reservation only. Hours are Tuesday 10 a.m. to 1 p.m. and Wednesday noon to 3 p.m. Friday is reserved for group visits. Call the Visitors Center at 206-8147.

Supplementary Educational Programs

In addition to the regular academic programs which are described in Chapters 5 through 17 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 50 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 quarter, 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 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 into your grade-point average. Check with your college or school counselor about the possibility of applying these courses toward minimum unit requirements and for any limitations the 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 quarters, you may attend another college institution for credit while you are enrolled in Summer Sessions. Applications and more information on Summer Sessions are available in 1254 Murphy Hall (100 Dodd Hall after October 1, 1986), 825-8355.

University Extension

Serving approximately 100,000 adult students 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.

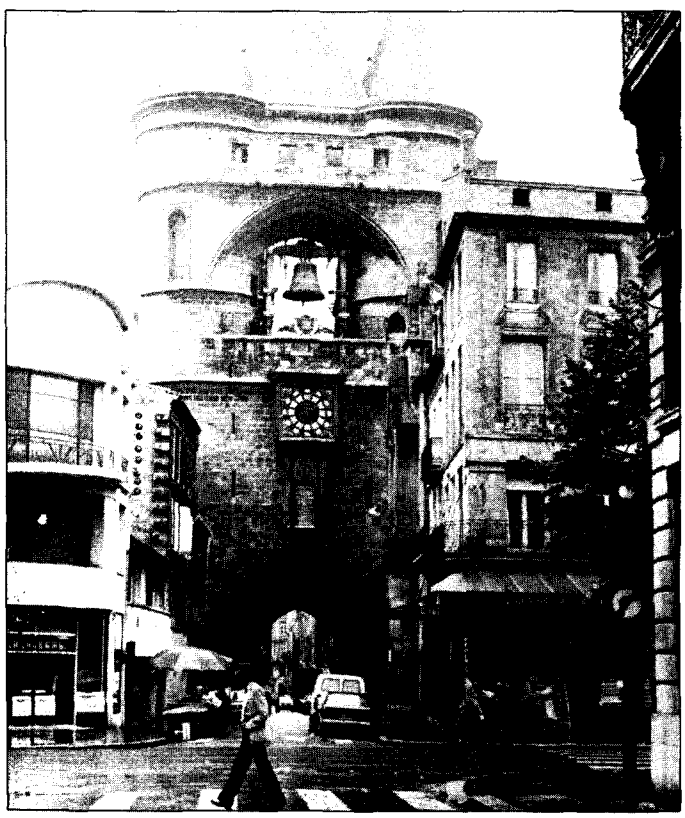
Many of UCLA's 4,600 Extension classes are innovative and experimental in content, format, and teaching methods. Credit and noncredit courses are offered in nearly every academic discipline and in many interdisciplinary areas. Many noncredit Extension courses offer the opportunity to earn Continuing 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, 10995 Le Conte Avenue (206-6201). To obtain the current *UCLA Extension Catalog,* call 825-8895. The Registration Office is open 8 a.m. to 6 p.m. weekdays and until 5 p.m. on Friday (825-9971).

Education Abroad Program (EAP)

Each year, more than 650 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 on more than 40 different campuses in 25 countries: Australia, Austria, Brazil, China, Egypt, England, France, Germany, Hong Kong, India, Ireland, Israel, Italy, Japan, Kenya, Mexico, Norway, Peru, Scotland, Sierra Leone, Spain, Sweden, Togo, U.S.S.R., 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. A special orientation program and, when necessary, intensive language training are included. During the year UC faculty members at the host campus assist with scholastic or personal problems.



EAP students en route to classes at the Université de Bordeaux.

EAP is open to all undergraduate students who have completed a minimum of 90 quarter units (junior standing) prior to departure, at least a B average (3.0 GPA) overall at the time of application, and the support of the UCLA EAP Selection Committee. Some overseas study centers 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 $5,200 to $8,000, but University financial aid is available. Applications must be filed several months in advance. For more information, contact the EAP Office in 2221B Bunche Hall (825-4889, 825-4995).

Education at Home Program

Students interested in early American history and culture have the opportunity to spend Winter Quarter 1987 "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, one in Philadelphia, and a concluding week in Washington, D.C. 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 (714) 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 these colloquia, call the secretary to the provost of the College of Letters and Science at 825-4621.

African Studies — The African Studies Center annually sponsors at least one interdisciplinary colloquium on Africa which focuses on topics in the social sciences or humanities. It is the policy of the center to organize its colloquia so that they can be taken for course credit at the graduate or undergraduate level or attended as open lectures. For further information, contact the center at 825-2944.

The **Jacob Marschak Interdisciplinary Colloquium on Mathematics in the Behavioral Sciences** provides a forum for interaction among faculty and students interested in the application 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. An Honors Collegium course (HC 190) is based on the Marschak Colloquium.

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 GSM 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.* For further information, contact Lil Prupes at 825-1581.

Student Life

Living Accommodations

Where you live while attending UCLA can play an important role in your total college experience. Nearly half of UCLA freshmen live on campus, but the majority of undergraduates commute. About a quarter of the total student population lives at home.

There are many different housing options available, though the housing shortage on and near the UCLA campus means your first choice may not be available. You should therefore consider all housing options, decide early which ones you plan to pursue, and apply 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,** 100 Sproul Hall, (213) 825-4491, provides information and current listings on University-owned apartments, cooperatives, fraternities, sororities, private apartments, roommates, rooms in private homes, room and board in exchange for work, and temporary housing. It also has bus schedules, area maps, neighborhood profiles, and counselors to help resolve landlord-tenant conflicts. 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: Information and Application, a booklet which covers the housing situation in much greater detail, is mailed to all students when they are accepted for admission (you may also request it prior to admission).

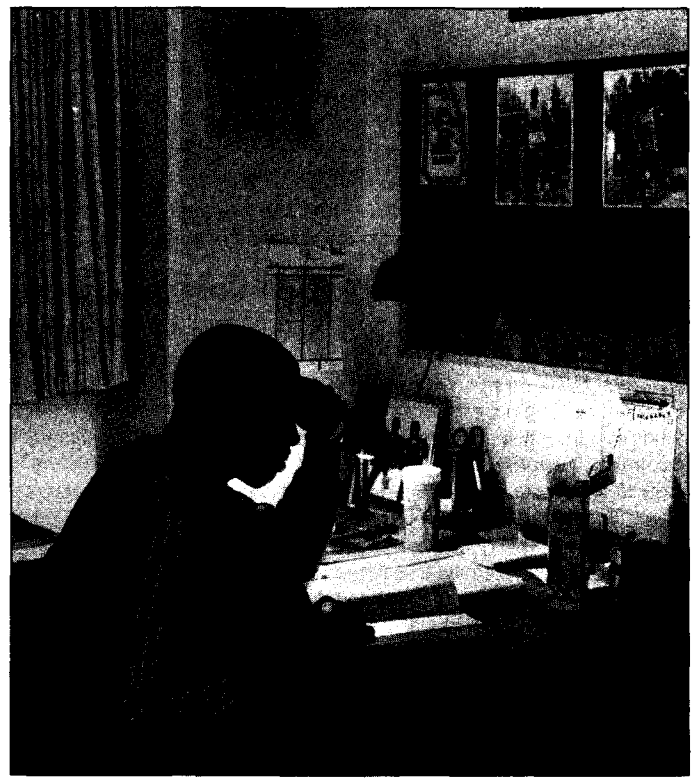
On-Campus Housing

Living on campus can add an extra dimension of enjoyment and convenience to your UCLA experience; the demand, however, currently exceeds the space available. Four residence halls (Dykstra, Hedrick, Rieber, and Sproul Halls) and two residential suite complexes (Northern and Southern) accommodate nearly 4,000 undergraduates. There is one residence hall, Mira Hershey Hall, which houses some 335 graduate students. All on-campus housing is coed and within walking distance to classrooms.

Residence hall rooms are shared by two students. Residential suites, shared by four students, consist of two bedrooms, a full bathroom, and a common living room. The residence hall cafeterias, which also accommodate students in the residential suites, serve 19 meals per week.

Applications for on-campus housing are contained in the *UCLA Housing Options: Information and Application* booklet, available at the UCLA On-Campus Housing Assignment Office, 270 De Neve Drive, (213) 825-4271. Applications should be submitted by:

March 24 (May 19 for graduate students) for Fall Quarter 1986
October 31 for Winter Quarter 1987
January 31 for Spring Quarter 1987
March 23, 1987 (May 18 for graduate students) for Fall Quarter 1987



On the day following each of these dates, a lottery will be held to determine the order in which students will be offered housing. The full cost for the 1986-87 academic year (Fall, Winter, and Spring Quarters, excluding vacation periods) ranges from $2,885 to $2,950 for residence halls and from $3,500 to $3,600 for suites, plus a $19.50 membership fee in the On-Campus Housing Student Association.

The **Office of Residential Life,** in the Residential Life Building next to Sproul Hall (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.

Family Student Housing

UCLA maintains nearly 650 off-campus apartments for married and single-parent students at Sawtelle and Sepulveda Boulevards and 60 units on Barrington Avenue, about five miles from campus. Unfurnished one-, two-, and three-bedroom units are available. Rentals for 1986-87, excluding utilities, are expected to range from $314 to $437 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 must accompany your application. Call the Family Student Housing Office at (213) 391-0686 for up-to-date information.

University-Owned Apartments

Nearly 190 shared apartments for single students in three off-campus facilities are maintained by the University. Two of the locations are within walking distance of campus and the third, about five miles south, has free shuttle bus service on weekdays during regular academic sessions. Rental rates vary depending on the location and size of the apartment. There is no waiting list; apartments are rented on a first come, first served basis. Listings are posted in the UCLA Community Housing Office.

Cooperatives

Cooperatives 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 five cooperatives within walking distance of campus. Room and board rates for 1985-86 varied between $510 and $850 per quarter. Cooperatives normally have long waiting lists, so apply early. For applications and specific information, write directly to each cooperative. Addresses are available in the UCLA Community Housing Office.

Fraternities and Sororities

Some 2,000 Bruins live in the fraternity and sorority houses which border the campus on the west and east sides respectively. To live in a "Greek" house you must participate in rush and join that particular organization, though membership does not guarantee housing accommodations. For more information, contact the Office of Greek Affairs (118 Men's Gym, 825-6322) or the Dean of Students Office (2224 Murphy Hall, 825-3871).

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 share an apartment. Apartments within three miles of UCLA (Westwood, West Los Angeles, parts of Brentwood and Santa Monica) average $500 per month for efficiency units and $710 for one-bedroom units. Apartments more than four miles away (Palms, Mar Vista, Culver City) usually cost $50 to $100 less. Because they change daily, listings cannot be mailed or given over the phone; they are posted in the UCLA Community Housing Office. A roommate share board is also available.

Temporary 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 temporary housing is available for no more than one to three months, though some may be for longer periods. Housesitting listings are few; 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. In addition, several fraternities have rooms to rent for the summer at low rates. Check with the Office of Greek Affairs, 118 Men's Gym (825-6322).

Transportation

There are several different means of transportation to and from campus other than using your car. Bus lines connect UCLA to Santa Monica, Culver City, Beverly Hills, and most of Los Angeles. Bicycles, mopeds, and motorcycles are all popular ways to get around; several bike paths in the local area make your ride easier and safer, and there are parking areas on campus specially marked and equipped for these vehicles. Many students also make their own carpooling and vanpooling arrangements to save money and make the daily commute more pleasant.

All of these alternatives are described in *How to Get to UCLA Without Using Your Car,* a booklet which also contains a ridesharing application, bus routes, area maps, and a host of helpful hints. It is available at the Campus Parking Service (Structure 8, Level 2, Westwood Plaza at Strathmore Place), at the UCLA Community Housing Office, and through the UCLA Ridesharing Office (825-7639).

Parking Space and Permits

A limited number of parking permits for campus lots are sold to students each quarter, but parking spaces on campus are at a premium and not all students who request a permit will receive one. Obtain a Student Parking Request at the Campus Parking Service (Structure 8, Level 2) and return it by the deadline. Check dates on the Calendar at the beginning of this catalog or in the quarterly *Schedule of Classes.*

Parking assignments are based on the distance you live from campus, work commitments, and other information you provide. Students with physical disabilities that preclude walking long distances may obtain recommendations for parking permits through Student Health Service. If you do not receive a permit, you must reapply every quarter to be reconsidered. For more information, call the Campus Parking Service at 825-9871.

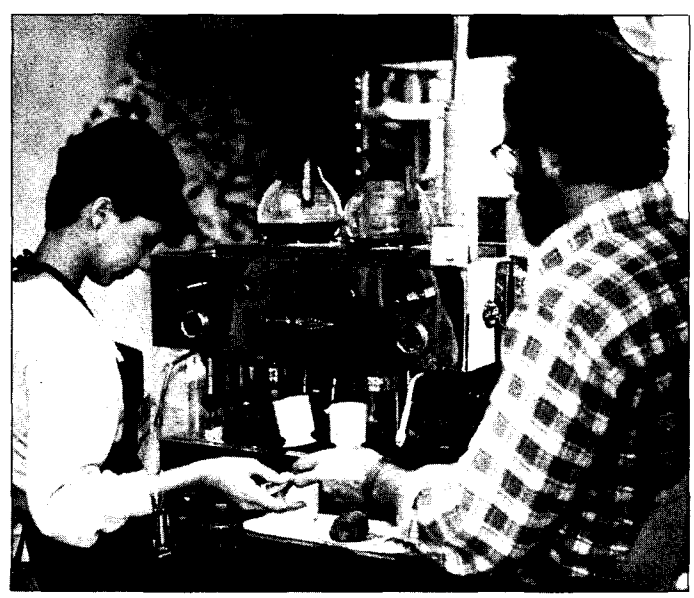
ASUCLA

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.

THE COOPERAGE — On the A Level of Ackerman Union, the Cooperage offers Mexican food, pizza, grill items, croissants, special salads, and soft ice cream. A stage and sound system for live entertainment and a large-screen TV for major events are available. The Cooperage is open weekdays from 8 a.m. to 12:30 a.m. (1:30 a.m. Friday), Saturday 11 a.m. to 1:30 a.m., Sunday noon to 11 p.m.



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

THE BOMBSHELTER DELI AND BURGER BAR — This unique food service in the center of the Court of Sciences offers an assortment of traditional deli sandwiches, hamburgers, and salads at reasonable prices. "Gypsy breakfasts" are served in the morning. It is open weekdays from 7:30 a.m. to 5 p.m., Saturday 10 a.m. to 3 p.m.

THE TREEHOUSE — Located on the first floor of Ackerman Union, the Treehouse is open for breakfast, lunch, and dinner and features ranch-fried chicken, a chili bar, Italian-style dishes, and a variety of traditional American favorites. Grilled-to-order sandwiches are offered at the **Hole-in-the-Wall.** The Treehouse is open weekdays from 7 a.m. to 7:30 p.m. (3 p.m. Friday).

Adjacent to the Treehouse is the **Sandwich Room,** where you can find a variety of low-cost, made-to-order sandwiches, including Italian-style hot or cold submarine sandwiches. Hours are 8 a.m. to 4 p.m. weekdays (3 p.m. Friday) and Saturday 10 a.m. to 2:30 p.m.

CAMPUS CORNER — The oldest of the ASUCLA food facilities, the Campus Corner is located just across Bruin Walk from Kerckhoff Hall. Soft frozen yogurt, hamburgers and French fries, and a wide range of pita bread pocket sandwiches are available. It is open weekdays from 7:30 a.m. to 5 p.m. (4 p.m. Friday).

THE KERCKHOFF COFFEE HOUSE, on the second floor of Kerckhoff Hall, offers Baskin-Robbins ice cream specialties and a variety of teas, coffees, and potages (hearty soups). Live entertainment is featured almost every night. The Coffee House is open 7 a.m. to midnight weekdays and 10 a.m. to midnight weekends.

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

JAMES E. LU VALLE COMMONS, located adjacent to the Graduate School of Management, features gourmet pizza, grilled and deli specialties, and Jimmy's Coffee House (coffee, teas, and cheesecake). Hours are 7:30 a.m. to 10 p.m. weekdays (8 p.m. Friday), Saturday 10 a.m. to 5 p.m., Sunday 11 a.m. to 8 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, 825-7711) offers textbooks, general books, school and art supplies, computers and electronic items, UCLA insignia merchandise (Bearwear), men's and women's sportswear, groceries, health/beauty aids, and greeting cards. The Health Sciences Store (13-126 CHS, 825-7721) specializes in books and supplies for dental and medical students, while the Lu Valle Commons Students' Store (just south of GSM, 825-7238) specializes in law and management books and supplies. The North Campus Shop (in the North Campus Student Center, 206-0751) is a small convenience store offering school supplies and snacks. Main store hours during school sessions are 7:45 a.m. to 7:30 p.m. weekdays (6 p.m. Friday), Saturday 10 a.m. to 5 p.m., Sunday noon to 5 p.m.

Lecture Notes

The Lecture Notes Office (A206 Ackerman Union, 206-0882) publishes concise weekly summaries of about 130 of UCLA's large lecture classes. Hours during school sessions are 7:45 a.m. to 6:30 p.m. weekdays (6 p.m. Friday), Saturday 10 a.m. to 5 p.m., Sunday noon to 5 p.m.

Job Opportunities on Campus

ASUCLA reserves over 1,800 part-time jobs in food service, the students' stores, Graphic Services, and other departments for UCLA students. Listings are posted outside the Personnel Office, 205 Kerckhoff Hall (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 (825-7947). Other on-campus jobs may be available through the Placement and Career Planning Center (see "Student Services" later in this chapter).

Check Cashing and Money Orders

Cash is available via Home Federal automatic tellers at the North Campus Student Center and on the A Level of Ackerman Union.

Students with current UCLA identification may cash a personal check or traveler's check for up to $50 a day, with a service charge for each check, at the ASUCLA Service Center, 140 Kerckhoff Hall (825-2423). Check cashing hours are 9 a.m. to 4 p.m. weekdays.

Students, staff, and faculty may purchase money orders for up to $300 (cash only) at the same location. There is a service charge of 85¢ for each money order. Students, staff, and faculty may also rent post office boxes there at $12 per quarter for a small box and $15 for a large one. Hours for both services are 9 a.m. to 4 p.m. weekdays.

Graphic Services

ASUCLA Graphic Services, 150 Kerckhoff Hall (206-0894), is the campus center for photographic, printing, copying, typographic, and other graphic services. Portraits, photography, yearbook sittings, passport photographs, film, photo and darkroom supplies, and discount photofinishing are also provided. Hours are 8 a.m. to 6 p.m. weekdays and 10 a.m. to 3 p.m. Saturday. A satellite Graphic Services Center is located in Lu Valle Commons (825-7568).

Meeting Rooms

A variety of meeting rooms are available for use by the entire campus community. To reserve space in Ackerman Union or Kerckhoff Hall, contact the Student Union Operations Office on the A Level of Ackerman Union (825-2311). Contact the Food Service Office at the North Campus Student Center (206-0720) and the Main Office at Lu Valle Commons (825-7238) to reserve space at those locations.

Travel Service

The ASUCLA Travel Service, located on the A Level of Ackerman Union (825-9131), offers a wide range of domestic and international charter flights, land arrangements and charter packages, student tours, scheduled air and rail tickets, and other travel-related services. The Travel Service is open 8:30 a.m. to 6 p.m. weekdays and 11 a.m. to 3 p.m. Saturday.

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 publications. Governed by a 10-member Board of Control, ASUCLA operates and manages Ackerman Union, Kerckhoff Hall, the North Campus Student Center, and the James E. 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), located on the third floor of Kerckhoff Hall (825-4504),is governed by the Undergraduate Students Association Council. USAC administers the association's $500,000 annual operating budget through a network of student commissions (Academic Affairs, Campus Events, Community Service, Cultural Affairs, Facilities, Financial Supports, and Student Welfare) presided over by the student body president. The undergraduate student body elects officers annually.

A wide variety of **student government programs** benefit both campus and community. The Community Service Commission (825-2333) serves Los Angeles through such programs as Amigos del Barrio, offering academic and emotional support for Latino students; the Community Theater Workshop for children of low-income families; the UCLA Prison Coalition, providing activities for inmates of juvenile correctional institutions; and the UCLA Special Olympics, to name just a few. More than 1,250 students volunteer annually for community service participation.

Student government also supports the various special interest groups on campus, including the American Indian Students Association, Asian Coalition, Black Students Alliance, Gay and Lesbian Association, MEChA, and the UCLA Jewish Student Union.

The Campus Events Commission (825-1957) is responsible for such events as Mardi Gras and the Speakers Program (see below), as well as movie and concert programs providing campus entertainment at reduced prices.

Graduate Student Government — 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 "Administration" in Chapter 3.

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 350 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.

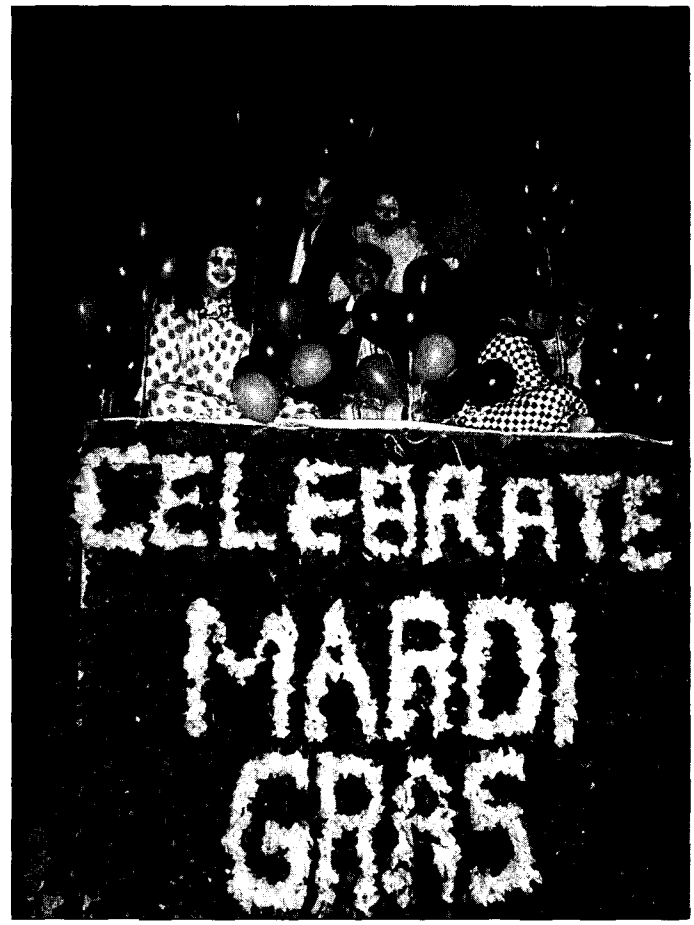
Clubs focusing on sports and recreation are listed in the University Recreation Association Office, located in the John Wooden Center (825-3701). For a full listing of registered student organizations, contact the **Center for Student Programming,** 161 Kerckhoff Hall (825-7041). This office can help 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, and interprets and enforces University rules and regulations.

Groups registered through the Center for Student Programming are eligible to use the services of the **Campus Activities Service Office (CASO),** 12 Royce Hall (825-8981). CASO offers technical advice in the public events area and operates most campus public assembly facilities, classrooms, and auditoriums. Official and general purpose bulletin boards on campus, general assignment lockers, and the sale of UCLA padlocks are administered by CASO.

Fraternities and Sororities

Serving as small, cohesive communities within the larger UCLA community, fraternities and sororities offer unique experiences and opportunities for personal growth. Some of the more than 5,000 Greek student members are leaders in scholarship, community service, student government, athletics, and other facets of UCLA organizational activity.

You can find out more about UCLA's fraternities and sororities by contacting the Office of Greek Affairs (118 Men's Gym, 825-6322) or the Dean of Students Office (2224 Murphy Hall, 825-3871).



Mardi Gras

UCLA's annual Mardi Gras has become 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 65 booths featuring games, food, and live entertainment. There are celebrity judges, carnival rides, clowns, balloons, fireworks, and much more.

The three-day event generates well over $100,000 annually for UCLA's official charity, UniCamp, a summer camp for underprivileged children in Los Angeles. For more information, contact the Mardi Gras Committee in 129 Kerckhoff Hall (825-8001) or the Campus Events Commission in 300A Kerckhoff Hall (825-1957).

UCLA Campus Events Speakers Program

Headed by the Campus Events Commission, the Speakers Program brings many of the foremost literary and political leaders and entertainers to the campus. Past speakers have included Jack Lemmon, Itzhak Perlman, Jane Fonda, David Letterman, Joan Rivers, Bob Hope, Gilda

Radner, Sean Penn, and Bette Davis from the entertainment world; Jimmy Carter, Jerry Brown, Gerald Ford, Justice William O. Douglas, and Senator Gary Hart representing government and politics; and authors Gore Vidal, John Irving, William F. Buckley, Jr., Gloria Steinem, and Hunter S. Thompson.

Publications and Broadcast Media

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

The ***Daily Bruin,*** with a circulation of 20,000, is the fourth largest daily newspaper in Los Angeles. As the principal outlet for campus news, the *Bruin* is published each weekday of the regular academic year (twice weekly during the summer) and is distributed free from kiosks around campus. Students work as reporters, editors, proofreaders, photographers, and advertising sales representatives; new staff members are always welcome. *Bruin* offices are located in 112 Kerckhoff Hall (825-9898).

Six student special interest papers are published twice each quarter to serve special segments of the campus community: ***Ha'Am*** for Jewish students, ***La Gente*** for Chicanos and Latinos, ***Nommo*** for black audiences, ***Pacific Ties*** for Asian readers, ***TenPercent*** for gay and lesbian groups, and ***Together*** for women. Each includes news and features on political and cultural affairs — both on and off campus — of interest to its audience. Prospective staffers are welcome. The offices of the special interest periodicals are located in 112 Kerckhoff Hall.

The UCLA yearbook, ***Bruin Life,*** is one of the largest student publication efforts on campus. Available each fall, it contains photographs and information on graduating seniors, athletic teams, fraternities and sororities, and campus activities. If you would like to participate on the yearbook staff, contact the office in 112F Kerckhoff Hall (825-2640).

Like many other large universities, UCLA has its own radio station. **KLA Radio** provides music, news, and sports 24 hours a day during the academic year (12 hours daily during Summer Sessions). The carrier current signal is sent to the residence halls and parts of Ackerman Union and Kerckhoff Hall on 53 AM and to many parts of the Los Angeles area on 99 Cable FM. The studios are located at the rear of the Grand Ballroom in 2400A Ackerman Union (825-9104; request line: 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, Dance, and Theater, Film, and Television Departments of the College of Fine Arts provides opportunities for student involvement and personal growth.

The **Music Department** offers more than 20 performance organizations. Instrumentalists are invited to play with one of seven different bands and orchestras. An extensive ethnomusicology program allows you to perform with various non-Western and ethnic groups. Campus choral organizations include an A Cappella Choir, the Madrigal Singers, Men's and Women's Glee Clubs, and the University Chorus which, with 120 members, is the largest of the 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.

The **Theater, Film, and Television Department,** one of the finest in the country, offers students several opportunities for artistic expression. Each year the Theater Division presents a series of major productions to the general public. The Motion Picture/Television Division produces about 300 student-directed films each year 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

If you'd rather be entertained than do the entertaining, UCLA's **Center for the Performing Arts** stages more than 200 public concerts and events each year. Ever since Royce Hall was dedicated in 1929, UCLA has been a premiere West Coast showcase for both new talent and the world's leading artists. The Los Angeles Philharmonic and Chamber Orchestras perform regularly each season, as do several major dance ensembles, theatrical companies, and performance artists. Numerous celebrities have appeared on UCLA stages, from Luciano Pavarotti to Marcel Marceau, Isaac Stern to Cleo Laine, Pierre Boulez to Liv Ullman. 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 1984-85 the UCLA men's athletic program placed third in the national all-around excellence competition and has won the award six times. The women's program placed first in polls conducted by the *Santa Monica Evening Outlook* and the *Knoxville Journal.* 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 48 NCAA men's championships — second highest in the nation — including 15 in tennis, 11 in volleyball, and 10 in basketball under the legendary John Wooden. In addition, the basketball team, led by Coach Walt Hazzard, won the 1985 National Invitational Tournament (NIT) Championship, and the soccer team won the 1985 NCAA title. You can participate on the varsity level in football, basketball, track, baseball, tennis, crew, volleyball, gymnastics, swimming, water polo, golf, soccer, and cross-country. For more information, contact the Men's Athletic Office at 825-8699.

WOMEN'S INTERCOLLEGIATE SPORTS — With 10 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 many national, regional, and conference titles, including the 1981-82, 1983-84, and 1984-85 NCAA championships in softball, the 1981-82 and 1982-83 track and field crowns, and the 1984 and 1985 volleyball titles. Other nationally ranked teams are those in basketball, swimming, tennis, cross-country, 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 825-8699.

INTERCOLLEGIATE ATHLETIC FACILITIES — UCLA's major indoor arena is the famed **Edwin W. Pauley Pavilion,** which seats 12,800 for UCLA basketball, volleyball, and gymnastics events. It was the site of the 1984 Summer Olympics gymnastics competition. Immediately adjacent, the **Elvin C. Drake Stadium** is the home of UCLA track and field competitions and site of many outdoor events including Commencement. The **Los Angeles Tennis Center,** a new 5,800-seat outdoor tennis stadium and clubhouse, was the site of the 1984 Olympic tennis competition. The refurbished **J.D. Morgan Intercollegiate Athletics Center** houses the newly established UCLA Athletic Hall of Fame. Off-campus facilities include the **Jackie Robinson Stadium** for varsity baseball, the **Marina del Rey Boathouse** for the UCLA crew and sailing programs, and the renowned **Rose Bowl** in Pasadena, home of the UCLA football team.

Athletics for Everyone

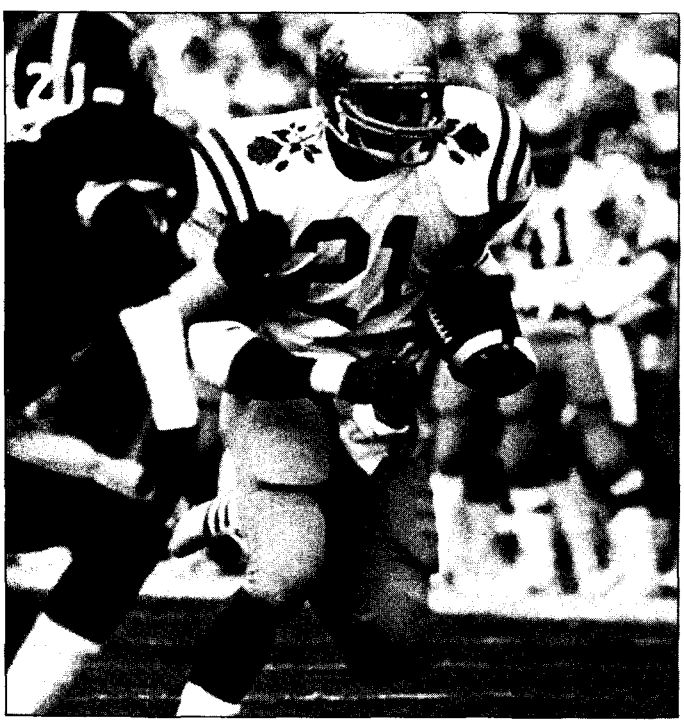
Whether you want to practice your favorite sport or learn a new one, you can do it all at UCLA. The extraordinary scope of athletic opportunities ranges from intercollegiate team play to an enjoyable jog around campus.

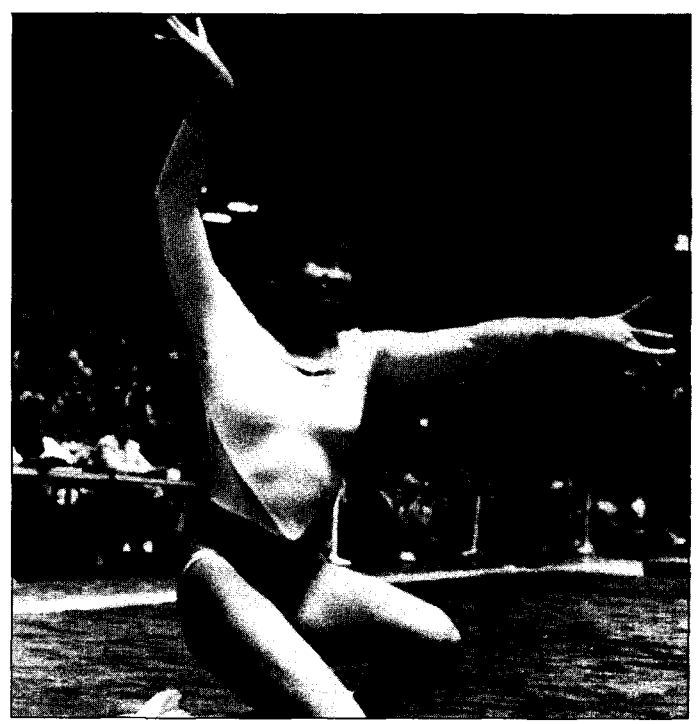
INTRAMURALS — Competitive intramural teams at UCLA are open to students, faculty, and staff. There are 40 activities in men's, women's, and coed competition, and many are divided into size or skill divisions so students at any level can get involved. For more information, contact the Intramural Sports Office in 2131 John Wooden Center (825-3701).

RECREATIONAL CLUBS AND CLASSES — Recreational clubs are formed at UCLA to bring people interested in a particular sport or activity together. Through more than 30 different clubs with a combined membership of some 2,000 students, you can learn (and meet people who enjoy) bowling, waterskiing, karate, rugby, or lacrosse, to name just a few. For club information, contact the University Recreation Association in the John Wooden Center (825-3701).

You'll also find a broad range of noncredit recreation classes in aquatics, boating and sailing, dance, fine arts, outdoor studies, physical fitness, and sports skills. For class information, contact the Recreation Instruction Program Office in the John Wooden Center (825-3701).

RECREATION FACILITIES — UCLA students have several major facilities in which to practice and play. The **John Wooden Recreation and Sports Center** is a comprehensive student activities building with several gymnasia, 10 racquetball/handball courts, a weight training facility, and exercise and martial arts workout rooms. The **Sunset Canyon Recreation Center,** open seven days a week the year round, features an Olympic-sized swimming pool, a family pool, picnic-barbeque areas, multipurpose play fields, an outdoor amphitheater, and various meeting rooms and lounges. Students also have the use of Pauley Pavilion, Drake Stadium, and the Los Angeles Tennis Center for recreational sports.





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 guidance and placement services to all UCLA students. Services are located in the PCPC Building (825-2981) and in two satellite locations: 1349 GSM (specializing in management, 825-3325) and 5289 Boelter Hall (specializing in engineering and the physical sciences, 825-4606).

Career Development — A staff of career counselors assists you in career exploration and the job search. Information on planning further education and alternative careers is available in the Career Resources Library. In addition to bringing graduate school representatives to campus, the Campus Interview Program brings employer representatives to discuss career opportunities with seniors and graduate students, and career-related summer employment with continuing students. The direct referral service posts a large number of currently available jobs in a variety of organizations.

Student Employment — A job listing and referral system helps students and their spouses find part-time, temporary, or vacation employment. Career-related opportunities include internships and cooperative education possibilities.

Educational Career Services — This is a specialized source of information and counsel for students and alumni interested in university, college, and secondary and elementary school positions. Current lists of educational job opportunities, internships, and a professional file service are available.

Student Health Service

The Student Health Service (SHS) is designed to offer the health care and information you may need as a UCLA student. Services are provided on an appointment basis at little or no cost to all registered students on presentation of Registration and UCLA Student I.D. Cards. You are encouraged to select a clinician who will provide ongoing health care. Additional information on all phases of SHS is available in the *UCLA Student Health Service* booklet produced by SHS, or by calling SHS information at 825-4073.

Location and Hours — General and emergency care is available in A2-130 Center for the Health Sciences. Office hours are 8 a.m. to 5 p.m. weekdays except Tuesday, when service begins at 9 a.m. Emergency care is also available for athletic injuries at Gate 10 in Pauley Pavilion (825-5704) from 1:30 to 6:30 p.m. weekdays. For emergency care when these facilities are closed, you may obtain treatment at the UCLA Medical Center Emergency Room on a fee-for-service basis.

Primary Care Clinics provide outpatient diagnosis, treatment, and consultation for most general health care needs. Call 825-2463 to schedule an appointment.

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

Women's Health Service provides care for routine women's health needs and treatment of gynecological problems. Family planning (birth control) services are available, as are testing, counseling, and referrals for pregnancy. Counseling for sexual problems and relationship concerns is also provided. Call 825-0854.

Men's Health Clinic, the newest SHS service and the first of its kind in the UC system, treats genital and urinary problems, both sexual and nonsexual in nature. The clinic also provides sexual counseling for UCLA's male students. Call 825-0861.

Dental Clinic services are available by appointment without need of a referral. While the primary function of this clinic is to treat dental emergencies, a limited number of general dentistry and dental hygienic services are available. Fees are charged for all services. Call 825-5858.

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 all aspects of health care. Call 825-4730.

Supplemental Health Insurance is recommended for all fully enrolled students because certain major expenses, including hospitalization, surgery, and emergency room costs, are not covered by the regular SHS program. The University requires, as a condition of registration, that international students attending UCLA on nonimmigrant visas have adequate health insurance, and it reserves the right to make the same requirement of all students.

A low-cost insurance policy is available for purchase at SHS at the beginning of each quarter. Students are not automatically enrolled in the plan nor is coverage automatically renewed. The deadline for purchasing insurance for Fall Quarter is **October 10.** For information on insurance available through SHS, call 825-1856.

Student Psychological Services

Student Psychological Services offers short-term personal counsel and psychotherapy at two locations. The Mid-Campus Office is located in 4223 Math Sciences (825-0768, 825-4207); the South Campus Office is in A3-068 CHS (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 quarter. Appointments are made on weekdays between 8 a.m. and 5 p.m. Emergency counseling is also available.

Helpline

Helpline (825-HELP) provides information, referrals, crisis intervention, and a friendly ear when you don't know where else to turn. It is open daily from 5 p.m. to midnight (1 a.m. on Friday and Saturday). For more information, contact Clive D. Kennedy, Student Psychological Services, 4223 Math Sciences (825-4207).

Dean of Students Office

The Dean of Students Office, located in 2224 Murphy Hall (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, student debts, and sexual harassment.

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 Dean of Students Office 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 infractions of those policies or regulations can result in disciplinary action. See "Student Conduct: Violation of University Policies" in the Appendix for more information.

Ombudsman

The Ombudsman is responsible for listening and responding to grievances from any member of the campus community (i.e., students, faculty, administrators, staff), for investigating those grievances where resolution has not been to the satisfaction of the concerned individual or where there are no established guidelines for resolution, and for resolving where possible, through mediation, those grievances (including sexual harassment). The office, located in 274 Kinsey Hall (825-7627), is independent in operation and is open from 8 a.m. to 5 p.m. weekdays; all matters are handled confidentially.

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 on a walk-in basis from 9 a.m. to 12:30 p.m. weekdays in 70 Dodd Hall (825-9894).

Central Ticket Office

Tickets are available at two locations on the UCLA campus: the ticket office on the ground floor of the James E. West Center (825-2101) and the trailer at 650 Westwood Plaza (825-2953). Tickets for all UCLA events are sold at both locations. In addition, each location provides special ticket services as follows:

The West Center location offers student discount tickets to campus *athletic* events and local motion picture theaters. You may also purchase tickets to off-campus events through Ticketmaster and Ticketron, as well as student discount tickets for RTD buses and tokens for the Santa Monica bus system.

The 650 Westwood Plaza location offers student discount tickets for on-campus *cultural* events, subsidized by the Student Committee for the Arts (Registration and UCLA Student I.D. Cards must be shown). There is a limit of two tickets per person. Watch the *Daily Bruin* ads for ticket sale dates.

Services for International Students

The **Office of International Students and Scholars (OISS)** works closely with the **International Student Center** to provide services and programs specifically for UCLA's 6,500 international students and post-doctoral scholars. Together they provide a comprehensive orientation program for these students which helps them to pursue their academic goals, and a series of programs which allow them to share their viewpoints with American students and the community.

The OISS staff, located in 105 Men's Gym (825-1681), includes professional and peer counselors especially prepared to assist with questions about immigration, employment, government regulations, financial aid, cross-cultural adjustment, and personal matters.

The International Student Center, 1023 Hilgard Avenue (208-4587), focuses on student-community relations and helps with language, housing, and other problems in addition to sponsoring cultural, educational, and social programs.

Services for Disabled Students/Veterans

The **Special Services/Veterans Affairs Office,** A255 Murphy Hall (825-1501), provides information for veterans and their dependents about V.A. educational benefits, tutorial assistance, and V.A. work-study and loan programs. The office issues fee waivers to dependents of California veterans who are deceased or disabled because of service-connected injuries and who meet certain income restrictions. Fee waivers are also issued to eligible dependents of California police and fire department personnel who died in the line of duty.

Services provided by the office for disabled and handicapped students include assistance with registration and class enrollment, parking permits, fee deferments authorized by the California Department of Rehabilitation, readers for the blind, interpreters for the deaf, note takers, and examination proctors. Ramps, elevators, and specially equipped rest rooms for the handicapped are provided in all campus buildings.

The **Computer Program for the Disabled** provides two IBM PC/XT computer workstations with special equipment and training for UCLA students, faculty, and staff with physical disabilities, low vision, or blindness. The workstations are located in the Social Sciences Microcomputer Laboratory, 2434 Franz Hall. For further information, call 825-6227.

Women's Resource Center

The Women's Resource Center, located in 2 Dodd Hall (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, 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. A library includes specialized publications on women's issues. Internships are offered in areas such as creative writing, editing, legislative research, publicity, and program development.

The Women's Resource Center, 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 six years. Fees range from $181 to $390 per month depending on care. Some grants are available for eligible student families. The center is located in Parking Lot 1 at 10833 Le Conte Avenue (825-5086).

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 825-8474.

The **UCLA Parent Toddler Group** is a cooperative nursery school open to children two to three and one-half years of age. Participating parents must work at school one morning in every four that their child attends. The school, open 9 a.m. to noon weekdays, is located in the Family Student Housing complex four miles south of campus at 3327 South Sepulveda Boulevard. For more information, call 391-9155 or 398-8739.

The **University Parents Cooperative Nursery School** offers a supportive educational environment to children of the UCLA community aged three to six years. Hours are 8:30 a.m. to noon and/or noon to 4 p.m. weekdays, with extended care available until 5:30 p.m. The nursery school is located in the Family Student Housing Community Center, 3327 South Sepulveda Boulevard (397-2735).

Safety and Security

Emergency: Campus Police — If you need to call the Campus Police Department, just dial two digits — **35** — from any campus phone. For nonemergency information, contact them at 601 Westwood Plaza (825-1491).

Escort Service — The Department of Community Safety provides free escort service every day of the year from dusk to 1 a.m. Uniformed escorts — specially trained UCLA students — are available to walk students, faculty, and staff members between campus buildings and local living areas or Westwood Village. To obtain an escort, call 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. Five vans operate Sunday through Thursday from 5 p.m. to midnight (6 p.m. to midnight in Spring Quarter) and serve many campus areas, including the residence halls, sororities, libraries, and living areas west of campus. For further information, call 825-1493.

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 women practical safety suggestions, increase physical and psychological preparedness, and heighten awareness of the complex issues of rape and sexual assault. For more information, call 206-8240 or 825-7661.

CPR — Free three-hour day or evening cardiopulmonary resuscitation classes (composed of a two-hour lecture and slide presentation and an hour of hands-on practice on Resusci-Annie torsos) are offered to UCLA students, staff, faculty, and visitors. For more information and scheduling, call 206-8886.

Important Phone Numbers

UCLA Police Department (24 hours)	825-1491
Police Emergency (from campus phones)	dial 35
UCLA Emergency Medical Center (24 hours)	825-2111
UCLA Escort Service (dusk to 1 a.m.)	825-1493
Helpline (5 p.m. to midnight)	825-HELP
Crime Information (5 p.m. to 7 a.m.)	825-7661

UCLA Alumni Association

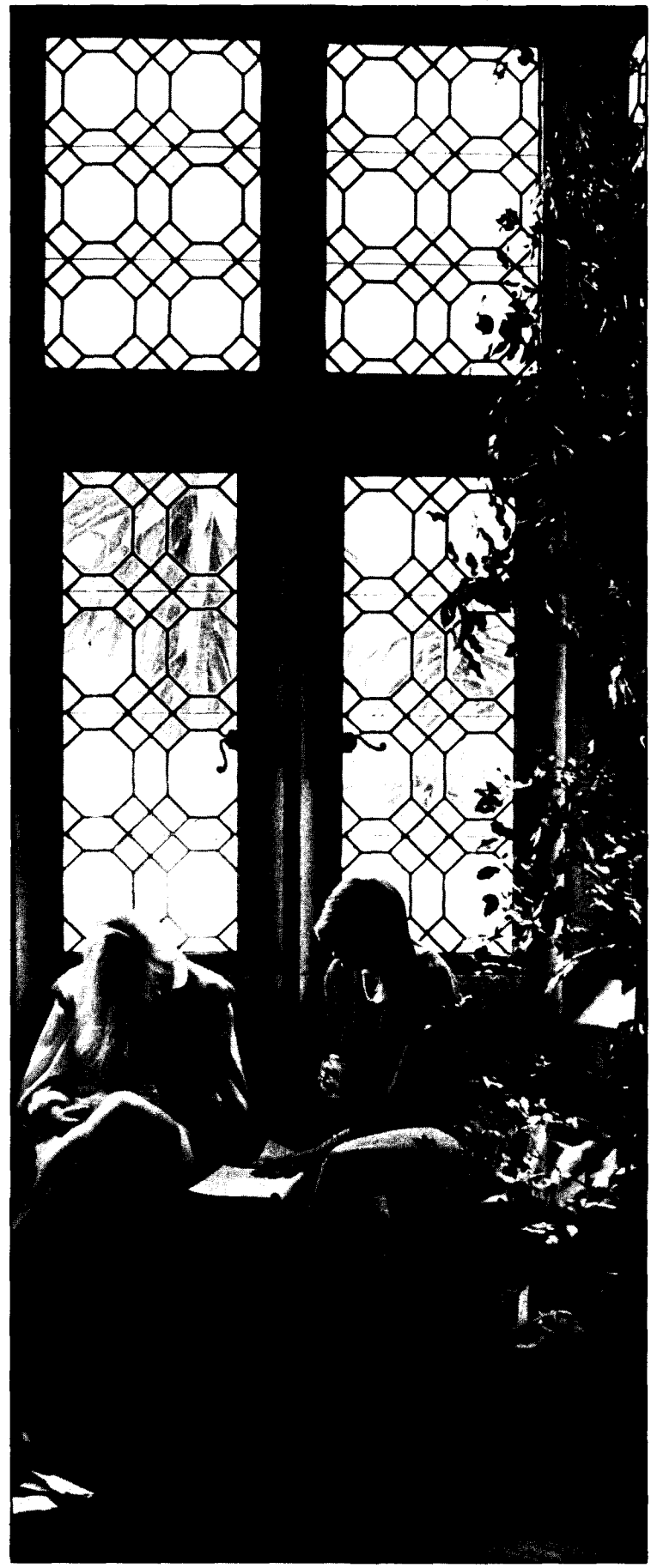
The UCLA Alumni Association, which celebrated its 50th anniversary in 1984, serves to advance the University's interests and to benefit students and alumni. With nearly 47,000 members, it ranks among the six largest dues-paying alumni groups in the country. Students, graduates, parents, faculty, staff, and University Extension students are all eligible to join one of approximately 90 regional clubs, professional and school organizations, and support and honorary clubs. Alumni participate in the many general interest programs as well.

The Alumni Association awards scholarships to freshmen and continuing students each year; sponsors UCLA's Homecoming festivities and holds "Dinners for Twelve Strangers," which bring together students, alumni, and faculty; and supports student events such as the Chancellor's Freshman and Graduate Receptions, Spring Sing, and Mardi Gras. The Alumni Travel Program enables alumni to participate in educational and cultural travel and to support UCLA athletic teams at major away games. The Governmental Relations Program promotes constructive relations between the University and government officials.

Benefits of Alumni Association membership include free library privileges as well as discounts on UCLA Fine Arts Productions, athletic events, group medical insurance, and travel programs. Graduating seniors who join receive special discounts on cap and gown rental, diploma lamination, graduation announcements, and an Extension class of their choice. The Alumni Association is located in the James E. West Center, 325 Westwood Plaza (825-3901).

Undergraduate Study

2



Undergraduate Admission

Information:
Undergraduate Admissions and Relations with Schools
1147 Murphy Hall
(213) 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 schedules frequent student-guided individual and group tours of the campus which are both enjoyable and informative. Feel free to call the UARS Office at (213) 825-8764 for tour information; (213) 825-3101 for general 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 your chance of 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. Completing the required high school courses with satisfactory grades will not automatically determine whether you will be selected for admission to UCLA, as students are chosen from a large number of highly competitive applicants. Most of these applicants will have met the minimum requirements; thus selection depends on additional factors.

Many elements are considered in the selection process, but the primary ones are (1) academic preparation — pattern and quality of courses, (2) performance in courses completed, and (3) scores received on the standardized college tests (Scholastic Aptitude Test or American College Test and achievement tests).

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 courses. Overall performance must be well above average.

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 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 an *Undergraduate Application Packet* containing all necessary forms and instructions from your California high school or community college counselor or from any University of California Admissions Office. One application is used to apply to all UC campuses. You may apply to two UC campuses for the initial $35 application fee; for each additional campus you select, you must pay an extra $20 fee per campus. These fees are not refundable.

Complete the application, taking care to list the college or school you wish to attend at UCLA and your desired major. Send the completed application, along with the nonrefundable application fee, to University of California, P.O. Box 6600, Albany, CA 94706-0600.

Checks or money orders should be made payable to The Regents of the University of California. (If you have applied previously and were ineligible, or if you were admitted previously and did not register, you must file a new application for the quarter you want to attend and submit a new application fee.)

If you are in high school when you apply (freshman applicant), **do not** send your sixth and/or seventh semester high school transcripts. A final transcript, including a statement of graduation or proficiency, will be required at a later date. You must also submit official results of the Scholastic Aptitude Test (SAT) or American College Test (ACT) and three achievement tests.

If you have attended or are attending another college when you apply (transfer applicant), request that transcripts of all your high school and college work be sent to UCLA. **It is your responsibility to arrange for transcripts to be sent and to assure that they arrive promptly; hand-carried transcripts are not acceptable for final evaluation.** 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 1987:
File July 1-31, 1986 (Intercampus transfers only)
Spring Quarter 1987:
File October 1-31, 1986 (Junior-level transfers only)
Fall Quarter 1987:
File November 1-30, 1986 (Freshmen and transfers only)

(Applications for admission to Fall Quarter 1986 would have had to be filed during November 1985.)

Some departments, majors, colleges, or schools at UCLA may close to new applicants as enrollment targets are met. You should inquire just prior to the filing period to determine if your area of interest is open.

Notification of Admission

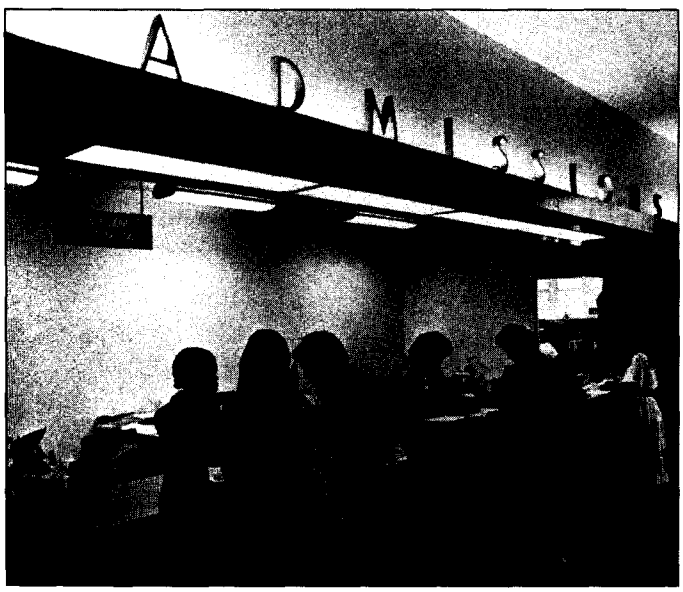
You will be mailed a notice, which you should keep, acknowledging receipt of your application. Later, you will receive a letter explaining your admission status. The length of time before admission notification varies depending on how complete your application is and how quickly your records are received. In general, most Fall Quarter applicants are notified by March 15.

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 $50 deposit, also required at this time, will be applied to your University registration fee if you register in the quarter to which you are admitted.

Entrance Requirements

All campuses of the University of California have the same undergraduate admission requirements. The requirements are based on two principles: (1) the best indicator of success in the University is a record of high grades in previous schoolwork; (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 admission requirements, however, does not necessarily assure admission to the campus of your first choice. Some UC campuses with enrollment limits, including UCLA, cannot admit all qualified undergraduate applicants. Many departmental programs of study attract more qualified applicants than can be accommodated each year. The selection of applicants is based on demonstrated high scholarship in preparatory work, which often goes well beyond the minimum eligibility requirements.



Note, too, that admission requirements vary for California residents and nonresidents. Since the University of California is partially state-funded, admission requirements are necessarily somewhat more restrictive for out-of-state applicants. The term "resident" as used here should not be confused with the definition of legal residence for tuition purposes as defined in the Appendix.

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 Scholarship 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, of which seven 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** — One year of United States history, or one-half year of United States history and one-half year of civics or American government.

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

(3) **Mathematics** — Three years of university preparatory courses (elementary algebra, geometry, and intermediate algebra).

(4) **Laboratory Science** — A one-year course in one laboratory science, taken in the tenth, eleventh, or twelfth grade.

(5) **Foreign Language** — Two years of one foreign language with a written literature.

(6) **College Preparatory Electives** — Four 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 science, and fine arts. In general, elective courses should involve considerable reading and should develop your analytical and reasoning ability and skill with written and oral exposition.

Scholarship Requirement

Eligibility for admission to UCLA 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 requirements, see the *Undergraduate Application Packet* 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 languages, sciences, or social sciences.

For detailed information on admission requirements for freshman students, see the *Undergraduate Admission Packet* or contact UARS.

Admission as a Transfer Student

A transfer applicant has 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.

Requirements for admission as a transfer student vary depending on your high school record and the date of your high school graduation, though a GPA of 2.0 or better is required in transferable courses. 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 general education (breadth) requirements and fulfill prerequisites for your intended major. Because a sound liberal arts education encompasses more than an in-depth knowledge of one field, most colleges and schools at UCLA require that students take coursework in areas outside their major. Before transferring to UCLA, you can 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 *Undergraduate Application Packet* 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. For further information, see "Intercampus Transfer" in Chapter 4.

Senior-Level Applicants

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

Second Bachelor's Degree Applicants

By policy, second BAs are not generally granted by the University.

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).

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.

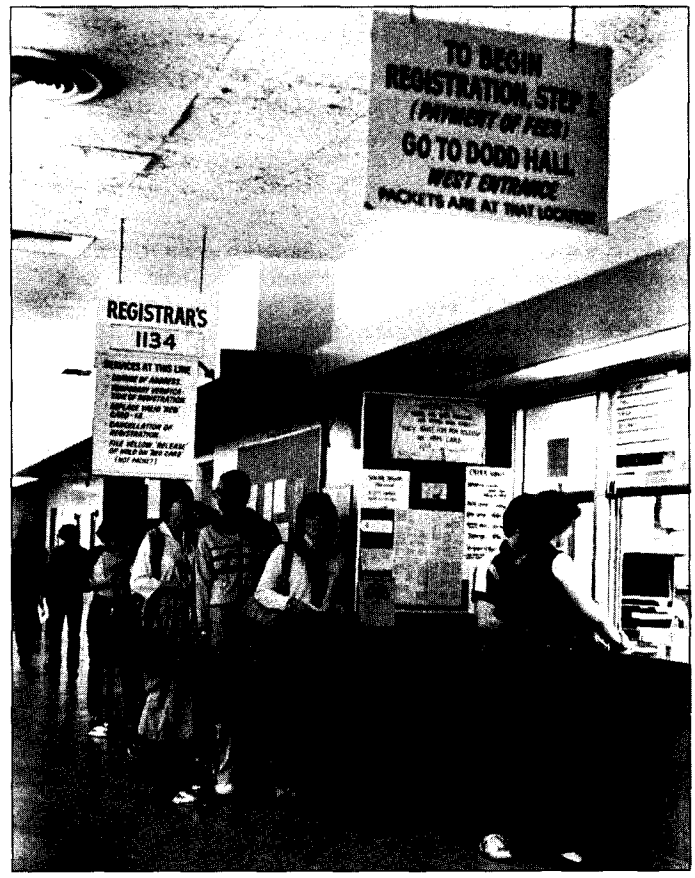
Your application for admission, copies of official certificates, and detailed records of all secondary schools attended should be submitted **as early as possible after the filing period opens** (see "When to Apply" at the beginning of this chapter). This will allow time for the necessary correspondence 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 pass the English as a Second Language Placement Examination (ESLPE) given by the University. If you do not pass the ESLPE, you are required to enroll in one or more ESL 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.

All new and reentering international students must obtain clearance in person at the Student Health Service by completing and returning a Health Evaluation form, by verifying adequate health insurance coverage, and by establishing absence of active tuberculosis. In addition, all international students must obtain an annual health insurance clearance each fall at the SHS Insurance Office. For information, call (213) 825-4073.

Readmission

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



If you are absent for two or more consecutive quarters, you must file an application for readmission with the Registrar. During the 1986-87 academic year, all such students returning in the same standing (undergraduate) must file applications for readmission as follows:

Filing Deadlines

August 15 for Fall Quarter 1986
November 25 for Winter Quarter 1987
February 25 for Spring Quarter 1987

Applications are available at the Registrar's Office, 1134 Murphy Hall. Your completed application must be accompanied by a $35 application fee (nonrefundable) and transcripts of records from any other institutions (including University Extension) you attended during your absence. Within enrollment limitations, 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 applications for readmission are filed on time. Contact the Registrar's Office at (213) 825-1091 for further information on readmission.

Registration and Enrollment

Information:
Registrar's Office
1134 Murphy Hall
(213) 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 quarter. To obtain a copy by mail, write to ASUCLA Students' Store, 308 Westwood Plaza, Los Angeles, CA 90024, Attn: Mail Out. Include a check or money order for $2 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 for requesting enrollment in classes. You must complete both processes by the established deadlines to be officially registered and enrolled for the quarter.

Registration may be accomplished by mail or in person. You may use a combination of both processes to pay fees and enroll in classes, but **all eligible students are encouraged to register by mail or use the Cashier's Drop Slot.** It will save you the time and trouble of waiting in line.

Last Mailing Dates

(Tentative only; refer to the *Schedule of Classes* for firm dates)

To Register (Pay Fees) by Mail:
August 29 for Fall Quarter 1986
December 12 for Winter Quarter 1987
March 13 for Spring Quarter 1987

To Enroll in Classes by Mail:
August 29 for Fall Quarter 1986
November 19 for Winter Quarter 1987
February 27 for Spring Quarter 1987

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 a 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.

Enrolling in classes, like paying fees, is accomplished most effectively and most easily by mail. Because enrollment by mail is processed according to a postmarked date, you will increase your chances of getting the classes you want if you send your Study List Request to the Registrar's Office on the first mailing date. Consult the *Schedule of Classes* for firm dates and for all details on enrollment procedures.

You may enroll in classes in person on certain days preceding the beginning of classes each quarter. Hours are 8:30 a.m. to 5 p.m. on the following days:

Enrollment in Classes in Person

September 23-26 for Fall Quarter 1986
December 4-6 for Winter Quarter 1987
March 12-14 for Spring Quarter 1987

Study List Changes

Tentative Study Lists showing enrollment results are mailed to each student 10 days before the term begins. Before the first day of class, you may make program changes (add/drop courses, switch sections, or change grading options) by keeping the appointment to enroll which is printed on your Tentative Study List. Once instruction begins, and **through the tenth day (second week) of classes,** you may make as many program changes as you wish, without appointment and without fee, at the enrollment terminals in the Ackerman Union second-floor lounge.

Viewing Terminal — If you want to take an up-to-date look at your Study List or obtain an extra copy of it, you may do so before instruction begins or during the first 10 days of classes at the viewing terminal on the east balcony of Ackerman Union or at 1134 Murphy Hall. On each visit to the terminal, you will receive a copy of your Study List showing enrolled courses and waiting list courses, including your position on the waiting list. You may also use the viewing terminal to drop courses or change the grading basis of courses, but in order to add courses or switch sections you must use a regular enrollment terminal.

On the tenth day of instruction the Study List of enrolled courses becomes "official" and a computerized Official Study List is mailed to each registered student. (If you do not receive yours on time, obtain a copy in the Registration/Enrollment Office, 1134 Murphy Hall.) **You are responsible for all courses and the grading basis as listed on the Official Study List, and you cannot receive credit for courses not listed.** Unapproved withdrawal from or neglect of a course entered on the Study List will result in a failing grade.

Changes to your Official Study List require an Enrollment Petition from your college or school. Each petition costs $3, but you may make any number of changes on the same form. If you plan to add a course, you must bring a Permission to Enroll form from the instructor or ask the instructor to sign the petition. 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. The deadline to drop classes is the end of the fourth week of instruction (see Calendar).

Change of College or Major

Changing your college or major requires the approval of the college or department you want to attend. Applications are made by petition, which is available without charge from the college or school office. You may not change majors after the opening of the last quarter 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 $1,362 per quarter (for a full definition of residence and nonresidence, see the Appendix of this catalog).

At the time of registration each quarter, all undergraduates must pay the following fixed fees. **Fees for Fall Quarter 1986 are current as of publication date but are subject to change without notice by The Regents.**

Quarterly Expenses, Fall 1986

University registration fee	$ 174
Education fee	241
Ackerman Student Union fee	4
Associated Students (ASUCLA) fee	8
Wooden Recreation Center fee	5
Total for California residents	**$ 432**
Nonresident tuition fee	$1,362
Total for nonresidents	**$1,794**

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 or late filing of the Study List (after the tenth day of classes). 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 refer to the *Schedule of Classes.*

Reduced Fee Programs

UCLA recognizes the need for part-time study in special circumstances. If you have 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 one-half the education fee. You must file the Request for Fee Reduction form with your college or school by the tenth day of instruction. Fee assessment is based on total units enrolled as of Friday of the third week of instruction.

Lapse of Status

Your status may lapse if you fail to settle financial obligations when due (or make satisfactory arrangements with the Main Cashier if payment cannot be made) or if you fail to respond to official University notices.

With lapsed status you are not entitled to any University services except assistance toward reinstatement. After you have satisfied the obligation, a petition for reinstatement must be approved by the office recommending the lapse of status and filed with the Registrar's Office, 1111 Murphy Hall, with a $10 reinstatement fee.

Estimated Annual Budgets for California Residents

	Single, Commuter, Living at Parents' Home	Single, Living in UCLA Residence Hall, Co-Op, Sorority, or Fraternity	Single, Living in Off-Campus Apartment or House	Married, Living in UCLA Family Student Housing	Married, Living in Off-Campus Apartment or House
University Fees	$1,295	$1,295	$1,295	$1,295	$1,295
Books and Educational Supplies	525	525	525	525	525
Food and Rent	1,180	2,960*	4,400	6,500	8,200
Transportation	600	100	400	400	400
Personal	950	950**	950	2,300	2,300
Total Budget	**$4,550**	**$5,830**	**$7,570**	**$11,020**	**$12,720**

*If you are assigned a room in a residential suite, add $600.
**Includes $100 for extra meals during breaks.

For more information on housing, see Chapter 1 or contact the UCLA Community Housing Office in 100 Sproul Hall (825-4491).

Living Expenses

Printed on the previous page are the estimated yearly budgets for undergraduate California residents. Nonresidents must add the $4,086 annual tuition fee to their total expenses for an accurate estimate. Expenses cover the three regular session quarters of the 1986-87 academic year and do not include Summer Sessions. The budgets are designed to serve as a guide only.

Financial Support

Information:
Financial Aid Office
A107 Murphy Hall
(213) 206-0432

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 your high school counselor or from the Financial Aid Office, A107 Murphy Hall, University of California, Los Angeles, CA 90024.

Applying for Financial Aid

The deadline for filing all undergraduate financial aid applications for academic year 1987-88 is **early February 1987** (applications for 1986-87 would have had to be filed by February 1986). 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 *Undergraduate Application Packet* during the filing period (see "Undergraduate Admission" at the beginning of this chapter). On the application, check the boxes requesting financial aid and scholarship application materials.

Continuing students may obtain UCLA Scholarship and Financial Aid Application Packets at the Financial Aid Office in December of each year. Continuing students from foreign countries may obtain a Financial Aid Application for International Students at the Financial Aid Counseling Window, A107 Murphy Hall. No financial aid can be awarded to international students in their first year of attendance at UCLA.

Student Aid Application for California (SAAC)

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 Student Aid Application for California (SAAC). If you are financially independent, your own financial circumstances are analyzed rather than those of your parents (see the *Financial Aid Handbook* for the definition of financial independence).

The SAAC is used to apply for Pell Grants, funds administered by UCLA, and Cal Grants administered by the California Student Aid Commission. It is available at California high schools and colleges and the UCLA Financial Aid Office, and should be filed in early February with the College Scholarship Service, P.O. Box 70, Berkeley, CA 94701. Be sure to indicate that a report is to be sent to UCLA.

Kinds of Financial Aid

There are four basic kinds 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 money that is a gift (scholarship or grant) and some that will have to be paid back or worked for. If you indicate a preference for work or loan, we 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 and department.

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.

With the exception of the Regents and Alumni Association Scholarships, financial need is a prerequisite for UCLA scholarships. Each year approximately $300,000 is awarded from the many different scholarship funds. Awards usually range from $100 to $1,500 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 SAAC 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.

UCLA Alumni Association Scholarships

Alumni Scholarships are available to California high school graduates who will be UCLA freshmen in the Fall Quarter. No financial need is involved, but you must show academic promise. Alumni Scholarships are merit-based and competitively awarded. Amounts for 1986-87 range from $1,000 to $10,000. The Ralph Bunche Scholarship, also awarded by the UCLA Alumni Association and named in honor of the Nobel Peace Prize laureate and UCLA alumnus, is awarded to students who meet the University's Student Affirmative Action definition.

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 guidelines and funds permit, your financial aid package will include a grant.

Pell Grants

Pell Grants are federal aid programs 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 1986-87 range from $250 to $2,300 and are determined by your own and your family's financial resources. U.S. citizens, permanent residents, and refugees are eligible to apply by filing the SAAC. The University requires all eligible undergraduates to apply for a 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 1986 are eligible to apply for a California Student Aid Commission Cal Grant award. The SAAC and Cal Grant Supplements are the official applications for these programs. "Cal Grant A" awards are applied toward education and 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.

Grants-in-Aid

Grants-in-Aid provide eligible students with financial assistance from University funds. Awards range from $100 to $5,010. All students may apply.

Supplemental Educational Opportunity Grants

These awards are federally funded and are granted only to undergraduates with financial need. Awards range from $200 to $1,500.

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. If you are a first-time borrower, schedule an appointment with a financial aid counselor. 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 825-9864 for an interview appointment before graduating, transferring, or withdrawing from UCLA.

National Direct Student Loans (NDSL)

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

Nursing Loans

To be eligible for a nursing loan, you must be a U.S. citizen, permanent resident, or refugee and a student in the School of Nursing. Up to $2,500 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 $75 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 at the Student Loan Services Office, A227 Murphy Hall.

Guaranteed Student Loans (GSL)

Federal and California Guaranteed Student Loans are long-term budget-based loans made by banks, savings and loan associations, and credit unions. They are available to U.S. citizens, permanent residents, or refugees who are enrolled in at least a half-time program at UCLA. You should check with various lending institutions to determine their particular loan policies, but the Financial Aid Office must process applications before you submit them to a lending institution. Applications are available at the Financial Aid GSL Office, A129J Murphy Hall.

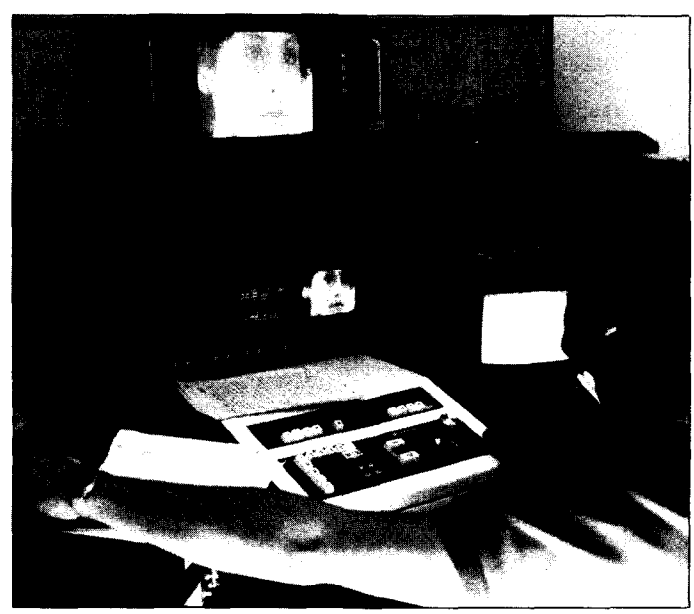
Repayment of the GSL begins six to nine months after graduation or withdrawal and continues for a maximum of 10 years. If you receive a federal or state interest subsidy, the loan is interest-free while you are a student and for six to nine months thereafter. Undergraduates may borrow $2,500 per academic year up to a total of $12,500. GSL processing takes approximately 10 to 12 weeks.

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 and 40 hours per week during breaks. An academic year's work-study award may range from $900 to $5,200, but your gross earnings may not exceed the amount awarded to you. There are two basic work-study programs available.

Under **College 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, permanent resident, or a refugee.

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



Undergraduate Majors and Degrees

MAJORS	DEGREES	OTHER
College of Letters and Science		
African Studies	—	Special Program (taken jointly with an organized major)
Afro-American Studies	B.A.	
Anthropology	B.A.	
Asian American Studies	—	Special Program (taken jointly with an organized major)
Astronomy	B.S.	
Atmospheric Sciences	B.S.	
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.	
Chicano Studies	B.A.	
Classics	B.A.	
Classical Civilization	B.A.	
Greek	B.A.	
Latin	B.A.	
English/Greek	B.A.	
English/Latin	B.A.	
Communication Studies	B.A.	
Cybernetics	B.S.	
Diversified Liberal Arts	—	Certificate Program (taken jointly with an organized major)
Earth and Space Sciences		
Geology	B.S.	
Geology (Engineering Geology)	B.S.	
Geology (Geochemistry)	B.S.	
Geology (Nonrenewable Natural Resources)	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.	
Economics/Business	B.A.	
Economics/International Area Studies	B.A.	
Economics/System Science	B.S.	
English	B.A.	
French	B.A.	
French and Linguistics	B.A.	
Geography	B.A.	
Geography/Ecosystems	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.	
Kinesiology	B.S.	
Latin American Studies	B.A.	
Law and Society	—	Special Program (taken jointly with the Political Science major)
Linguistics	B.A.	
African Languages	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.	

MAJORS	DEGREES	OTHER
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.	
Mathematics/Applied Science	B.S.	
Mathematics of Computation	B.S.	
Program in Computing	—	Program (taken jointly with an organized major)
Mathematics/Computer Science	B.S.	
Microbiology	B.S.	
Near Eastern Languages and Cultures		
Ancient Near Eastern Civilizations	B.A.	
Arabic	B.A.	
Hebrew	B.A.	
Jewish Studies	B.A.	
Near Eastern Studies	B.A.	
Philosophy	B.A.	
Physics	B.S.	
General Physics	B.A.	
Political Science	B.A.	
Psychology	B.A.	
Cognitive Science	B.A.	
Psychobiology	B.S.	
Religion, Study of	B.A.	
Slavic Languages and Literatures	B.A.	
Russian Civilization	B.A.	
Russian Linguistics	B.A.	
Sociology	B.A.	
Spanish and Portuguese		
Portuguese	B.A.	
Spanish	B.A.	
Spanish and Linguistics	B.A.	
Spanish and Portuguese	B.A.	
Urban Studies or Organizational Studies	—	Special Program (taken jointly with an organized major)
Women's Studies	—	Special Program (taken jointly with an organized major)
World Arts and Cultures	B.A.	
College of Fine Arts		
Art, Design, and Art History		
Art	B.A.	
Art History	B.A.	
Design	B.A.	
Dance	B.A.	
History/Art History	B.A.	
Individual Field	B.A.	
Music	B.A.	
Theater, Film, and Television		
Motion Picture/Television	B.A.	
Theater	B.A.	
World Arts and Cultures	B.A.	
School of Engineering and Applied Science		
Aerospace Engineering	B.S.	
Chemical Engineering	B.S.	
Civil Engineering	B.S.	
Computer Science and Engineering	B.S.	
Electrical Engineering	B.S.	
Engineering	B.S.	
Materials Engineering	B.S.	
Mechanical Engineering	B.S.	
School of Nursing		
Nursing	B.S.	

Getting Your Bachelor's Degree

Colleges and Schools

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

Colleges at UCLA provide a broad, nonprofessionally oriented curriculum leading to both undergraduate and graduate degrees. UCLA has two colleges: the College of Letters and Science and the College of Fine Arts.

Schools provide training for specific professions and are authorized to grant professional degrees (e.g., Master of Business Administration, Master of Engineering, Doctor of Education). UCLA has 11 professional schools, two of which offer undergraduate degree programs: the School of Engineering and Applied Science and the School of Nursing.

Each of the colleges and schools 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. There are no undergraduate minors at UCLA, but 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 stay informed of rules, regulations, and policies affecting your life as a UCLA student and your academic standing, and to comply with them. 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 will possibly 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 or school 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 with advisers in the Placement and Career Planning Center.

A few words of warning: certain majors, especially in fine arts, engineering, and the sciences, require early declaration. Some have enrollment quotas and will allow application by new majors only during a specified quarter. 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 minimum and maximum number of units required for graduation. The Orientation program for new students will take you through a step-by-step plan for 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 coursework for the bachelor's degree at UCLA. A maximum of 208 units is allowed in the College of Fine Arts and the School of Nursing; in the College of Letters and Science a maximum of 216 units (228 for double majors and special programs) is allowed. (If you have credit for English 1 taken Fall Quarter 1979 through Summer Quarter 1984 at UCLA, the minimum and maximum unit requirements are increased by two units: 182 for the minimum and 210, 218, or 230 for the maximum.) In the School of Engineering and Applied Science, the minimum units allowed are between 185 and 201 (depending on the program); 213 maximum units are allowed.

In working toward a bachelor's degree, you should be aware that in addition to unit requirements there are three levels of requirements which you must satisfy. The first level 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, and American History and Institutions);

(2) College or school requirements (e.g., credit and scholarship, English composition, general education requirements);

(3) Departmental 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 level 2 requirements, and then to the individual departments within each college and school for level 3 requirements.

University Requirements

The University of California has established two requirements which all undergraduates must satisfy in order to graduate: Subject A, 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 quarter in residence. You may meet this requirement by:

(1) Scoring 3, 4, or 5 on the College Entrance Examination Board (CEEB) Advanced Placement Test 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 at another institution, OR

(4) Passing a Subject A Placement Test required of all students who have not otherwise met the requirement.

If you do not meet the requirement in one of the ways described above, during your first quarter in residence at UCLA you must enroll in either English A or B (determined by performance on the Subject A Placement Test). Each course must be taken for a letter grade and passed with a grade of C or better. No credit toward a degree is granted for either course whether taken at UCLA or another UC campus. If you receive a final grade of C− or less, you must repeat the course during your next quarter in residence. You will not receive credit for any English course (except English A or B) unless the Subject A requirement is satisfied.

English as a Second Language (ESL) Students: If your native language is not English, you are required to take the English as a Second Language Placement Examination (ESLPE) even if you have received transfer credit for an acceptable college-level course in English composition at another institution (you are exempt from the Subject A examination). You may satisfy the Subject A requirement by (1) passing the ESLPE or (2) completing English (ESL) 33C with a grade of C or better (C− or a Passed grade is not acceptable). If you do not meet the requirement by either of the above methods, you must take (during your first quarter in residence at UCLA) either English (ESL) 33A, 33B, or 33C, depending on your ESLPE results. You must proceed in the English (ESL) 33 series until you complete course 33C with a grade of C or better. All units apply toward graduation but cannot be applied toward general education requirements.

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 United States 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
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, 148A, 148B, 148C, 149A, 149B, 150A, 150B, 150C, 151A, 151B, 152A, 152B, 153, 154A, 154B, 154C, 154D, 155A, 155B, 156A, 156B, 156C, 156D, 156E, 157A, 157B, 157C, M158A, M158B, M158C, 158D, 158E, M159A, M159B, 160, 161, 162, 163
Political Science 1, 70, 114A, 114B, 143, 144, 145, 172A, 172B, 180, 186

Equivalent courses completed in University 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 a teaching 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 United States.

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

Course Credit and Minimum Scholarship

In acceptable courses, the grades A through C and Passed denote satisfactory progress toward the bachelor's degree. The grades C− through D− yield unit credit toward the degree but 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 quarter. 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.

You may terminate probation at the end of a regular quarter 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 quarters, you may become subject to dismissal from the University.

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 quarter is less than 1.5, OR

(2) If you do not earn at least a C (2.0) average in any quarter when you are on probation, OR

(3) If you do not end probation within two quarters.

Note: In some colleges and schools, you may be subject to disqualification for failing to meet minimum progress requirements. Check with your college or school counselor.

If you are subject to dismissal, your transcript will carry the notation "Academic Probation, Continuance Subject to Dean's Approval." 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

UCLA is a full-time educational institution, and students are expected to complete their undergraduate degree requirements and graduate within four years. Maintaining the recommended study load will enhance your learning experience and the coherence of your studies.

The normal program for undergraduate students is three to four courses (12 to 16 units) per quarter; colleges and schools enforce minimum enrollment or minimum progress regulations. 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.

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.

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 colleges, 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 taught in existing academic departments. Many involve nontraditional educational concepts, interdisciplinary topics, and subjects on the leading edge of faculty interest.

Each quarter 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 (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 (825-0831).

Government Internship Program — More than 2,700 UCLA students have learned about the inner workings of government while serving in this program, the largest of its kind in any university in the nation. Bruins serve full-time internships for one or more quarters on the staffs of elected officials, public interest groups, and government agencies in Sacramento, Washington, and overseas. Others are participating in business, banking, and the arts in New York and San Francisco. The positions carry a small stipend.

International Opportunity Counseling Service — The EXPO Center counsels students on study, travel, and work opportunities outside the United States, offering information on some 1,800 overseas study programs open to UCLA students. EXPO also maintains a library of current materials related to study and travel opportunities abroad. International Student Identity Cards and Youth Hostel memberships are issued at the center.

Volunteer Income Tax Assistance Program (VITA) — Each winter the VITA program provides free income tax aid to UCLA students and a variety of disadvantaged people off campus. Student volunteers receive extensive training by the IRS in preparing tax returns and tax counseling.

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, community service, or cooperative education programs. The office is located in 70 Powell Library (825-7867).

Departmental Field Studies Development — Coherent field programs for academic credit have been developed in anthropology, business and administration, Chicano studies, communication studies, English, geography, history, kinesiology, political science, psychology, sociology, and women's studies. Departmental coordinators work with you to develop field projects and find placements and academic sponsors.

Independent Field Studies — You may design internships and field study opportunities to meet your specific academic, personal, and career goals. A field study coordinator helps you with your plans on a one-to-one basis and helps arrange academic credit for an appropriate field studies project.

Developmental Disabilities Immersion Program (DDIP) — Cosponsored by Field Studies Development and the Departments of Psychology and Psychiatry, DDIP offers an intensive living, studying, and working experience in developmental disabilities. One session is offered each year during Winter and Spring Quarters. For more information, call 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. For a complete description of this program, see Chapter 5 on the College of Letters and Science.

Professional Schools Seminar Program

This program offers seminars that explore topics bridging various academic disciplines and professional practice. Students seeking to define their own academic and career goals will 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 the Fall, Winter, and Spring Quarters. Enrollment is limited to allow students close contact with professional school faculty members; lower division students are preferred. For further information, contact the Program Office in 80 Powell Library (825-5467).

Individual Classes

Most departments offer the individual study (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 is designed to provide UCLA undergraduates with opportunities to work with senior faculty on research projects. You select a faculty sponsor and the two of you agree on a contract detailing the nature of your work and the specific research tasks to be completed. Your involvement can be either voluntary or, in some instances, for academic credit through an individual special studies 199 course. In addition, you will be eligible to have "Student Research Program" and a designation of the research department appear on your transcript.

All undergraduates in good academic standing are eligible to participate. Research opportunities exist in most academic departments within the College of Letters and Science. For further information, contact the SRP Office in A316 Murphy Hall (825-6443).

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 will introduce 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, 825-1965 or 825-3382 (**Division of Honors** — A311 Murphy Hall, 825-1553 or 825-3786)

College of Fine Arts — A239 Murphy Hall, 825-9705

School of Engineering and Applied Science — 6426 Boelter Hall, 825-2826

School of Nursing — 2-200 Louis Factor Building, 825-7181

Counseling Assistants

Counseling assistants (CAs) are UCLA graduate students who have been specially trained to help new students with the transition into University life. Although employed in the College of Letters and Science, they represent a number of academic disciplines in several colleges and schools on campus. CAs help new students during Orientation with program planning and course selection, and are available throughout the year for follow-up visits and to provide help with program planning, skill building, and personal support. You may make an appointment with a CA in A316 Murphy Hall (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 at these outdoor campus locations: Campbell Hall (southwest corner), Placement and Career Planning Center, Powell Library (southeast corner), and Royce/Powell Quad, weekdays 10 a.m. to 2 p.m.; Murphy Hall and Schoenberg Hall, weekdays 9 a.m. to 3 p.m. During registration week every quarter ASK counselors also are available from 8 a.m. to 5 p.m. daily in the computer room and Grand Ballroom in Ackerman Union.

Preparatory Programs for New Students

The Office of Preparatory Programs, located in A316 Murphy Hall (206-1217), administers six important programs to help new students adjust and succeed academically at UCLA: Orientation, Freshman Summer Program, Transfer Summer Program, Academic Advancement Program, ARC Math/Sciences Tutorials, and ARC Composition Tutoring Lab and ESL Service Courses Tutorials. Since most of the courses which new students take are offered by the College of Letters and Science, the Office of Preparatory Programs is a part of that academic unit; however, the programs are open to new students enrolled in any college or school on campus.

Orientation

Orientation at UCLA provides a comprehensive introduction to campus life. During the summer and before the beginning of the 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. 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 some colleges and schools. Sessions for parents are also offered.

During the summer, Orientation offers three-day, two-night dormitory live-in programs for freshmen and both three-day, two-night and two-day, one-night programs for transfer students. Prior to the Winter and Spring Quarters, one-day on-campus programs are offered. There is a fee for participation. For more information, contact the Orientation Office in A316 Murphy Hall (206-6685).

Freshman Summer Program (FSP)

The Freshman Summer Program is a seven-week instructional program designed to help entering freshmen meet UCLA's high academic standards by improving composition, mathematical, and general learning skills.

Several hundred new freshmen get a head start every summer through the program's classroom instruction, tutorials, and academic advising workshops held for four hours each day. Special English courses — English A and B — help students improve writing skills and meet the University's initial composition requirement. The program's math courses prepare students for subsequent university-level math courses — including calculus — required for many majors at UCLA. Moreover, students receive guidance on academic planning and are assured enrollment in Fall Quarter classes.

FSP offers a firsthand introduction to UCLA. You can live in the residence halls (optional), take part in academic and personal counseling sessions, and generally get to know the campus and its facilities. The application fee is $10; if you have applied and are eligible for financial aid, there are no additional registration or tuition fees. (If you are not financial aid-eligible, you will have to pay a portion of the program's expense.) Other program costs are relatively low. You are eligible for the program if you have scored below 600 on the CEEB English Achievement Test and/or below 530 on the SAT Math, and if you have not taken advanced placement calculus. For more information, contact the Freshman Summer Program Office in 2235 Campbell Hall (206-1585).

Transfer Summer Program (TSP)

The Transfer Summer Program is an intensive seven-week instructional program to improve the composition and general learning skills of new transfer students. Its goal is to prepare such students for UCLA through approximately 16 hours per week of classroom instruction, tutorial assistance, and workshops.

The Transfer Summer Program consists of combinations of a composition course and an upper division course which, if completed successfully, yield credit toward your bachelor's degree. You have the option of residence hall living (strongly recommended) or commuter status; cultural, social, recreational activities, and counseling are available to help you adjust to UCLA. Academic advising sessions will help you plan — and guarantee your enrollment in — Fall Quarter classes. The application fee is $10; if you have applied and are eligible for financial aid, there are no additional registration or tuition fees. (If you are not financial aid-eligible, you will have to pay a portion of the program's expense.) Other program costs are relatively low.

For details on TSP, contact the Transfer Summer Program Office in 2235 Campbell Hall (206-1586).

Academic Advancement Program

The Academic Advancement Program (AAP), formerly EOP, is the primary student affirmative action program at UCLA. AAP provides academic and personal support each year to approximately 4,600 students from low-income families and ethnic groups historically underrepresented at UCLA. Its major goals are to help these students adjust to the University and to increase the likelihood of their college graduation. Among its services are peer counseling for all new students, professional/academic/personal counseling, individual and group tutoring sessions, and seminars to prepare students for graduate school entrance examinations.

Applicants must meet regular University requirements for undergraduate admission and must be U.S. citizens or permanent residents who are also residents of California (American Indians excepted). For more information, contact the AAP Office in 1209 Campbell Hall (825-1481).

ARC Math/Sciences Tutorials

The Academic Resources Center Math/Sciences Tutorials (3973 Math Sciences) provide an organized by-appointment tutorial program for most math courses between Mathematics A and 32A, Chemistry 2, 11A, and 11B, Physics 6A, 6B, 8A, 8B, and 10, and Biology 2 and 5. 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 four weeks of the quarter; early registration is advised.

For math and science courses not served by the appointment tutorials and for additional help with specific problems, the Math/Sciences Tutorials also coordinate a drop-in tutorial facility in 3970 and 3974 Math Sciences.

ARC Composition Tutoring Lab and ESL Service Courses Tutorials

The Academic Resources Center Composition Tutoring Lab, developed in collaboration with the UCLA Writing Programs, provides individual assistance to students enrolled in English A, B, and 3 and, as available, to students writing for other UCLA courses. The lab is staffed by trained undergraduate peer tutors who have shown outstanding ability in advanced composition courses.

The ARC ESL Service Courses Tutorials assist nonnative-speaking students with English grammar, idiom, pronunciation, and listening comprehension. Priority is given to students enrolled in English (ESL) 33A, 33B, and 33C, and other ESL courses. The tutors are all graduate students in the ESL Section.

Both of these services are located in 339 Kinsey Hall. For tutoring appointments and further information, call 206-1491.

Learning Resource Centers (LRC)

The Learning Resource Centers include the Language Laboratory, the Multimedia Learning Laboratory, and the Instructional Media Library. All of these resources rely on the new information technologies to help you improve academic skills, augment traditional classroom instruction, and enrich your educational experiences. For general information, contact the LRC Office in 46 Powell Library (206-1248).

Language Laboratory — Students enrolled in foreign language classes are assigned by faculty to practice pronunciation and comprehension skills in the laboratory, 190 Powell Library (206-8855). Audiotape programs which accompany specific texts used in classes and listening, recording, and monitoring equipment are available.

Multimedia Learning Laboratory — Today many academic programs in the sciences, arts, and humanities depend on materials that are available only in video or audio formats or as computer software. You can use these resources at your own pace in the Multimedia Learning Laboratory located in 290 Powell Library (206-1211). The noncirculating collection includes materials placed on reserve by faculty and assigned for independent study, as well as materials designed to help you develop a wide range of learning skills.

Instructional Media Library maintains a large collection of educational films, videotapes, and slide/tape modules which it lends to regularly scheduled UCLA classes and campus organizations. Reference books and catalogs from educational and feature film distributors are avaiable. The library staff offers assistance in researching films on any subject and obtaining materials from outside sources. Two preview rooms, located in 46 Powell Library, are available by appointment (825-0755).

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 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 or school or department.

Academic Excellence

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

Dean's Honors List

The Colleges of Letters and Science and Fine Arts, and the School of Engineering and Applied Science, all award Dean's Honors to deserving students each quarter. 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 with the Bachelor's Degree

Your college or school awards graduation honors according to your overall GPA at the beginning of your last quarter of academic work or at graduation. To be eligible, you must have completed at least 90 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 all campus units except the School of Engineering and Applied 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 may nominate exceptionally promising juniors and seniors as 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 quarter of your freshman year, or a cumulative 3.5 GPA at the end of the second and/or third quarters. Invitations are issued in Winter Quarter, and initiation is held during Spring Quarter. For more information, contact the Dean of Students Office, 2224 Murphy Hall (825-3871).

Mortar Board

Mortar Board is a national honor society for college seniors which recognizes scholastic ability (a 3.0 GPA is required), outstanding and continual leadership, and dedicated service to the community. Membership applications are available in the Dean of Students Office, 2224 Murphy Hall (825-3871), during Winter Quarter.

Phi Beta Kappa

Phi Beta Kappa is a national honorary society in the humanities, 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 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 the Phi Beta Kappa Office, Division of Honors, A311 Murphy Hall (825-0192).

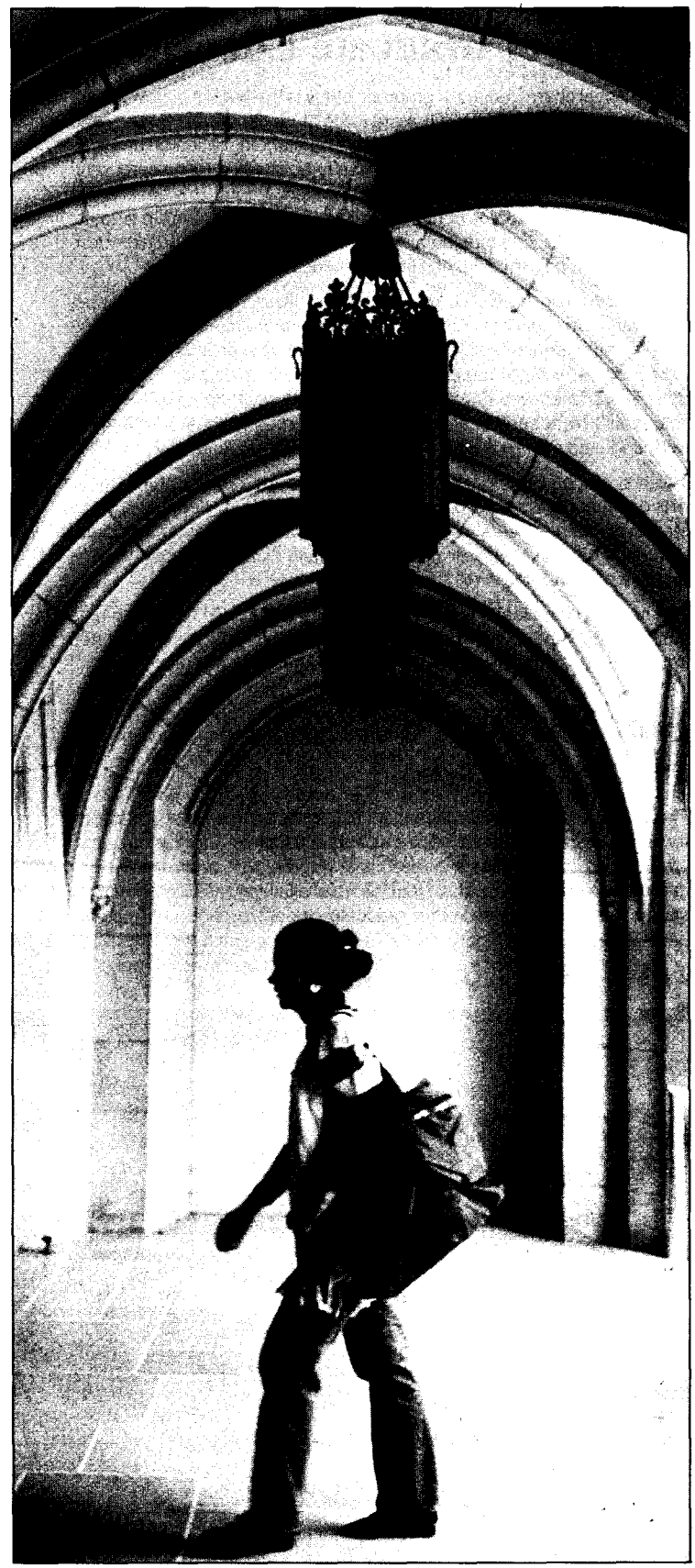
Outstanding Senior Award

The Outstanding Senior Award offers recognition to graduating seniors who have demonstrated scholastic excellence, creativity in the department, and service to the University and community. Nominations are accepted during Fall Quarter, and awards are presented at the annual Alumni Awards Ceremony in June. For more information, contact the UCLA Alumni Association in the James E. West Center, 325 Westwood Plaza (825-3901).

Graduate Study

Victoria A. Fromkin
Dean of the Graduate Division,
Vice Chancellor — Graduate Programs

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, 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 classroom, 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 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 first stage of graduate education leads to 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. The master's program is intended to develop your mastery of a field and prepare you for the practice of a profession.

The second stage leads to a doctoral degree (Ph.D., Ed.D., etc.) and 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 certain graduate professional degree programs. It oversees graduate recruitment and admissions, fellowships, teaching and research assistantships 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, it establishes policy for graduate education at UCLA, including requirements, standards for admission, and graduate degree programs. It also makes recommendations regarding fellowships and apprentice personnel. A major responsibility of the Graduate Council is the periodic review and evaluation of all graduate programs.

The Graduate Adviser

After admission to a department, program, or school, each graduate student is assigned a graduate adviser who approves Official Study Lists and assists the student in program planning and completing degree requirements. The graduate adviser is available for counseling whenever needed, but departments usually require at least one student consultation each quarter. 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)

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 Control 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 monthly GSA newsletter, *Grad Voice*. The GSA Office is located in 301 Kerckhoff Hall (206-8512).

Graduate Admission

Information:
Graduate Admissions Office
1247 Murphy Hall
(213) 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. 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, colleges, 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 *Application for Graduate Admission, Fellowship and Financial Aid* to the Graduate Division. 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 in the Graduate Admissions Office by the following dates:

October 1, 1986, for Winter Quarter 1987
December 31, 1986, for Spring Quarter 1987
January 14, 1987, for Fall Quarter 1987

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 $35 nonrefundable application fee, are specified in the application packet. Unless the $35 fee was paid at another UC campus, applications received without the fee will not be processed. 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.**

1986-87 GRE Test Dates

October 11, 1986	February 7, 1987
December 13, 1986	April 11, 1987
June 6, 1987 (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.

International Applicants

Applicants who have credentials from universities and colleges in foreign countries should submit applications at least two months before the dates listed above. International applicants should have an academic degree or professional title 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 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 and pass 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, even if you have received transfer credit for an acceptable college-level course in English composition at another institution. Depending on your ESLPE results, you may have to complete one

(continued on page 44)

Graduate Majors and Degrees

MAJORS	DEGREES	OTHER
African Area Studies	M.A.	
Afro-American Studies	M.A.	
American Indian Studies	M.A.	
Anatomy	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/Urban Design Program	M.Arch. I, M.Arch. II, M.A. (Architecture/Urban Planning), Ph.D. (Architecture)	
Urban Planning Program	M.A. (Architecture/Urban Planning), Ph.D. (Urban Planning)	
Art, Design, and Art History		
Art (Art, Design)	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.	
Dance/Movement Therapy	M.A.	
Dentistry	D.D.S.	Postgraduate Certificate Programs
Oral Biology	M.S.	
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, Severely Handicapped Specialist
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.	

MAJORS	DEGREES	OTHER
English	M.A., C.Phil., Ph.D.	
English as a Second Language		
Teaching English as a Second Language	M.A.	Certificate Program
Environmental Science and Engineering	D.Env.	
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.	
Individual Ph.D. Program	Ph.D.	
Indo-European Studies	C.Phil., Ph.D.	
Islamic Studies	M.A., C.Phil., Ph.D.	
Italian	M.A., C.Phil., Ph.D.	
Kinesiology	M.S., 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	M.A., Ph.D.	
Microbiology and Immunology	M.S.*, Ph.D.	
Molecular Biology	Ph.D.	
Music	M.A., M.F.A. (Performance Practices), C.Phil., Ph.D.	
Near Eastern Languages and Cultures	M.A., C.Phil., Ph.D.	
Neuroscience	Ph.D.	
Nursing	M.N.	
Pathology		
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.	
Physiology	M.S.*, Ph.D.	
Political Science	M.A., C.Phil., Ph.D.	
Psychiatry and Biobehavioral Sciences	—	Certificate Program in Clinical Psychology Internship
Social Psychiatry	M.S.P. (not admitting new students at this time)	
Psychology	M.A.*, C.Phil., Ph.D.	
Public Health	M.P.H., M.S., Dr.P.H., Ph.D.	
Biostatistics	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., D.S.W.	
Sociology	M.A., C.Phil., Ph.D.	
Spanish and Portuguese		
Hispanic Languages and Literatures	C.Phil., Ph.D.	
Portuguese	M.A.	
Spanish	M.A.	
Theater, Film, and Television		
Theater Arts (Motion Picture/ Television, Theater)	M.A., M.F.A., C.Phil., Ph.D.	

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

or more courses in the English (ESL) 33A through 33C series, beginning in your first quarter in residence at UCLA. These courses must be passed with a grade of C or better. 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 ESL courses. If you do not pass 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 — 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. Teachers with a master's degree who wish some refresher study, or international students on a year's stay in the United States, may wish to apply in this manner. Requirements for admission are the same as those for degree programs.

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, 1254 Murphy Hall (100 Dodd Hall after October 1, 1986). Also refer to the sections on "Academic Residence" and "Transfer of Credit" later in this chapter.

Renewal of Application

An offer of admission is valid for a specific quarter only. If you were not admitted, or failed to register in the quarter for which you were first accepted, you should file a Renewal of Application form for admission to a later quarter. Forms are available from the departments and should be submitted to the Graduate Admissions Office, 1247 Murphy Hall. Filing dates are the same as those for new applications. Forms should be accompanied by official transcripts, in duplicate, of any graduate work completed since the former application and by a $35 application fee.

You may file only one Renewal of Application without the $35 fee. Acceptance for admission at any earlier date does not guarantee approval of the renewal. Since application records are kept no longer than two years, you may apply for admission after this period only by completing a new application and providing all necessary documents.

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 quarter 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 Readmission. Forms are available from the departments and should be submitted to the Graduate Admissions Office, 1247 Murphy Hall. The following materials must accompany the Application for Readmission:

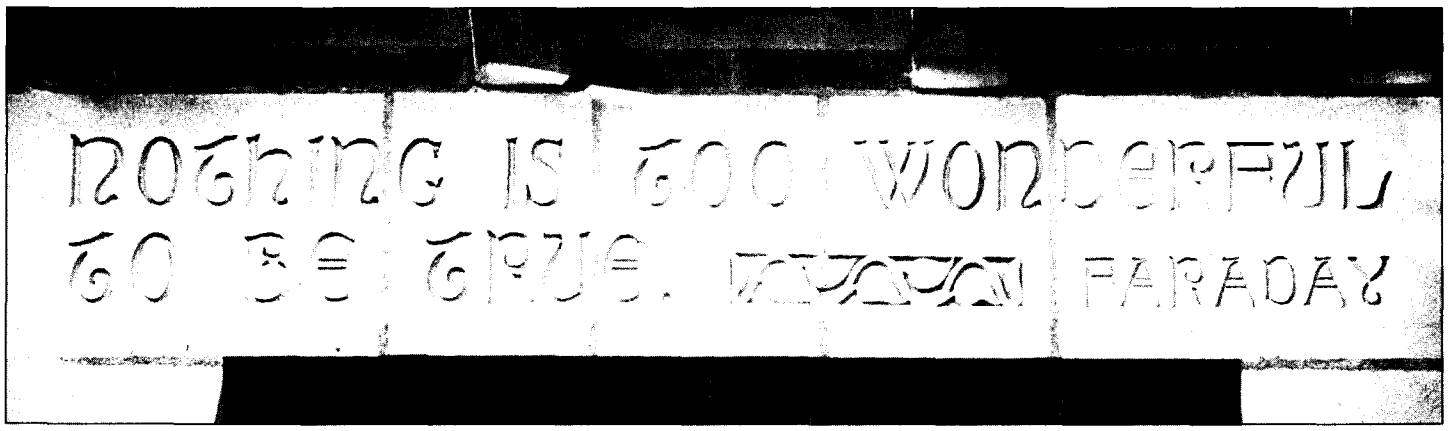
(1) A check or money order for $35 (nonrefundable) made payable to The Regents of the University of California.

(2) Official transcripts of record, in duplicate, for all graduate work completed since your last registration at UCLA. If you are returning to UCLA after more than 10 years, submit transcripts of all academic work previously submitted.

(3) 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 Readmission.)

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.



Registration and Enrollment

Information:
Registrar's Office
1134 Murphy Hall
(213) 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 quarter. To obtain a copy by mail, write to ASUCLA Students' Store, 308 Westwood Plaza, Los Angeles, CA 90024, Attn: Mail Out. Include a check or money order for $2 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 for requesting enrollment in classes. You must complete both processes by the established deadlines to be officially registered and enrolled for the quarter.

Registration may be accomplished by mail or in person. You may use a combination of both processes to pay fees and enroll in classes, but **all eligible students are encouraged to register by mail or use the Cashier's Drop Slot.** It will save you the time and trouble of waiting in line.

Last Mailing Dates

(Tentative only; refer to the *Schedule of Classes* for firm dates)

To Register (Pay Fees) by Mail:
August 29 for Fall Quarter 1986
December 12 for Winter Quarter 1987
March 13 for Spring Quarter 1987

To Enroll in Classes by Mail:
August 29 for Fall Quarter 1986
November 19 for Winter Quarter 1987
February 27 for Spring Quarter 1987

Enrollment in Classes

Enrollment requests are processed from the completed Study List Request portion of the Registration Form. To be enrolled for credit, you must complete the request, obtain your adviser's signature approval, and file it with your major department by the tenth day of classes (there is a $50 fee for late filing of the Study List).

You are guaranteed enrollment in courses in your major department provided that department is coded correctly on your Study List Request. If you have recently changed majors and your Study List Request is incorrect, you need proof that the Graduate Division has approved the change. For guaranteed enrollment in restricted or possibly closed courses outside your major department, you must submit an approved Permission to Enroll form with the Study List Request.

You may enroll in classes in person on certain days preceding the beginning of classes each quarter. Hours are 8:30 a.m. to 5 p.m. on the following days:

Enrollment in Classes in Person

September 23-26 for Fall Quarter 1986
December 4-6 for Winter Quarter 1987
March 12-14 for Spring Quarter 1987

Change of Major

Continuing graduate students may petition for a change of major after discussing plans with — and obtaining the acceptance of — the new department. Forms for this purpose are available from, and should be filed with, the Graduate Division, Student and Academic Affairs Section, 1225 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 graduate courses (or 12 units) per quarter are considered the normal enrollment for graduate students. A minimum of eight units is required for full-time standing for all students, including teaching assistants, research assistants, and fellowship awardees.

Teaching and research assistants are required to take at least two courses per quarter, or the equivalent of eight units, throughout their appointments. Those assistants who take a leave of absence or withdraw, terminate their appointments. Course 375 for teaching assistants and independent studies at the 500 level may be included in reaching the eight-unit load.

Graduate students holding fellowships must be enrolled full-time students, both before and after advancement to candidacy. The two courses required per quarter 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 in the Office of Special Services/Veterans Affairs, A255 Murphy Hall.

Continuous Registration

Graduate students are normally required to register in all three quarters of each academic year, including the quarter 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 below), you are exempt from this requirement. You must be registered in order to use University facilities or to 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 quarter may register "in absentia" and pay one-half the registration fee, plus all other fees in full. Petitions for the reduced fee are available from the department and from the Graduate Fellowship and Assistantship Section, 1228 Murphy Hall.

Registration in the Final Quarter for the Award of the Degree

(1) You must register in the final quarter 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, or (d) participating in the In-Candidacy Fee Offset Grant Program and were not registered the quarter immediately preceding the quarter in which your dissertation is filed. 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 quarter, you may be eligible to pay the filing fee instead of registering (see below).

(3) If you were registered in the preceding quarter and have completed all degree requirements, including final examinations and filing your thesis/dissertation, during the interval between quarters 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 quarter.

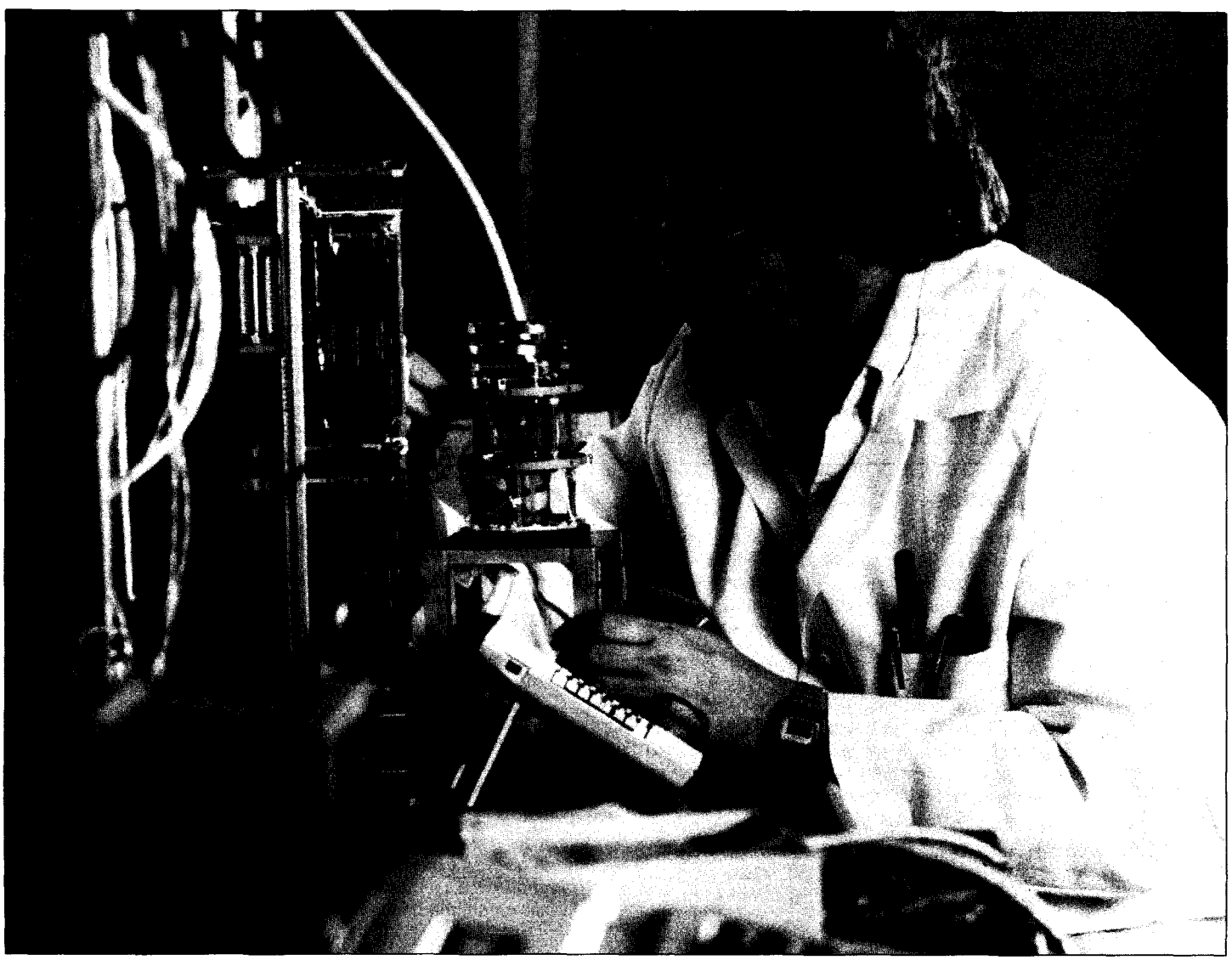
The Filing Fee

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 one-half the registration fee instead of registering and paying all required fees. Applications are available at the Graduate Division, Student and Academic Affairs Section, 1225 Murphy Hall. For eligibility conditions and further information on the filing fee and registration in the final quarter, please consult *Standards and Procedures for Graduate Study at UCLA,* available in 1225 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 form provided by their departments.

All new and reentering international students must obtain clearance in person at the Student Health Service by completing and returning a Health Evaluation form, by verifying adequate health insurance coverage, and by establishing absence of active tuberculosis. In addition, all international students must obtain an annual health insurance clearance each fall at the SHS Insurance Office. For information, call 825-4073.



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 $1,362 per quarter (for a full definition of residence and nonresidence, see the Appendix of this catalog).

At the time of registration each quarter, all graduate students (except Law School students*) must pay the following fixed fees. **Fees for Fall Quarter 1986 are current as of publication date but are subject to change without notice by The Regents.**

Quarterly Expenses, Fall 1986

University registration fee	$ 174
Education fee	261
Ackerman Student Union fee	4
Graduate Students Association (GSA) fee	5
Wooden Recreation Center fee	5
Total for California residents	**$ 449**
Nonresident tuition fee	$1,362
Total for nonresidents	**$1,811**

*Students in the School of Law should refer to that school's announcement for explanation of fees per semester.

Other Fees

Miscellaneous fees charged to UCLA graduate students include a $50 charge for late payment of registration fees or late filing of the Study List (after the tenth day of classes); $25 for advancement to doctoral candidacy; and $5 or less 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 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 refer to the *Schedule of Classes.*

Nonresident Tuition Waivers

A limited number of nonresident tuition waivers are awarded each year to graduate students with distinguished academic records. Details of eligibility are available in your department or the Graduate Fellowship and Assistantship Section, 1228 Murphy Hall.

Lapse of Status

Your status may lapse if you fail to settle financial obligations when due (or make satisfactory arrangements with the Main Cashier if payment cannot be made) or if you fail to respond to official University notices.

With lapsed status you are not entitled to any University services except assistance toward reinstatement. After you have satisfied the obligation, a petition for reinstatement must be approved by the office recommending the lapse of status and filed with the Registrar's Office, 1111 Murphy Hall, with a $10 reinstatement fee.

Estimated Annual Budgets for California Residents

	Single, Commuter, Living at Parents' Home	Single, Living at UCLA Residence Hall, Co-Op, Sorority, or Fraternity	Single, Living in Off-Campus Apartment or House	Married, Living in UCLA Family Student Housing	Married, Living in Off-Campus Apartment or House
University Fees	$1,346	$1,346	$1,346	$1,346	$1,346
Books and Educational Supplies	675	675	675	675	675
Food and Rent	1,180	2,960	5,400	6,500	8,200
Transportation	600	100	400	400	400
Personal	949	1,549*	949	2,299	2,299
Total Budget	**$4,750**	**$6,630**	**$8,770**	**$11,220**	**$12,920**

*Includes $100 for extra meals during breaks.

For more information on housing, see Chapter 1 or contact the UCLA Community Housing Office in 100 Sproul Hall (825-4491).

Living Expenses

Printed on the previous page are the estimated yearly budgets for graduate California residents. Nonresidents must add the $4,086 annual tuition fee to their total expenses for an accurate estimate. Expenses cover the three regular session quarters of the 1986-87 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.)

Financial Support

Information:
Graduate Fellowship and Assistantship Section
1228 Murphy Hall
(213) 825-3521

As a major center for graduate study, UCLA offers its qualified graduate students substantial support through several types of financial assistance. Awards are based on either academic merit or financial need, but the two types are not mutually exclusive. You are strongly urged to apply in all categories for which you may qualify.

Entering graduate students interested in University-administered awards should complete the *Application for Graduate Admission, Fellowship and Financial Aid.* Readmitted students should request the Graduate Application for Readmission form, and continuing graduate students should complete the Fellowship and Assistantship Application for Continuing Students. Completed applications must be returned by **January 15.** (Some departments have earlier deadlines; consult the application packet for details.)

Graduate Student Support, a booklet describing the full range of financial assistance available, is published annually for continuing students by the Graduate Fellowship and Assistantship Section. Contact your department for more detailed information.

Awards Based on Academic Merit

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.

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 quarter in the form of an interest-free advance loan check. Interested students should apply to their departments.) **Research Assistantships** give students experience working on faculty-supervised research projects.

Fellowships and Grants

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

In-Candidacy Fee Offset Grant Program

The In-Candidacy Fee Offset Grant Program pays the education fee for eligible doctoral students who have been advanced to candidacy. This program is described in detail in *Standards and Procedures for Graduate Study at UCLA,* available in 1225 Murphy Hall or in individual departments.

Graduate Affirmative Action Awards

These programs were established to increase the graduate enrollment of students from groups which, as a result of societal inequities, have been traditionally underrepresented in graduate education. These include American Indians, blacks, Chicanos, Filipinos, and Puerto Ricans. In addition, women are eligible in fields where they are underrepresented.

There is one need-based financial aid program (GAP), as well as several merit-based fellowship programs. Students are encouraged to apply for both need- and merit-based assistance; fellowship awards will reduce the size of financial aid support. All applicants for merit-based awards must be U.S. citizens. For more information on these programs, contact the Graduate Affirmative Affairs Office, 1242 Murphy Hall (825-2780).

(1) **Graduate Advancement Program (GAP)** — Awards are made on the basis of need as demonstrated by normal University financial aid standards and must meet GAP criteria. These awards differ from ordinary financial aid in that grants may be slightly larger and work-study awards do not require matching funds by employers.

(2) **Graduate and Professional Opportunity Program (G*POP)** — For 1986-87 awards provide stipends and fees to students in the fields of management, urban planning, biology, psychology, social welfare, and engineering. Continuation of this program is contingent on annual federal support.

(3) **Graduate Opportunity Fellowship Program (GOFP)** — Merit-based fellowships provide stipends and registration fees to students from groups traditionally underrepresented in graduate programs (e.g., women are eligible for fellowships in such fields as engineering and physical science).

(4) **Dorothy Danforth Compton Fellowship** — UCLA is one of 10 universities selected to receive a grant from the Danforth Foundation to support outstanding black, Mexican American, American Indian, and Puerto Rican students committed to careers in college and university teaching. A limited number of fellowships are awarded to Ph.D. students in the humanities, social sciences, health sciences, and fine arts. Applicants must be in departments offering a doctoral program having teaching or research provisions.

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 awards include educational grants, low-interest loans, and work-study employment. Students are usually awarded a financial aid "package" which is a combination of these forms of assistance. Further information is available at the Financial Aid Office, A107 Murphy Hall.

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 principally by means of the qualifying and comprehensive examinations. Achievement in research is judged by the merits of the thesis or dissertation.

The Master's Degree

University Minimum Standards

The requirements described here 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. You are advised to consult the appropriate school announcement or your graduate adviser.

Academic Residence

The minimum residence requirement consists of three academic quarters in graduate standing at the University of California, including at least two quarters at UCLA. Academic residency is established by successfully completing at least one graduate or upper division course (four units) during a quarter.

You may earn one quarter 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.

University Minimum Standards For Advanced Degrees*

REQUIREMENT	MASTER'S DEGREE	DOCTORAL DEGREE
ACADEMIC RESIDENCE	One year (three quarters) in graduate standing at University of California, two quarters at UCLA.	Two years (six quarters) in graduate standing at University of California, including three consecutive quarters 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 quarter 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 $25 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. Please refer to departmental listings under the appropriate college or school chapter or consult with your graduate adviser for details.
** If the master's degree was earned at UCLA, one year of residence will have been satisfied.

Courses and Grades

The master's program at UCLA consists of at least nine graduate and upper division courses (or any number of fractional courses totaling 36 units) completed in graduate standing, of which at least five must be graduate. To maintain satisfactory progress toward the master's degree, UCLA requires at least a B average in all courses taken in graduate standing at the University and in all courses applied toward the master's degree.

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 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 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.

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 graduate adviser about applying Summer Sessions courses to your graduate program.

From University Extension — University Extension courses (100 series) taken *before* July 1, 1969, may apply on approval of the department and dean of the Graduate Division. No more than two such courses (eight units) may be applied.

Extension courses taken *after* July 1, 1969, can be applied only if they were **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 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.

Foreign Language Requirements

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

Depending on your department's regulations, you may fulfill foreign language requirements either by passing the Educational Testing Service (ETS) Graduate School Tests in French, German, Russian, or Spanish or (in languages not offered by ETS) by passing examinations given by UCLA language departments. You may register for the ETS examination at the University Extension Cashier's Office, 10995 Le Conte Avenue. UCLA enrollment is not required. Consult University 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, refer to *Standards and Procedures for Graduate Study at UCLA* or see your graduate adviser.

Advancement to Candidacy

When you have completed approximately half the program for the master's degree (usually at least two quarters), you should formally apply for advancement to candidacy. Application forms are available from your department or the Graduate Division, Student and Academic Affairs Section (1225 Murphy Hall), and must be filed in your major department no later than the second week of the quarter 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 quarter in which you plan to receive the degree is by petition only.

Plans of Study

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 adviser 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, students under Plan I must submit a thesis reporting on the 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 *Standards and Procedures for Graduate Study at UCLA* 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. For guidance in the final preparation of the thesis, you may:

(1) Consult the Theses and Dissertations Adviser, Office of the University Archivist, 141 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 quarter (see the Calendar at the beginning of this catalog).

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 approximately two weeks before the degree is to be awarded. Deadlines for this academic year are:

December 1 for Fall Quarter 1986
March 9 for Winter Quarter 1987
June 1 for Spring Quarter 1987

Master's Comprehensive Examination (Plan II)

Following advancement to candidacy, 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 form (written, oral, or both) is available from your graduate adviser.

The 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 below). Four quarters in academic residence, three of them (usually the last three) in continuous residence at UCLA, are required. (Also refer to "Academic Residence" under doctoral programs below.)

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 *Standards and Procedures for Graduate Study at UCLA,* available in 1225 Murphy Hall and in individual departments.

The Doctoral Degree

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 are the University's minimum standards for doctoral degrees. Each department may adopt additional requirements according to the demands of the field of study. Consult your graduate adviser for details.

Academic Residence

The minimum residence requirement for the doctoral degree is two years (six quarters) 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 is established by successfully completing one graduate or upper division course (four units) during a quarter.

You may earn one quarter of residence for summer study in either of these ways: (1) enroll in two *consecutive* 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.

Program of Study and Scholarship

Programs of study for doctoral degrees are more individualized than those for master's degrees, permitting a higher degree of specialization. The University does not specify course requirements for doctoral programs. However, individual programs have coursework or other requirements which must be completed before taking the University Oral Qualifying Examination. You will determine your course of study in consultation with the adviser and guidance committee who supervise your activities until the doctoral committee is appointed.

Satisfactory progress toward the doctoral degree requires that you maintain at least a B average in all courses taken in graduate standing on any University of California campus.

Foreign Language Requirements

Most departments require doctoral 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 Oral Qualifying Examination. See "Foreign Language Requirements" under the Master's Degree for information on fulfilling these requirements.

Examinations Before Advancement to Candidacy

A doctoral program generally involves two stages, separated by advancement to candidacy. The first stage is spent in fulfilling 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 five faculty members nominated by your department, is appointed by the dean of the Graduate Division (consult *Standards and Procedures for Graduate Study at UCLA* 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

You are eligible for advancement to doctoral candidacy after passing the University Oral Qualifying Examination with no more than one negative vote, completing four quarters 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 $25 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.

Writing the Dissertation

Once the doctoral committee approves the subject for your dissertation, the second or 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.

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.

Filing the Dissertation

You are responsible for following instructions on the preparation of the dissertation and for observing filing deadlines. For guidance 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, 141 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 quarter (see the Calendar at the beginning of this catalog).

When your final dissertation has been approved by the doctoral committee 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 approximately two weeks before the degree is to be awarded. Deadlines for this academic year are:

December 1 for Fall Quarter 1986
March 9 for Winter Quarter 1987
June 1 for Spring Quarter 1987

Individual Ph.D. Program

Although the University of California offers an extraordinary range of established doctoral programs, these cannot meet the needs and specific career goals of every student. The Individual Ph.D. Program therefore makes it possible for superior students to design their own coherent programs of interdisciplinary studies leading to the Ph.D. degree.

To qualify for this program, you must have been a full-time graduate student at UCLA for at least one year, making satisfactory progress toward a doctoral degree. After at least three faculty members have agreed to sponsor your proposal for an individual program of study, you may submit it to the Graduate Council for review. University minimum standards regarding courses, scholarship, residence, and dissertation apply. Further information on this program is available in the Graduate Division, Student and Academic Affairs Section, 1225 Murphy Hall.

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 26 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.

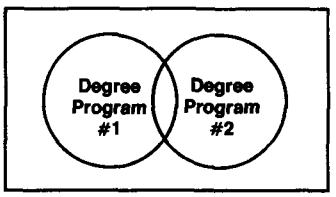
Interdepartmental degree programs which currently lead to advanced degrees are listed below. All are described more fully in Chapter 5 under the College of Letters and Science, with the exceptions of Environmental Science and Engineering which is in the School of Public Health and Neuroscience which is in the School of Medicine. 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.)

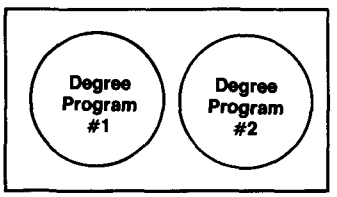
Concurrent and Articulated Degree Programs

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:

Architecture and Urban Planning, M.A. — Law, J.D.
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. — Architecture and Urban Planning, M.A.
Management, M.B.A. — Architecture and 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. — Public Health, M.P.H.

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. — Theater, Film, and Television, M.F.A. in Motion Picture/Television
Latin American Studies, Interdepartmental M.A. — Education, M.Ed. in Curriculum
Latin American Studies, Interdepartmental M.A. — Engineering and Applied Science, 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 programs.

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.

If you have completed at least one quarter of graduate study at UCLA 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 in the Graduate Division, Student and Academic Affairs Section, should be completed before the start of the term in which the course is offered.

Intercampus Exchange Program

If you have completed one quarter of graduate study at any campus of the University, 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 other privileges at the host campus. Grades are transferred to your home campus and entered on your official record.

Applications are available in the Graduate Division, Student and Academic Affairs Section, 1225 Murphy Hall, and should be filed at least four weeks before the beginning of the quarter in which you expect to enter the program.

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

Postdoctoral 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. Postdoctoral Scholar standing, which does not lead to any degree, is limited to a maximum of three years and must begin within three years after the doctoral degree is awarded. 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 for a limited time, normally no more than one year. Visiting Scholars are distinguished from Postdoctoral Scholars and academic appointees in that they usually have adequate support funds from sources outside the University.

Further information on both Postdoctoral and Visiting Scholars is available in the Fellowship and Assistantship Section, 1228 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 quarters 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.

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 Instruction and Degree Requirements. 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 a student or group of students should be made at the dean of Students Office, 2224 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 about a violation of University policy regarding the conduct of one or more faculty members should be made to the Charges Committee of the Academic Senate, 3125 Murphy Hall.

Academics

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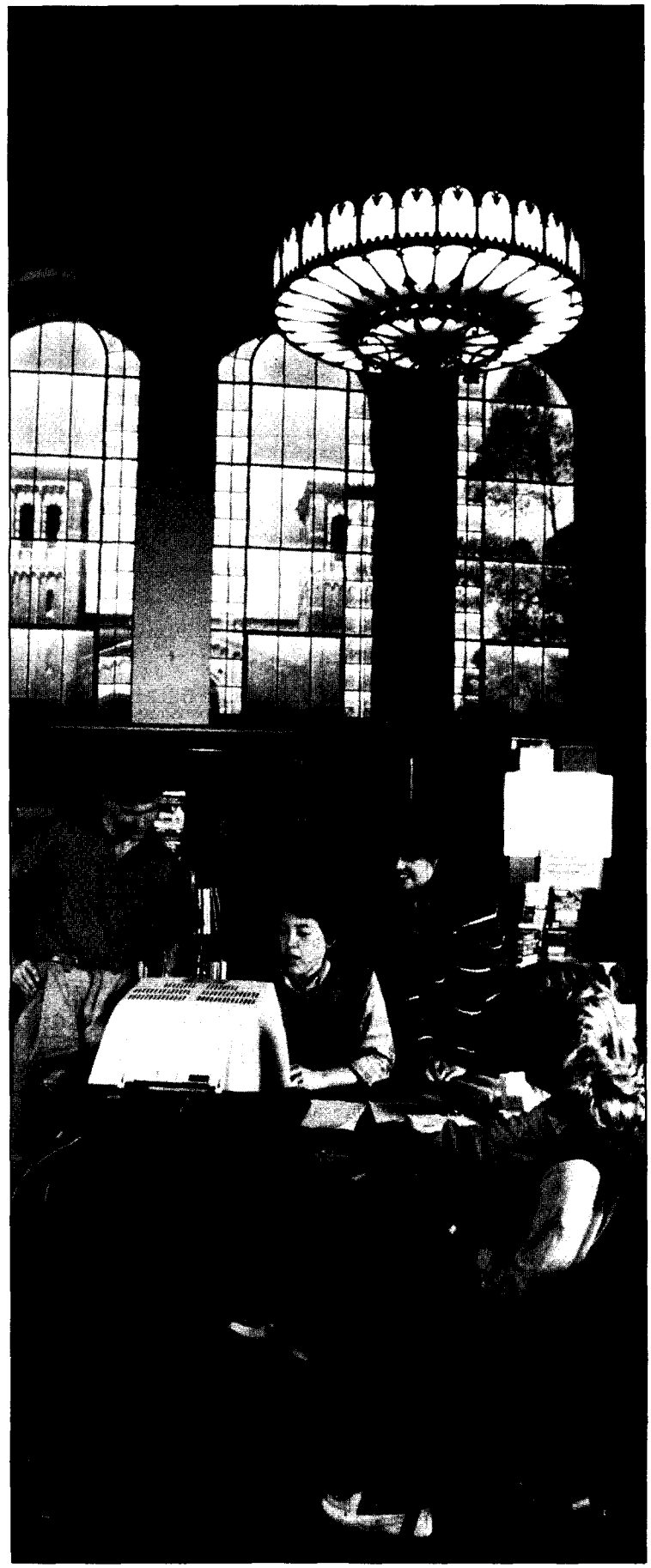


Units and Grading Policy

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 = 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 Undergraduates — The grade A may be modified by a minus (−) suffix, and the grades B, C, and D by a plus (+) or minus (−) suffix, to either raise or lower your grade-point average. 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 quarter 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 quarter 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, and IP, 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.)

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. 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 quarter, 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 University Extension). Individual departments may require higher standards of achievement.

Only grades earned in regular session or Summer Sessions at any UC campus are computed in your UCLA grade-point average. Grades earned at another institution or in UCLA Extension 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 coursework for the bachelor's degree at UCLA. A maximum of 208 units is allowed in the College of Fine Arts and the School of Nursing; in the College of Letters and Science a maximum of 216 units (228 for double majors and special programs) is allowed. (If you have credit for English 1 taken Fall Quarter 1979 through Summer Quarter 1984 at UCLA, the minimum and maximum unit requirements are increased by two units: 182 for the minimum and 210, 218, or 230 for the maximum.) In the School of Engineering and Applied Science, the minimum units allowed are between 185 and 201 (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 quarter on a P/NP basis (two courses if you have not elected the P/NP option in the preceding quarter). 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 fourth week of instruction (see the Calendar at the beginning of this catalog for exact dates); changes after the first two weeks of class require a petition ($3), available from your college or school.

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 quarter, 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 Calendar at the beginning of this catalog); changes after the first two weeks of class require a petition ($3), available in the Graduate Division Office.

Certain graduate courses are offered only on a Satisfactory/Unsatisfactory basis and are designated SU in the *Schedule of Classes.*

Incomplete (I) Grades

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 responsibility 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 replace it with a passing grade and receive unit credit and grade points by satisfactorily completing the coursework as specified by the instructor. If the work is not completed by the end of the next full quarter in residence, the grade will lapse to an F, NP, or U as appropriate. Your college or school may extend this deadline in unusual cases.

Petitions for Removal of Incomplete Grade ($5) are available in your school or department office and should be filed no later than the sixth week of instruction in the next quarter of registration. (Note: Once an I grade is assigned, it remains on your transcript along with the passing grade you may later receive for the course.)

In Progress (IP) Grades

For certain courses extending over more than one quarter (identified by T1, T2, T3, or T4 in the *Schedule of Classes),* evaluation of student performance is deferred until the end of the final quarter of the course. Provisional grades of IP are assigned in the intervening quarter(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 Dean of Students Office 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 Extension) may be repeated only according to the following guidelines:

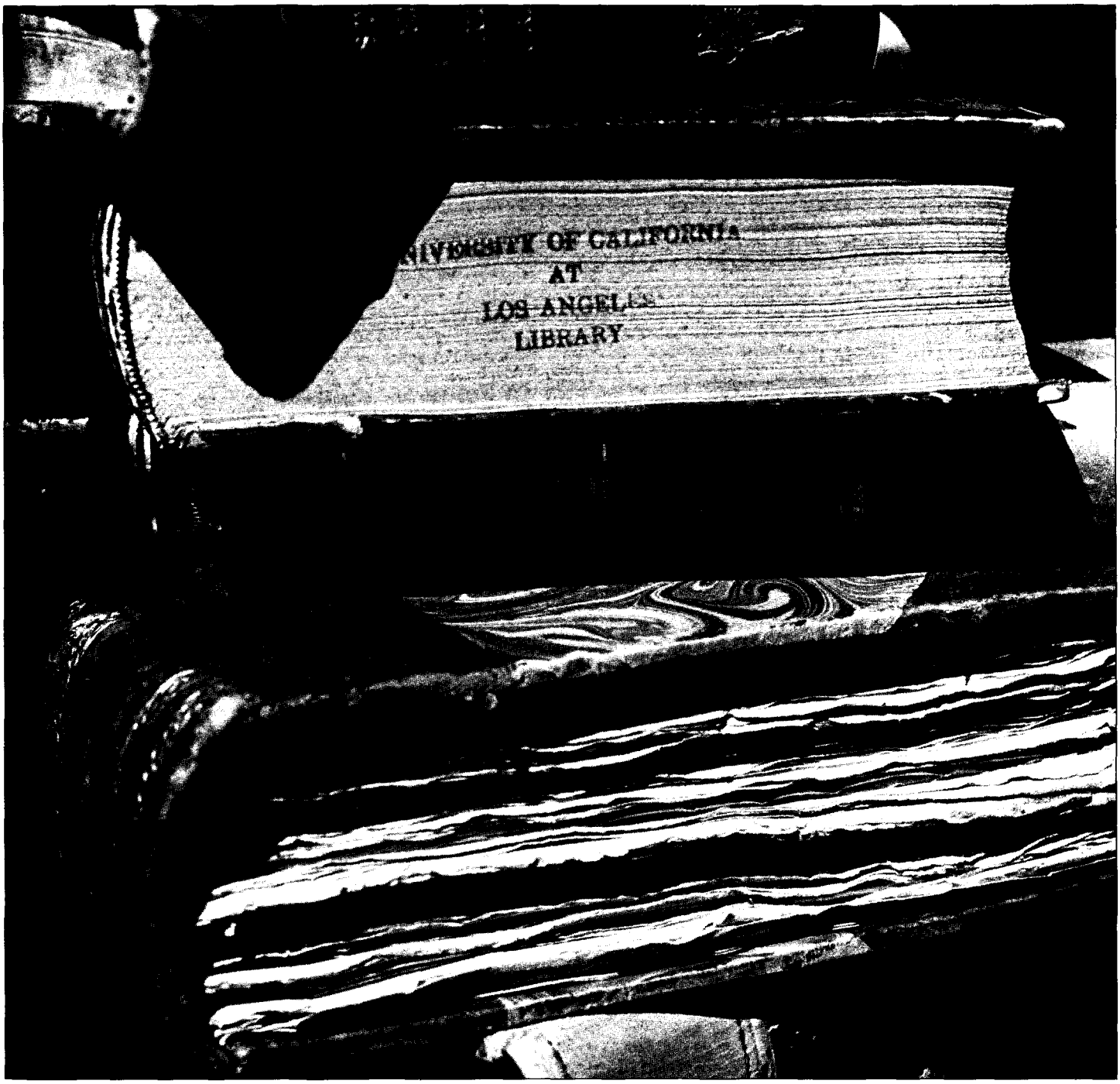
(1) To improve your grade-point average, you may repeat only those courses in which you receive a grade of C – or lower; NP or U grades may be repeated to gain unit credit. Courses in which you received a letter grade may not be repeated on a P/NP or S/U basis. Courses originally taken on a P/NP or S/U 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 was given, including repeated courses, will be used in computing the grade-point average.



Correction of Grades

All grades except I, IP, and DR 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. 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 ($5 each) 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).

Undergraduates

During the summer or during a quarter 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 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 also 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 will be computed into your 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 in the UARS Office.

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. 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 count community college courses beyond 105 quarter units, but you may still receive subject credit 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.)

Graduates

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 "The Master's Degree," 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.

Unofficial copies of student transcripts are issued several weeks after the end of each quarter (to learn your grades more quickly, leave postcards with your instructors). You should pick up your transcript and inform the Registrar immediately of any omissions or other discrepancies. Student copies are available at no charge from the Registrar's Office, 1111 Murphy Hall (students in the College of Fine Arts, the Schools of Nursing, Public Health, and Architecture and Urban Planning should pick up their transcripts in the respective college or school office). The Registrar verifies current quarter registration and full-time enrollment status for loan forms and other noncampus certifications, beginning on the first day of classes for undergraduates and the twelfth day of classes for graduates.

To have official transcripts sent to other schools or institutions, fill out a Request for Transcript of Record form at the Registrar's Office (transcripts cannot be issued without your signed request). The fee is $3 for the first copy and $1 for each additional transcript requested at the same time. Rush transcript service is available for an additional $5 charge. Transcripts become available within 48 hours after your last date of attendance. Transcripts of work completed elsewhere must be requested directly from the campus or institution concerned.

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, 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 most University services. 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 five days) will be issued without fee at the Registrar's Office, 1134 Murphy Hall. After the quarter begins, you may replace lost, destroyed, or mutilated cards at the Registrar's Office for a $3 fee. You must show proof of identity for verification or replacement cards.

UCLA Student I.D. Card

This card with photo is issued in your first term of registration and is valid with the current Reg Card as long as you remain in the same standing (graduate or undergraduate). It is required for most University services and student activities.

You will need a current Reg Card and other valid identification (driver's license, passport, or DMV I.D. card) to get your Student I.D. Card. Distribution hours and location will be announced in the registration issue of the *Daily Bruin*. You may replace lost or destroyed cards at 140 Kerckhoff Hall for a $3 fee.

Change of Name or Address

If you wish to change your name on your official record, fill out a name change form at the Registrar's Office in 1111 Murphy Hall. If you change your address, notify the Registrar's Office in 1134 Murphy Hall as soon as possible. Veterans receiving benefits must also notify the Office of Special Services/Veterans Affairs, A255 Murphy Hall.

Leaving UCLA

Intercampus Transfer

Undergraduate students registered in a regular session (or those previously registered who have not since registered at any other school) may apply for transfer to another campus of the University. There is a $35 nonrefundable fee, and deadlines are the same as admission application deadlines (see "Undergraduate Admission" in Chapter 2). Intercampus Transfer Applications and further information on requirements and procedures are available from the Registrar's Office, 1111 Murphy Hall.

Graduate students who wish to enroll as degree candidates at other UC campuses must apply for admission to those Graduate Divisions.

Absence During a Quarter

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 will be required to complete all coursework. If you cannot complete the work on time because your absence is late in the quarter or prolonged, you may request that the instructors assign an Incomplete grade (see "Incomplete Grades" earlier in this chapter).

One Quarter Absence for Undergraduates

Undergraduate students who have completed at least one quarter at UCLA and fail to register for a quarter may return to the University the following quarter and preregister and preenroll as continuing students. If you plan to attend another institution (including University Extension) during your absence, you should consult your college or school counselor before enrolling elsewhere. When you return to UCLA you must provide the Office of Undergraduate Admissions and Relations with Schools with a transcript of any courses taken (see "Concurrent Enrollment and Transfer of Credit" earlier in this chapter). If you are absent for two or more consecutive quarters, you are no longer considered a continuing student and must compete for readmission with all other applicants.

Leave of Absence for Graduate Students

Graduate students in good standing may be granted leaves of absence, normally for periods of one to three quarters, on approval from the appropriate department and the Graduate Division. Leaves, which may be extended up to five years at the discretion of your department, must be requested before the end of the second week of class. Request forms are available at the Graduate Division, Student and Academic Affairs Section, 1225 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. Leaves of absence as described here do not apply to undergraduates.

Graduate students who fail to register for a quarter 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 submitting a written notice, together with your current Registration Card and Student I.D. Card, to the Registrar's Office, 1134 Murphy Hall. A $10 service charge will be deducted from your fee refund.

Undergraduates who return to the University for the following quarter may preregister and preenroll as continuing students. If you are absent longer than one quarter, you must apply for readmission. If you cancel in your first quarter at UCLA, you must reapply for admission when you return.

Graduate students who cancel their registration and do not receive 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 quarter, you need to file a Notice of Withdrawal, available from your college, school, or Graduate Division office. Submit your Registration Card and Student I.D. 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, 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

Claims for refund must be presented within the academic (fiscal) year to which the claim is applicable. See the current *Schedule of Classes* for further details.

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 quarter 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.

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 quarter. 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 quarter following withdrawal, you may preregister and preenroll as a continuing student. If you return later than the following quarter, you must apply for readmission.

Graduate Students — If you do not complete a quarter, 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, two thirds 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 a multistep procedure which involves your participation.

(1) The **Degree Candidacy** portion of your Registration Form must be completed and filed when you are a junior (minimum 90 quarter units earned) to let the Registrar's Office know when you intend to graduate. The "degree expected term" indicated on the form must be the same as the term in which you wish to graduate in order for your degree progress to be audited by the Registrar's Office. You cannot graduate without such an audit.

(2) **Degree Checks** are conducted by your school or college and the Registrar's Office to inform you of degree requirements remaining to be satisfied. If you have filed the Degree Candidacy portion of your Registration Form, you should receive your first degree check ("Status in Reference to the BA/BS Degree") about three quarters before you graduate and an updated one each subsequent quarter. Consult your college or school, or the Registrar's Office, 1111 Murphy Hall, if you have any questions or problems.

(3) **Announcement of Candidacy** is posted on the Registrar's bulletin board about four weeks into the quarter. Although this is not a guarantee of graduation, your name should appear on the list posted during your final quarter. If not, inform the degree clerk at 1111 Murphy Hall.

(4) **Important Degree Notice** is mailed to you only if your records indicate you will not have satisfied all degree requirements by the end of your last quarter. If you receive such a notice, contact your degree clerk as soon as possible for further information and instructions.

(5) **Certificate of Completion** is official proof that you have graduated. It is sent to you four to five weeks after your final quarter ends if you have successfully completed all courses that quarter and met all degree requirements.

Graduate Students

Candidates for both master's and doctoral degrees must 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. A **Certificate of Completion,** certifying the award of the degree, is issued to all students four to five weeks after the end of the quarter in which all degree requirements are met. For full details on degree requirements and procedures for graduate students, see Chapter 3 on Graduate Study.

Degree Date

Degrees are awarded at the end of each quarter (Fall, Winter, Spring) and at the end of the second Summer Session. Refer to University calendars for the actual date of the final day in each quarter or Summer Session.

Diplomas

Diplomas for both undergraduates and graduate students are not distributed at Commencement but become available six to eight weeks after graduation. The Registrar's Office will notify you by mail when your diploma is ready. If you wish, the diploma can be sent to you by certified mail at a cost of $3 ($6 outside the U.S.). There is no diploma fee, although if the original is lost or stolen, there is a $25 charge for a duplicate diploma.

Commencement

Commencement exercises honoring candidates for undergraduate and graduate degrees will be held June 14. Students who have earned degrees in Summer Sessions 1986 or any quarter during the 1986-87 academic year are welcome to participate.

On Commencement Day at 10 a.m. all students, faculty, and guests gather in Drake Stadium for the conferring of degrees. This colorful pageant features an address by the Chancellor, student speakers, recognition of candidates who have achieved high academic distinction, and the awarding of the UCLA Medal. Following the formal ceremony, many departments, schools, and colleges hold informal gatherings at which prizes and honors are awarded and students and their families meet faculty members.

Academic regalia (caps, gowns, and hoods) become available through ASUCLA two weeks prior to Commencement. The rental fee is $14.50 for bachelor's candidates; $24 for master's and doctoral candidates. For further information, consult the *Commencement Handbook,* which is mailed to each candidate by the end of May. You may purchase graduation announcements at the ASUCLA Campus Photo Studio (150 Kerckhoff Hall).

Colleges and Schools

Organization

This catalog is organized into the 13 colleges and 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: the College of Fine Arts and the 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 science 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 quarter.

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 quarter or every year. Where possible, the quarters 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 11A-11F, Musicianship (2 units each),** indicates six 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.

Courses numbered 98 and 198 are group study courses set up on a one-time basis in subjects for which no regular courses have been established. Because they vary in content and are offered irregularly, they are not listed in the catalog.

***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 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 the department chair.

Undergraduates may enroll in a maximum of eight units of 199, 199F, 199H, or 199I courses per quarter. After completing 16 units of 199 or 199H credit on a letter grade basis, you must take any additional 199 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 other institutions.) See individual departmental listings for specific limitations on 500-series courses.

*These definitions do not apply to the School of Law, which maintains its own course numbering system.

University Extension Courses

In general, you may not attend University of California Extension for degree credit if you are enrolled in UCLA regular session at the same time. However, certain 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 University 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, Byzantine Civilization is offered by the Department of Classics (Classics M170A) and the Department of History (History M122A). 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 these four 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

Raymond L. Orbach, Provost

5

"'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 nearly 20,000 students and 900 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.

College of Letters and Science

A316 Murphy Hall, (213) 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 Undergraduate Programs and Services, under the direction of an associate provost, provides a network of student assistance within its two components: College Counseling Service and Preparatory Programs.

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). The pursuit of such definite courses of study often requires knowledge of courses known as *prerequisites*.

Counseling Services

The College Counseling Service is located in A316 Murphy Hall. The staff is 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 825-1965. If you would like to confer with a counselor regarding overall degree requirements, academic difficulty, program planning, or assistance in selecting a major, you can arrange an appointment at the information window. Appointments with counseling assistants can be scheduled by calling 206-6681. Group counseling sessions on a variety of academic issues are offered throughout the year.

For information on the Learning Resource Centers, ASK peer counselors, and Preparatory Programs, see Chapter 2.

Your Major

Many entering freshmen are unsure about specific academic goals and request to be admitted to the college as "undeclared." These students often 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 and file the form at the College Counseling Service Office.

You can obtain help with your academic planning from a variety of resources, including the College Counseling Service in A316 Murphy Hall (825-1687 or 825-1965) and the Placement and Career Planning Center (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. "Degree checks" are available by appointment. Departmental counselors can advise you regarding progress and completion of your major requirements. A final audit of degree requirements will be sent to you by the Registrar's Office toward the end of your studies. However, it is important that you maintain an accurate assessment of progress toward your degree by utilizing departmental and College Counseling Service resources.

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 quarter.

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 college due to poor health, family responsibilities, or regular employment requiring 50 percent time 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 78 departmental majors currently offered by the college.

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., M.A., Ph.D.)
Applied Linguistics (C.Phil., Ph.D.)
Applied Mathematics (B.S.)
Arabic (B.A.)
Archaeology (M.A., C.Phil., Ph.D.)
Asian American Studies (M.A.)
Astronomy (B.S., M.S., M.A.T., Ph.D.)
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.)
Chemistry (B.S., M.S., C.Phil., Ph.D.)
Chemistry/Materials Science (B.S.)
Chicano Studies (B.A.)
Chinese (B.A.)
Classical Civilization (B.A.)
Classics (B.A., M.A., C.Phil., Ph.D.)
Cognitive Science (B.A.)
Communication Studies (B.A.)
Comparative Literature (M.A., C.Phil., Ph.D.)
Cybernetics (B.S.)
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/Business (B.A.)
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 Physics (B.A.)
Geochemistry (M.S., C.Phil., Ph.D.)
Geography (B.A., M.A., C.Phil., Ph.D.)
Geography/Ecosystems (B.A.)
Geology (B.S., M.S., C.Phil., Ph.D.)
Geology — Engineering Geology (B.S.)
Geology — Geochemistry (B.S.)
Geology — Nonrenewable Natural Resources (B.S., M.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.)
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.)
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.)
Kinesiology (B.S., M.S., Ph.D.)
Latin (B.A., M.A.)
Latin American Studies (B.A., M.A.)
Linguistics (B.A., M.A., C.Phil., Ph.D.)
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/Computer Science (B.S.)
Mathematics of Computation (B.S.)
Microbiology (B.S., M.A., Ph.D.)
Molecular Biology (Ph.D.)
Near Eastern Languages and Cultures (M.A., C.Phil., Ph.D.)
Near Eastern Studies (B.A.)
Philosophy (B.A., M.A., C.Phil., Ph.D.)
Physics (B.S., M.S., M.A.T., 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.)
Religion, Study of (B.A.)
Romance Linguistics and Literature (M.A., C.Phil., Ph.D.)
Russian Civilization (B.A.)
Russian Linguistics (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.)
World Arts and Cultures (B.A.)

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 24 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
Chicano Studies
Communication Studies
Comparative Literature
Cybernetics
East Asian Studies
Economics/System Science
Folklore and Mythology
History/Art History
Indo-European Studies
Islamic Studies
Latin American Studies
Mathematics/Computer Science
Molecular Biology
Near Eastern Studies
Religion, Study of
Romance Linguistics and Literature
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 quarters 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 dean of the Division of Honors 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 memoranda column of your official transcript; your diploma will read "Individual Field of Concentration." For further details about individual majors, contact the Division of Honors in A311 Murphy Hall (825-1553).

Supplemental Programs

The college offers no "minors"; instead, you may choose from nine 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 programs must be taken jointly with an organized departmental or interdepartmental major:

African Studies
Asian American Studies
Business and Administration
Computing, Program in
Diversified Liberal Arts
International Relations
Law and Society
Urban Studies or Organizational Studies
Women's Studies

Detailed descriptions of each program are given under their respective headings later in this chapter.

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. If the majors are not in the same division of the college, 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 quarter.

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 quarter. For exceptions, see "Minimum Progress" earlier in this section. Three courses are recommended for students in the first quarter of the freshman year. All other students who have a C average or better may carry four and one-half courses (18 units) without petition. After the first quarter, you may petition to enroll in as many as five courses if you attained at least a B average the preceding quarter in a program of at least three graded courses. First-quarter 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 quarters at UCLA; however, they are not encouraged to do so.

Requirements for the Bachelor's Degrees

Each student must meet three levels 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 the latter level, 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 six types of requirements which must be satisfied for the award of the degree: unit, major and scholarship, residence, foreign language (effective Fall Quarter 1988), English composition, and general education requirements.

Unit Requirements

You must satisfactorily complete for credit a minimum of 180 units (45 courses) for the bachelor's degree. A maximum of 216 (228 for double majors and special programs) units is allowed. After having credit for 216 (or 228) units, you will not be permitted to continue except in rare cases which must be approved by the college. If you have credit for English 1 taken Fall Quarter 1979 through Summer Quarter 1984 at UCLA, you will be required to complete satisfactorily 182 units (45½ courses); a maximum of 218 (or 230) units is then allowed. If you have advanced placement (transfer) credit, you may exceed the unit maximum by the amount of that credit.

Structure of a Degree

Three levels 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) General Education

Department Requirements

(1) Preparation for the Major

(2) Major Requirements

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).

Residence Requirement

See "Residence Requirements" later in this section.

Upper Division Unit Requirement

For students entering in Fall Quarter 1982 or later, at least 72 units (18 courses) must be upper division (numbered 100-199).

For students entering in Fall Quarter 1982 or later, at least 72 units (18 courses) of the above requirement must be upper division (numbered 100-199). Students entering prior to Fall Quarter 1982 must complete at least 52 units (13 courses) in upper division.

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.

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 residence requirements apply to all students, both continuing and transfer.

Foreign Language Requirements

The College of Letters and Science does not have a collegewide requirement for foreign language at this time, but one will become effective in Fall Quarter 1988 (see "General Education Requirements" below). Specific departments or majors within the college, however, may impose such requirements at present. Credit will not be allowed for a less advanced course in grammar and/or composition after you have completed a more advanced course. For other limitations, see "Credit Limitations" later in this section.

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 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).

English Composition Requirement

Note: You must complete the University's Subject A 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 the College Entrance Examination Board (CEEB) Advanced Placement Test in English or by passing the English 3 Proficiency Examination. Students scoring 660 or better on the CEEB English Achievement Test are eligible for this proficiency exam.

You must satisfy the composition requirement within your first three quarters in residence.

Transfer Students: If you have completed an English composition course graded Passed, you may take the English 3 Proficiency Examination by presenting a letter of authorization from the college to the Freshman Writing Program. If you have received a grade of C or better in a college composition course that has not satisfied the requirement, you may be eligible for the proficiency examination after a Freshman Writing Program interview. Eligible students must register for the examination in the Freshman Writing Program Office, 271 Kinsey Hall, before the first day of enrollment for the quarter.

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 quarter in residence in the college. If you are required to take English B to satisfy the Subject A requirement, you should, on completion of that requirement, take an acceptable composition course in your second quarter 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 (ESL) 36 with a grade of C or better. Admission into course 36 is determined by a Composition Placement Test administered the first day of class each quarter. A low score on the test may require that you enroll in English (ESL) 35 prior to course 36.

General Education and Breadth Requirements

Effective Fall Quarter 1986, all entering students are required to fulfill the general education requirements. Continuing UCLA students in the College of Letters and Science who completed **16 or more units** before Fall Quarter 1983 are eligible to follow the breadth requirements as described in previous catalogs.

General Education Requirements

The general education requirements are intended to define a "core" of knowledge necessary to a liberal arts education. Majors are classified in the four divisions of the college; GE requirements specify a limited number of courses within smaller subgroups. This arrangement is designed to provide a conceptual overview of core areas without a formal core curriculum.

The requirements consist of two parts. You must (1) demonstrate basic proficiency in quantitative reasoning, foreign language, and English composition and (2) complete course requirements in each of the four divisions of the college: humanities, physical sciences, social sciences, and life sciences.

(1) Basic Proficiency Levels

Note: All courses taken to satisfy GE proficiency requirements must be completed with a grade of Passed or C or better.

(a) *Quantitative Reasoning:* May be satisfied by achieving an SAT mathematics score of 600 or better, a CEEB mathematics score of 550 or better, or by completing one of the following courses: Anthropology 186A; Computer Science 10C or 10F; Economics 40; Mathematics 2 or any higher numbered course except 38A, 38B, and 104; Philosophy 31; Political Science 6; Program in Computing 10A, 10B, 10C; Public Health 100A, 100B, 100C, 100D; or Sociology 18.

(b) *Foreign Language:* This requirement becomes effective for students entering UCLA in Fall Quarter 1988 and thereafter. At that time it may be satisfied by passing college-level language instruction through level three or by achieving a score indicating competence equivalent to level three on the Educational Testing Service Advanced Placement (AP) or UCLA departmental placement examination.

(c) *English Composition:* Same as the college English Composition requirement described above. Transfer students should consult the college concerning application of transfer courses toward these requirements and read individual course descriptions to avoid possible duplication. Local community college counselors have lists of courses applicable toward UCLA requirements.

(2) Course Requirements

As specified on the chart labeled "Courses to Fulfill GE Requirements" on the next page, you must pass 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.

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 of which is in their major subgroup. 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.

Advanced Placement Credit: For application of advanced placement (AP) credit on the general education requirements, see the chart later in this section or consult the College Counseling Service.

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
Classics
English
English/Greek
English/Latin
French
German
Greek
Hebrew
Italian (including Italian and Special Fields)
Japanese
Latin
Portuguese
Scandinavian Languages
Slavic Languages and Literatures
Spanish
Spanish and Portuguese
World Arts and Cultures

A2: Philosophy

Philosophy

A3: Language and Linguistics

French and Linguistics
Linguistics (including all Linguistics and special fields majors)
Russian Linguistics
Spanish and Linguistics

A4: Culture and Civilization

Ancient Near Eastern Civilizations
Classical Civilization
Jewish Studies
Near Eastern Studies
Religion, Study of
Russian Civilization

(B) Physical Sciences

Applied Mathematics
Astronomy
Atmospheric Sciences
Biochemistry
Chemistry
Chemistry/Materials Science
Cybernetics
Economics/System Science
General Chemistry
General Physics
Geology (including all specialization options)
Geophysics (including all specialization options)
Mathematics
Mathematics/Applied Science
Mathematics/Computer Science
Mathematics of Computation
Physics

(C) Social Sciences

C1: Historical Analysis

History
History/Art History

C2: Social Analysis

Afro-American Studies
Anthropology
Chicano Studies
Communication Studies
East Asian Studies
Economics (including all specialization options except Economics/System Science)
Geography
Geography/Ecosystems
Latin American Studies
Political Science
Sociology

(D) Life Sciences

Biology
Cognitive Science
Kinesiology
Microbiology
Psychobiology
Psychology

Courses to Fulfill GE Requirements*

(A) Humanities

Four courses, with at least one from Group A1 and no more than two courses from any single group:

(1) Literature

Classics 141, 142, 143, 144
East Asian Languages and Cultures 140A, 140B, 140C, 141A, 141B
English 10A, 10B, 10C, 70, 75, 80, 85, 90, 100A, 100B, 100C, 102
French 12, 114A, 114B, 114C, 144A, 144B, 144C
German 101A, 101B, 101C
Humanities 1A, 1B, 1C, 2A, 2B, 2C
Italian 50A, 50B
Russian 100, 119, 120, 125, 126
Spanish and Portuguese: Portuguese 120A, 120B, 130A, 130B, 140, Spanish 120A, 120B, 136A, 136B, 160A, 160B, 160C

(2) Philosophy

Philosophy 1, 2, 4, 5A, 6, 7, 8, 10, 21, 22

(3) Language and Linguistics

Linguistics 1, 100
Language: Formal University foreign language instruction at level four or higher; no more than one course at level four or higher may be used

(4) Culture and Civilization

Classics M70
East Asian Languages and Cultures 40A, 40B, 42
Folklore and Mythology 15, 101
German 100A, 100B, 100C
History M70
Italian 42A, 42B
Near Eastern Languages and Cultures: Berber 130, Iranian 169, 170, Jewish Studies 110, Turkic Languages 160
Slavic Languages and Literatures: Slavic 99, Bulgarian 99, Russian 99, Romanian 99
Spanish and Portuguese M42, M44

(5) The Arts

Art, Design, and Art History: Art 22, Art History 50, 51, 54, 55, 56, 57, Design 30A
Classics 151A, 151B, 151C, 151D
Dance 134A, 134B, 181A, 182A, 187A
Music (no more than one course from a single grouping):
(a) 2A, 2B, 137A, 137B, 138
(b) 130, 133, 134, 135A, 135B, 135C, 139, 188A through 188F, 189
(c) 131A, 131B, 140A, 140B, 140C, 141, 145, 152, 157
(d) 144
Theater, Film, and Television: Motion Picture/Television 106A through 106E, Theater 5A, 5B, 5C, 102A, 102B, 102D, 102E, 104D, 104E, 104F

(B) Physical Sciences

Three courses from the following:

Astronomy 3, 3H, 4, 81, 82
Atmospheric Sciences 2, 3, 6
Chemistry 2, 11A, 11B
Earth and Space Sciences 1 or 100, 2, 5, 9, 15
Engineering 11
Geography 1
Mathematics 3A, 3B, 3C, 3E, 31A, 31B, 32A, 32B
Physics 3A, 3B, 3C, 6A, 6B, 6C, 8A through 8E, 10, 11

(C) Social Sciences

Four courses, two from each group:

(1) Historical Analysis

Two courses from a single sequence are recommended:

Classics 10, 20
Economics 107
History 1A, 1B, 1C, 2, 3A, 3B, 3C, 4, 6A, 6B, 6C, 7A, 7B, 8A, 8B, 8C, 9A, 9B, 9C, 9D, 10A, 10B
Political Science 111A, 111B, 111C, 114A, 114B

(2) Social Analysis

Anthropology 5 or 22, 6, 33
Communication Studies 10
Economics 1 and/or 2 or 100**, 110
Geography 3, 4
Political Science 1, 20, 50
Psychology 10
Sociology 1

(D) Life Sciences

Three courses from the following:

Anthropology 1 and/or 2 or 11**
Biology 2, 5, 6, 7, 8, 10, 13, 20, 25
Earth and Space Sciences 115
Geography 2, 5
Kinesiology 12A, 12B, 13, 14
Microbiology 6
Psychology 15

Honors Collegium: Inquire at the Division of Honors (A311 Murphy Hall) for information on courses which satisfy any of the areas of the general education requirement.

*All students are required to fulfill *either* general education *or* breadth requirements, but not both. Refer to the box on page 71 to determine which of the sets of requirements you are required to fulfill.
**Check course descriptions for possible credit duplication.

Credit Limitations

Note: Transfer students with credit from other institutions (advanced standing credit) receive an evaluation 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 quarter before graduation. Consult a counselor in the College Counseling Service if you have questions.

Subject A

No degree credit will be granted for Subject A whether completed at UCLA or another UC campus. 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 will be 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 University Extension unless you have petitioned the college for approval before enrollment. Such petitions are rarely granted.

Performance Courses

No more than 12 units of music and/or dance performance courses (Dance 70 through 76B, 79A through 79Z, 171B through 176B, and Music 80A-80N and 81A-81Z) may be applied toward the bachelor's degree whether taken at UCLA or another institution. Letters and Science students electing these courses must enroll on a Passed/Not Passed basis only. For further information on these limits, see "Passed/Not Passed Grades" in Chapter 4.

College Level Examination Program

Credit earned through the College Level Examination Program (CLEP) will not be applied toward the bachelor's degree.

Advanced Placement (AP) Tests

Advanced Placement (AP) Test credit will not be applied toward a degree unless you had less than 36 units of credit at the time of the examination(s).

ROTC Courses

No more than 24 units of credit in aerospace studies, military science, or naval science may be applied to the 180-unit minimum required for the degree.

Independent Study Courses

No more than two courses (eight units) of credit may be taken per quarter 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.

Chemistry 2

No unit credit will be granted toward the degree for Chemistry 2 if one year of high school chemistry was completed with a grade of C or better*. The maximum deduction will be four units.

Physics 3A, 6A, 10

Any two or more courses from Physics 3A, 6A, and 10 will be limited to a total of six units of credit.

***Note: Effective Fall Quarter 1984 and thereafter, units and grade points will be deducted at graduation for the duplicated chemistry courses specified above.**

(continued on page 76)

Credit for Advanced Placement Tests

Test	UCLA Course Equivalents*	Credit Allowed on GE Requirements	Credit Allowed on Breadth Requirements
Art		No application for art	
Art History	10 units		10 units toward humanities
Art Studio: General Portfolio or Drawing Portfolio	10 units for either general or drawing portfolio		No application for art studio
Biology	Biology 2 (4 units) plus 6 unassigned units	Credit for Biology 2 (4 units)	Credit for Biology 2 (4 units) plus 6 units toward life science
Chemistry	10 units	No application for chemistry	10 units toward physical science
Computer Science	Score 3, 4, or 5 — 5 units	Satisfies quantitative reasoning requirement	No application for computer science
English Language and Composition or Composition and Literature**	Score 3 — Subject A, 10 unassigned units	Score 3 — Satisfies Subject A requirement	Score 3 — Satisfies Subject A requirement and 10 units toward humanities
	Score 4 — Subject A, English 3 (10 units)	Score 4 or 5 — Satisfies Subject A requirement and English 3	Score 4 — Satisfies Subject A requirement and English 3 plus 6 units toward humanities

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 will receive a maximum of 10 units of credit.

Credit for Advanced Placement Tests (continued)

Test	UCLA Course Equivalents*	Credit Allowed on GE Requirements	Credit Allowed on Breadth Requirements
English *(continued)*	Score 5 — Subject A, English 3 and 4 (10 units)		Score 5 — Satisfies Subject A requirement and English 3 and 4 (6 units total toward humanities)
History, American	Score 3 — 10 units	Score 3 — No application	Score 3 — 10 units toward social science
	Score 4 or 5 — History 7A-7B (10 units) Score 3, 4, or 5 — Satisfies American History and Institutions requirement	Score 4 or 5 — Credit for History 7A-7B	Score 4 or 5 — Credit for History 7A-7B (10 units total toward social science)
History, European	History 1C (4 units) plus 6 units	Credit for History 1C (4 units)	Credit for History 1C (4 units) plus European history (6 units toward social science)
Language, French			
French Language	Score 3 — French 4 (10 units total) Score 4 — French 5 (10 units total) Score 5 — French 6 (10 units total)	4 units toward language and linguistics requirement	10 units toward humanities
French Literature	10 units	No application for French literature	10 units toward humanities
Language, German	Score 3 — German 3 (10 units) Score 4 — German 4 (10 units) Score 5 — German 5 (10 units)	Score 3 — No application Score 4 or 5 — 4 units toward language and linguistics requirement	Score 3 — No application Score 4 or 5 — 10 units toward humanities
Language, Latin	Classics — Title (5 units)	No application for Latin	
Vergil			5 units toward humanities
Catullus/Horace			5 units toward humanities
Language, Spanish			
Spanish Language	Score 3 — Spanish 4 (10 units) Score 4 or 5 — Spanish 5 (10 units total)	4 units toward language and linguistics requirement	10 units toward humanities
Spanish Literature	10 units	No application for Spanish literature	10 units toward humanities
Mathematics (AB Test)**	Mathematics 31A (5 units)	Credit for Mathematics 31A (5 units)	Credit for Mathematics 31A (5 units toward physical science)
Mathematics (BC Test)**	Mathematics 31A, 31B (10 units)	Credit for Mathematics 31A, 31B (10 units total)	Credit for Mathematics 31A, 31B (10 units total toward physical science)
Music		No application for music	
Music Literature**	10 units		10 units toward humanities
Music Theory**	10 units		No application for music theory
Physics		No application for physics	
B Test **	10 units		10 units toward physical science
C Test**	5 or 10 units		5 units for C1 and 5 units for C2 toward physical science

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 will receive a maximum of 10 units of credit.

Statistics

No credit will be allowed for more than one lower division course in statistics 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 the Division of Honors.

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 ($5 each) are available only through an appointment with a counselor in the Division of Honors. Approval is given or withheld by the dean of the Division of Honors who may limit the number of such petitions you present.

Honors

College Honors

The Certificate of 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.

The certificate 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 Division of Honors 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, preferential preenrollment in classes each quarter, 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, access to the honors computer facility, 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 assisted in obtaining on-campus student housing for the first year.

To qualify for College Honors, entering freshmen must (1) have an overall GPA of 3.5 or better and an SAT score of 1,300 or better (on one test date) **or** (2) graduate in the top three percent of their high school class. 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.

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 Division of Honors.

Honors Status

A student in the College of Letters and Science who has demonstrated superior academic achievement is eligible to apply for admission to Honors Status, which is recorded on the transcript. Admission may be granted by the dean of the Division of Honors after completion of 12 or more graded units at UCLA with a cumulative UC grade-point average of no less than 3.5. Continued superior academic performance is required to remain in Honors Status. Apply at A311 Murphy Hall.

Students with Honors Status are entitled to specialized counseling within the division, access to the honors computer facility, and a filing and mailing service for letters of recommendation. Honors Status students are also eligible for research funding through the Division of Honors. For details on these programs, consult the Division of Honors or your major department.

Honors with the Bachelor's Degree

Honors with the Bachelor's Degree are awarded according to your overall grade-point average at the beginning of your last quarter of academic work or, if not then eligible, at graduation. To be eligible, you must have completed 90 or more graded units at the University of California. Coursework taken on the Education Abroad Program may not be applied toward Honors with the Bachelor's Degree. 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 quarter. The following criteria are used to note Dean's Honors List on the student records: (1) a 3.75 GPA in any one quarter 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 quarter, 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 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 quarter'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 Division of Honors.

The Honors Collegium

The Honors Collegium is a unique and innovative educational alternative designed primarily for students in their freshman and sophomore years. Refer to Honors Collegium later in this chapter for a complete description of the program.

Division of Honors Office

The Division of Honors, located in A311 Murphy Hall (825-1553, 825-3786), provides academic counseling and services for College Honors and Honors Status 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 of recommendation to graduate and professional schools.

A variety of scholarships and awards for qualified continuing students and graduating seniors is also available.

In addition, the Division of Honors administers Phi Beta Kappa (national honor society), the UCLA Debate Union, and the Summer Research Stipend Program.

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.

Prehealth Care Advising Office

Information and counseling on preparing for health care professional schools and assistance in filing an application are available through the Prehealth Care Advising Office, College of Letters and Science. **Open counseling sessions are held weekly** for premeds, predents, prenurses, and other prehealth students (time and place are announced in the "What's Bruin" section of the *Daily Bruin* and are posted outside A328 Murphy Hall, 825-1817). Application blanks for AMCAS, MCAT, DAT, etc., may also be obtained from this office. Students in the Division of Honors can make counseling appointments in A311 Murphy Hall.

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) English 3 and 4; (2) Chemistry 11A, 11B/11BL, 11C/11CL, 21, 23, 25, Physics 3A, 3B, and 3C, or 6A, 6B, and 6C, or 8A, 8B, and 8C, Biology 5, 7, 8, 8L, 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, Washington, DC 20036. Sample copies of the Dental Admission Test (DAT) are available in the Prehealth Care Advising Office; **open counseling sessions are held weekly** (call 825-1817 for details).

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) one year of English which includes English 3; (4) Chemistry 11A, 11B/11BL, 21, 23, 25; (5) Biology 5, 5L, 7, 8, 8L; (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.

Open counseling sessions are held weekly; call 825-1817 for details.

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; United States 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) 12 quarter units of English, including at least one course in English composition; (2) Chemistry 11A, 11B/11BL, 11C/11CL, 21, 23, 25; (3) Physics 3A, 3B, and 3C, or 6A, 6B, and 6C, or 8A, 8B, and 8C; (4) two years of college biology to include the study of cellular, molecular, developmental, and genetic biology, including at least one year of upper division courses. Required lower division courses are Biology 5, 5L, 7, 8, 8L; suggested upper division courses are selected from Biology 110, 138, 144, CM156, 166. 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, USA and Canada*, Association of American Medical Colleges, 1 Dupont Circle NW, Washington, DC 20036; *The Education of Osteopathic Physicians*, AACOM, 4720 Montgomery Lane, Suite 609, Washington, DC 20014; and *The New MCAT Student Manual* (also an AAMC publication available at the above AAMC address). **Open counseling sessions are held weekly;** call 825-1817 for details.

Prenursing Curriculum: Two Years

The University offers a four-year course 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 of liberal arts courses with a 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 quarters.

Because enrollment in the UCLA School of Nursing is limited, you should become familiar with the admission requirements of other nursing programs as early as possible. Contact schools of nursing directly and attend **open counseling sessions** in UCLA's School of Nursing (times are posted in the Office of Student Affairs, 2-200 Factor Building) and those given by the Prehealth Care Advising Office (posted outside A328 Murphy Hall, 825-1817).

*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.*

New students admitted to the college in this curriculum are counseled in the college as "undeclared" majors but may seek additional advisement during posted weekly open counseling sessions. 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 5; (2) Biology 5, 7; (3) Chemistry 11A, 15, 15L; (4) English 3; (5) Kinesiology 13; (6) Microbiology 10 or 101; (7) Physics 10 or one year of high school physics; (8) Psychology 10, 15; (9) Public Health 161; (10) Sociology 1; (11) recommended electives in the social and biological 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, CA 94720, (415) 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) English 3, 4; (2) Chemistry 11A, 11B/11BL, 11C/11CL, 21, 23; (3) Physics 6A, 6B, and 6C, or 8A, 8B, and 8C; (4) Biology 5, 5L, 7, 8, 8L; (5) Psychology 10; (6) Mathematics 3A, 3B, and 3C, or 31A, 31B, and 50 or Psychology 41; (7) Microbiology 10; (8) Kinesiology 12A, 12B, 13. Recommended: two upper division courses in the biological sciences, preferably in neuroanatomy and neurophysiology.

The balance of the 135 quarter units required for admission may be selected from the social sciences, foreign languages, and the 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. **Open counseling sessions are held weekly;** call 825-1817 for details.

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.*

Curriculum Requirements (First Year): (1) Subject A; (2) English 3, 4; (3) Chemistry 11A, 11B/11BL, 11C/11CL; (4) trigonometry and intermediate algebra (if not completed in high school); (5) 28 quarter units of electives selected from courses in foreign language, social sciences, and humanities (within the two-year preparation).

Curriculum Requirements (Second Year): (1) Biology 5, 7, 8, 8L; (2) Physics 3A and 3B, or 6A and 6B, or 8A and 8B; (3) Mathematics 3A and 3B, or 31A and 31B; (4) Chemistry 21, 23; (5) American History and Institutions.

For further information, contact Robert LeWinter, Director of Pharmaceutical Services, 17-135 Center for the Health Sciences (206-6555). **Open counseling sessions are held weekly;** call 825-1817 for details.

Prephysical Therapy Curriculum: Three or Four Years

Students who intend to apply for admission to a physical therapy school should select a major (kinesiology and psychology are commonly selected) and complete the following prerequisite courses: Kinesiology 12A, 12B, and 13 or 14; Biology 5, 7; Chemistry 11A, 11B/11BL, 15, 15L; Physics 3A, 3B, 3C; 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.

Information on physical therapy programs in California may be obtained from the Student Affairs Office in the Department of Kinesiology, 2834 Slichter Hall (825-3891). You should write each school early in your sophomore year for specific admission requirements and application deadlines. Information concerning out-of-state programs may be obtained from the American Physical Therapy Association, 1156 15th St. NW, Washington, DC 20005.

*Students who have completed the two-year 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, (415) 476-2732. For further information, see the *Announcement of the School of Pharmacy, San Francisco*, which may be obtained from the Dean, School of Pharmacy, University of California Medical Center, San Francisco, CA 94143-0446.

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.

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 **weekly drop-in counseling sessions.** For the time and place of the drop-in sessions, see the "What's Bruin" section of the *Daily Bruin* or call 825-1965. Students in the Division of Honors can make counseling appointments in A311 Murphy Hall.

For additional information, see the *Law School Admission Bulletin* within the "Law School Admission Service Packet" (available at the Admissions Office, UCLA Law School).

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, (213) 825-3686

Professors

Richard L. Abel, LL.B., Ph.D. *(Law)*
Edward A. Alpers, Ph.D. *(History)*
Robert B. Edgerton, Ph.D. *(Anthropology)*
Christopher Ehret, Ph.D. *(History)*
Hassan el Nouty, Docteur ès Lettres *(French)*
John Friedmann, Ph.D. *(Architecture and Urban Planning)*
Victoria A. Fromkin, Ph.D. *(Linguistics)*
Edward Gonzalez, Ph.D. *(Political Science)*
Peter B. Hammond, Ph.D. *(Anthropology)*
John N. Hawkins, Ph.D. *(Education)*
Richard C. Hawkins, M.A. *(Theater, Film, and Television)*
Derrick B. Jelliffe, M.D. *(Public Health)*
Mazisi R. Kunene, M.A. *(Linguistics)*
Peter N. Ladefoged, Ph.D. *(Linguistics)*
Michael F. Lofchie, Ph.D. *(Political Science)*
Jacques Maquet, Ph.D. *(Anthropology)*
Peter Marris, B.A. *(Architecture and Urban Planning)*
Henry W. McGee, Jr., J.D., LL.M. *(Law)*
Claudia Mitchell-Kernan, Ph.D. *(Anthropology)*
Alfred K. Neumann, M.D. *(Public Health)*
Charlotte G. Neumann, M.D. *(Public Health)*
Boniface I. Obichere, D.Phil. *(History)*
Antony R. Orme, Ph.D. *(Geography)*
Merrick Posnansky, Ph.D. *(History and Anthropology)*
John F. Povey, Ph.D. *(English as a Second Language)*
Georges Sabagh, Ph.D. *(Sociology)*
Russell G. Schuh, Ph.D. *(Linguistics and African Languages)*
Richard L. Sklar, Ph.D. *(Political Science)*
Allegra Snyder, M.A. *(Dance)*
Edward W. Soja, Ph.D. *(Architecture and Urban Planning)*
Hartmut Walter, Ph.D. *(Geography)*
Walter R. Goldschmidt, Ph.D., *Emeritus (Anthropology)*
Frederick C. Kintzer, Ed.D., *Emeritus (Education)*
Hilda Kuper, Ph.D., *Emeritus (Anthropology)*
Leo J. Kuper, Ph.D., *Emeritus (Sociology)*
Wolf Leslau, Docteur ès Lettres, *Emeritus (Hebrew and Semitic Languages)*
Benjamin E. Thomas, Ph.D., *Emeritus (Geography)*

Associate Professors

Sebastian Edwards, Ph.D. *(Economics)*
Teshome H. Gabriel, Ph.D. *(Theater, Film, and Television), Chair*
Gerry A. Hale, Ph.D. *(Geography)*
Robert A. Hill, M.Sc. *(History)*
Thomas J. Hinnebusch, Ph.D. *(Linguistics and African Languages)*
Gail E. Kennedy, Ph.D. *(Anthropology)*
Robert S. Kirsner, Ph.D. *(Germanic Languages)*
Dwight Read, Ph.D. *(Anthropology)*
Arnold Rubin, Ph.D. *(Art History)*
Hans Schöllhammer, D.B.A. *(Management)*
Nathan Shapira, Dottore in Architettura *(Design)*

Assistant Professors

Jacqueline C. DjeDje, Ph.D. *(Music)*
Beverly J. Robinson, Ph.D. *(Theater, Film, and Television)*

Adjunct and Visiting Assistant Professors

Susanna B. Hecht, Ph.D., *Visiting (Architecture and Urban Planning)*
Joseph J. Lauer, Ph.D., *Adjunct (Library and Information Science)*

Adjunct and Visiting Lecturers

Donald J. Cosentino, Ph.D., *Adjunct (Folklore and Mythology)*
John A. Distefano, Ph.D., *Adjunct (History)*
Patrice Jelliffe, R.N., M.P.H., *Adjunct (Public Health)*
Kobla Ladzekpo, B.F.A., *Visiting (Music)*

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 not only the social sciences and humanities, but increasingly in the professional fields as well. The Master of Arts is not a professional degree, but students are encouraged to enroll in courses in the several professional schools on campus. Articulated degree programs are also offered.

Academic flexibility draws many students to the program. Because there are more than 65 faculty members on campus with African interest and experience in approximately 20 different disciplines, students have multiple options to design individual programs.

According to a recent survey, 37 percent of the program's graduates are continuing study at the postgraduate level, 25 percent are employed in higher education, and 24 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) take the Graduate Record Examination (GRE), (2) 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, (3) submit a sample research project as evidence of serious scholarly potential, and (4) present a resume describing both academic and professional experience.

In addition to meeting the requirements of the Graduate Division, you must have adequate preparation in undergraduate fields related to the program. 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

Studies are concentrated in a major and minor discipline in the social sciences, arts and humanities, or professional schools. 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.

Foreign Language Requirement

You are required to satisfy the language requirement in one of the following ways: (1) take 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) pass a Linguistics Department examination in an African language not regularly offered; (3) prove that you are a native speaker of an African language; (4) prove that you have a Foreign Service Institute rating of three or above in an African language.

Course Requirements

A minimum of nine courses are 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, or the yearly colloquium sponsored by the African Studies Center. 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. In exceptional cases, and with consent of the graduate adviser, a thesis may be substituted for the comprehensive examination. If you wish to follow the thesis plan, you should select, in consultation with the graduate adviser, a faculty committee to supervise your thesis. The thesis must reflect both the major and minor areas of emphasis. Normally the thesis should be submitted to the committee at the beginning of your fourth quarter in residence and should be approved before the end of that quarter. If the committee does not approve the thesis, you will have failed the requirement and will not be allowed to resubmit the thesis.

Comprehensive Examination Plan

If you select the comprehensive examination plan, you will be 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 will be granted only with consent of the graduate adviser. The examination will normally be three 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.

Minor Field Certification: To effectively demonstrate competence in your minor field, you must successfully complete the three required courses with grades of B or better. In individual cases, if competence is not demonstrated by the coursework, a question on the minor field will be included in the comprehensive examination.

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 any of the cooperative degree programs, contact the Graduate Adviser or Assistant Graduate Adviser, M.A. Program in African Area Studies.

M.F.A./M.A.-African Area Studies

The African Area Studies Program and the Motion Picture/Television Division of the Department of Theater, 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., with a specialization in motion picture/television. Additional information is available from Teshome Gabriel, Graduate Adviser, African Area Studies Program, and the Graduate Adviser, Graduate Student Affairs Office, Motion Picture/Television Division, UCLA Theater, Film, and Television Department.

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.

English Language Teaching and Research

If you wish to prepare for English language teaching and research, you have two options: (1) selected Africa-related courses in English as a Second Language can be selected as a major or minor field for the M.A. degree or (2) for more extensive study, the M.A. degree can be combined with the postgraduate certificate in TESL by taking additional specified courses.

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 the full range of available information resources, including library collections of books, serials, and computerized data bases. Mr. Lauer

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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
31A-31B-31C. Elementary Bambara
41A-41B-41C. Elementary Hausa
42A-42B-42C. Intermediate Hausa
103A-103B-103C. Advanced Swahili
143A-143B-143C. Advanced Hausa
150A-150B. African Literature in English Translation
190. Survey of African Languages
199. Special Studies in African Languages
270. Seminar in African Literature

Anthropology 112. Old Stone Age Archaeology
M115S. Historical Archaeology
118A, 118B. Museum Studies
121A. Fossil Man and His Culture
121B. The Australopithecines
121C. Evolution of the Genus *Homo*
133P. Social and Psychological Aspects of Myth and Ritual
133R. Aesthetic Anthropology
135Q. The Individual in Culture
137. Ethnography on Film
152P. Comparative Systems of Social Inequality
155. Illness in Non-Western Societies
156. Comparative Religion
158. Hunting and Gathering Societies
160. Introduction to Social Action Anthropology
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
233P. Symbolic Anthropology
233Q. Aesthetic Anthropology
239P. Selected Topics in Field Training in Ethnography
M247A. Ethnographic Film
250. Social Anthropology
252P. Social Inequality
254. Kinship
255. Comparative Political Institutions
M262P. Culture and Human Reproduction
M263. Medical Anthropology
M266. Medical Anthropology in Public Health
M267B-M267C. Ethnographic Film Direction
271. African Cultures
280. Anthropology Theory

Architecture and Urban Planning 210A. A History of Planning Thought since 1800
210B. Colloquium in Planning Theory
217A-217B. Comprehensive Planning Project
232A. Introduction to Regional Planning: The Evolution of Regional Planning Doctrines
232B. Spatial Planning: Regional and International Development
233. The Political Economy of Urbanization
235A-235B. Urbanization and Rural Development in Third World Countries
236A. Urban and Regional Economic Development I
253. Social Theory for Planners
268. Advanced Seminar in Natural Environment and Resources
269. Special Topics in Natural Environment and Resources
279. Housing for Developing Countries

Art History (Art, Design, and Art History) 55. Africa, Oceania, and Native America
101A, 101B, 101C. Egyptian Art and Archaeology
118C. The Arts of Sub-Saharan Africa
C119A. Advanced Studies in African Art: Western Africa
C119B. Advanced Studies in African Art: Central Africa
201. 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
Dance 172B. Dance of Ghana
182A. Dance Cultures of Africa
Dutch and Afrikaans (Germanic Languages) 105A. Elementary Afrikaans
105B. Intermediate Afrikaans
112. Dutch, Flemish, Afrikaans Literature in Translation
135. Introduction to Afrikaans Literature
Economics 110. Economic Problems of Underdeveloped Countries
111. Theories of Economic Growth and Development
112. Policies for Economic Development
211. Economic Development
212. Applied Topics in Economic Development
213A-213B. Selected Problems of Underdeveloped Areas
Education 204C. Education and National Development
238. Cross-National Analysis of Higher Education
253B. Seminar: African Education
253F. Seminar: Education in Revolutionary Societies
261D. Seminar: The Community College
English 114. World Literatures in English
M261. Studies in African Literature in English
English (ESL) 109J. Introduction to Literature for ESL Students
109K. Literature in the ESL Context
220K. Materials Development for Language Teaching
221K. Media for Language Teaching
223K. Role of English as a Second Language in Bilingual Education
280K. Language Policy in Developing Countries
M285K. Studies in African Literature in English
Folklore and Mythology M154A-M154B. The Afro-American Musical Heritage
M155. Oral Traditions in Africa
M235. African Myth and Mythology
French 221A. Introduction to the Study of the French-African Literatures
221B. French-African Literature of Madagascar and Bantu Africa
Geography 101. Coastal Geomorphology
108. World Vegetation
109. Ecology of Vegetation
112. Animal Geography: Biophysical Aspects
117. Animal Geography: Cultural Aspects
118. Medical Geography
122. Man and Environment in Africa
128. The World's Ecosystems: Problems and Issues
133. Cultural Geography of the Modern World
169. The Earth from Above
188. Northern Africa
189. Middle and Southern Africa
202. Fluvial Geomorphology Seminar
203. Glacial Geomorphology Seminar
212. Advanced Biogeography: Animals
229. Seminar: Man and Environment
232. Advanced Cultural Geography
233. Seminar: Cultural Geography
242. Advanced Population Geography
269. Remote Sensing of Environment
M278. Dating Techniques in Environmental Sciences and Archaeology
288. Northern Africa
289. Middle and Southern Africa
291. The Arid Lands
History 10A-10B. Introduction to the Civilizations of Africa
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
176A-176B. History of West Africa
178A-178B. History of Eastern Africa
179A-179B. History of Southern Africa
197. Undergraduate Seminars
200N. Advanced Historiography: Africa
201N. Topics in History: Africa
275. Introduction to the Professional Study of African History
276. African Archaeology: Field Techniques
277. African Archaeology: Data Analysis
278A-278B. Seminar in African History
Motion Picture/Television (Theater, Film, and Television) 106C. History of African, Asian, and Latin American Film
108. History of Documentary Film
112. Film and Social Change
M209C. Ethnographic Film
219. Seminar in Film and Society
221. Seminar in Film Authors
M265A-M265B. Ethnographic Film Direction
276. Seminar in Non-Western Films
Music 81E. Music and Dance of Ghana
91E. Music and Dance of Ghana
140B. Musical Cultures of the World
143A-143B. Music of Africa
M154A-M154B. The Afro-American Musical Heritage
157. Music of Brazil
280. Seminar in Ethnomusicology
287. Seminar in African Music
C290A-C290B. Proseminar in Ethnomusicology
Political Science 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
C250E. Seminars in Regional and Area Political Studies: African Studies
C271. Seminar in Political Change
Public Health 112. Principles of Epidemiology
114. Epidemiology I
160. Principles of Food and Nutrition
161. Nutrition and Health
171B. Family Health and Population: Principles and Issues
179A. Health Problems and Programs in Africa
179B. African Health Sector Analysis Seminar
186. The World's Population and Food
212H. Epidemiology of Arthropod-Borne Disease
214. Infectious and Tropical Disease Epidemiology
218A, 218B. Protozoal Diseases of Man
220A, 220B. Helminthic Diseases of Man
222. Seminar in Epidemiology: Infectious and Tropical Disease
240. Health Care Issues in International Perspective
270. Maternal and Child Nutrition
272. Seminar on Current Issues in Maternal and Child Health
M274A-M274B. Population Policy and Fertility
M274C. Seminar in Population Policy and Fertility
275. Human Lactation: Biological and Public Health Significance
470A. International Health Agencies and Programs
470B. Advanced Issues in International Health
472A. Maternal and Child Health in Developing Areas
472B. Recent Developments in Maternal and Child Health in Disadvantaged Countries
472D. Overseas Refugee Health Programs
475. Planning and Development of Family Health Programs
477. Assessment of Family Nutrition
478. Anthropometric Nutritional Assessment
479D. Nutrition Education and Training: Third World Considerations
Sociology 112. Development of Sociological Theory
113. Contemporary Sociological Theory
114. Marxist Sociology
120. Social Change
124. Ethnic and Status Groups
126. Social Demography
130. Social Processes in Africa
160. The Demography and Sociology of Women's Economic Roles
212A-212B. Marxist Methodology
213A-213B. Techniques of Demographic and Ecological Analysis
217A-217B. Ethnographic Fieldwork
218A-218B. Ethnomethodological Methods
256. Demography
274. Selected Problems in the Sociology of Africa
M287A-M287B. Population Policy and Fertility
M287C. Seminar in Population Policy and Fertility
Theater (Theater, Film, and Television) 102E. Theater of the Non-European World
202P. Seminar in Traditions of African Theater

African Studies
(Interdepartmental)

10244 Bunche Hall, (213) 825-2944

Professors

Christopher Ehret, Ph.D. *(History), Chair*
Richard L. Sklar, Ph.D. *(Political Science)*

Associate Professor

Thomas J. Hinnebusch, Ph.D. *(Linguistics)*

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 program 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 program 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 will receive a degree with a major in a selected discipline and specialization in African studies. The chair of the committee in charge will certify completion of the Special Program in African Studies.

Special Undergraduate Program

Preparation for the Program

Required: Two courses from History 10A, 10B, and African Languages 190. Training in Arabic, French, Portuguese, or an African language is highly recommended.

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, they are required to take a course related to Africa in each of four departments. One required upper division course related to Africa may, however, be replaced by a three-quarter sequence of any African language.

For more information, contact the Assistant Graduate Adviser, African Studies Center, 10244 Bunche Hall (825-2944) or Professor Christopher Ehret, History, 6265 Bunche Hall (825-4093, 825-4601).

Afro-American Studies (Interdepartmental)

3111 Campbell Hall, (213) 825-7403

Professors

Alden Ashforth, Ph.D. *(Music)*
Gordon L. Berry, Ed.D. *(Education)*
Stanley Coben, Ph.D. *(History)*
Mazisi R. Kunene, M.A. *(Linguistics)*
Claudia Mitchell-Kernan, Ph.D. *(Anthropology), Cochair*
Boniface I. Obichere, D.Phil. *(History)*

Associate Professors

J. Eugene Grigsby III, Ph.D. *(Architecture and Urban Planning)*
Robert A. Hill, M.Sc. *(History)*
James H. Johnson, Ph.D. *(Geography)*
Hector F. Myers, Ph.D. *(Psychology)*
Melvin Oliver, Ph.D. *(Sociology), Cochair*
Alfred E. Osborne, Jr., Ph.D. *(Management)*
Gloria J. Powell, M.D., *in Residence (Psychiatry)*
Romeria Tidwell, Ph.D. *(Education)*
Gail E. Wyatt, Ph.D., *in Residence (Psychiatry)*
Richard A. Yarborough, Ph.D. *(English)*

Assistant Professors

Margaret W. Creel, Ph.D. *(History)*
Jacqueline C. DjeDje, Ph.D. *(Music)*
Halford H. Fairchild, Ph.D. *(Psychology)*
Vickie M. Mays, Ph.D. *(Psychology)*
Warren Pinckney, Ph.D. *(Music)*
Beverly J. Robinson, Ph.D. *(Theater, Film, and Television)*

Adjunct Associate Professor

Karen Hill Scott, Ed.D. *(Architecture and Urban Planning)*

Adjunct and Visiting Lecturers

Barbara A. Bass, M.S.W., *Adjunct (Psychiatry)*
Kenny Burrell, B.A., *Visiting*

Scope and Objectives

The Afro-American studies major is a relatively new major at UCLA. Originally born during the late 1960s and early 1970s, the program was designed to fill a void that existed at UCLA in terms of social science material relevant to the black experience. Students and faculty currently associated with the program see the Afro-American studies 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 Afro-American experience in the United States. For Afro-American students, this leads to a heightening of self-awareness and self-pride. For non-Afro-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 Afro-Americans. This goal is achieved in two primary ways. First, it provides an interdisciplinary exposure to particular features of the Afro-American experience. Majors gain an in-depth understanding of the historical, anthropological, sociological, psychological, economic, and political aspects of Afro-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 made a number of changes in the degree requirements for the 1983-84 academic year. Students declaring an Afro-American studies major after Spring Quarter 1983 must satisfy the requirements that follow. Students who declared the major prior to Spring Quarter 1983 may satisfy either the new requirements or those described in the 1982-83 *UCLA Undergraduate Catalog*. Because of the evolving nature of the program, you should periodically check with the program office for additional changes and/or updates. Majors should also closely consult the 1986-87 *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 1 (or 11), 2, 5, 6; *economics:* Economics 1, 2, 40, Mathematics 3A, 3E (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 99 (or 100 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 11, Physics 10 (or 3A or 6A or 8A), one year of high school chemistry (or Chemistry 2 or 11A); *sociology:* Mathematics 2, Sociology 1, 18, Linguistics 1, Anthropology 22. 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, 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 will best meet your current and future educational and career goals.

Approved courses (recommended courses are in bold):

Afro-American Studies **100B, 145, M164, M172, M197, 197B**

Anthropology 110, **111,** 115P, 115Q, 120, 122, 123, 124, **125A, 125B, 130,** 131, 133P, 134, 135A, 135B, **135Q,** 135R, **136P,** M136Q, 137, 138, **M140,** 142A, 142B, **C145, 150, 151, 152, 153A, 153B,** 155, 158, 161, M163, **M164, 166, 167,** M168, **171,** 182, 186A, 186B, 187, **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, 100A, 100B, 100C, 100D, **M104A, M104B,** M105, 106, M107, 108A, 108B, **109, M111A,** 114, 115A, 118, 131A through 131H, 136A, 136B, 136C, 140A, 140B, 141A, 141B, 142A, 142B, 143, 171, 172, 173, 174, **178,** 188, 189, **190, M197, 199**

History 100, 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, M158B, M158C, 158D, 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, **192, 199**

Political Science **102, 104A, 104B, M105, M106,** 111A, 111B, 111C, 113, **114A, 114B,** 115, **116,** 119A, 119B, 120, 124, 125, 126, 131, **C137A, 137B,** M139A, **M140,** 141, **142,** 145, **146, M147, 165, 166A, 166B, 166C, 167, 168L,** 170, 172A, 172B, 173, 174, 175A, 175B, 180, 182A, 182B, 186, 187, 188A, **188B,** 191, **199**

Psychology **42,** 102, **110, 111,** 112B, **115,** 116, 118B, M119, **120,** 121, 123, **125, 127,** 129A, 129B, **130, 132, M133B, 135, 136A,** C136B, 137C, 137D, M138, **139, M142,** 143, 147, 148, 150, **151,** M163, M165, **170A, 170B, M172, 175, 176,** 177, 179, **192, 193, 194, 195, 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 102A through 102Z, **109,** 110, **112, 113, 114, 115, 118, 120,** 122, **123, 124, 125,** 126, 128, 129, **130,** 131, **136, 138,** 140, 142, M143, 145, 146, **147, 150, 151,** 152, 153, 154, **155,** 157, M158, 160, 161, 162, 163, **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 Afro-American cultures in the United States, 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 the Fall Quarter. The application deadline for the 1987-88 academic year is January 30, 1987 (earlier for international students). Prospective students may request applications from the M.A. Degree Program in Afro-American Studies, Center for Afro-American Studies, 3111 Campbell Hall, UCLA, Los Angeles, CA 90024.

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: Art, Dance, Economics, Geography, Psychiatry and Biobehavioral Sciences, Theater, Film, and Television, Folklore and Mythology, Latin American Studies, African Studies, Education, Library and Information Science, Management, Public Health, and Social Welfare.

Foreign Language Requirement

You are required to satisfy the language requirement in one of the following ways: (1) successfully completing two years of coursework in a foreign language at the college level; (2) passing a foreign language proficiency examination approved by your guidance committee and deemed appropriate by the program committee; or (3) demonstrating competence in the use of the computer as an aid in social research.

Course Requirements

A total of 14 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 seven required courses. You are required to take Afro-American Studies M200A and three courses from the 200B through 200F series. 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. Finally, course 270A is required, and courses 270B-270C are to be taken in conjunction with work in the discipline of your choice. These seminars are expected to facilitate completion of your thesis. One course (four units) in the 500 series 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 1986-87 *Afro-American Studies Catalog* 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 a committee consisting of at least three faculty members appointed by the program and is offered on a regular basis.

Upper Division Courses

100B. Psychology from an Afro-American Perspective. A survey of psychological literature relevant to Afro-Americans, with emphasis on contributions of Afro-American psychologists. Topics include the history of psychology, testing and intelligence, the family, personality and motivation, racism and race relations, education, community psychology, and the future of Afro-American psychology.

Mr. Fairchild (Sp)

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.

M104A. Early Afro-American Literature. (Formerly numbered M104.) (Same as English M104A.) Prerequisite: satisfaction of Subject A requirement. An introductory survey of the Afro-American literary tradition from the 18th century to World War I, including oral and written forms (folktales, spirituals, sermons; prose, poetry). Emphasis on the use of literature in the antislavery movement and the rise of black writing at the turn of the century. Writers studied include Phillis Wheatley, David Walker, Frances Harper, Frederick Douglass, Paul Laurence Dunbar, Charles W. Chesnutt, Booker T. Washington, Pauline Hopkins, W.E.B. DuBois, and James W. Johnson.
Mr. Yarborough

M104B. Afro-American Literature since the 1920s. (Formerly numbered M104.) (Same as English M104B.) Prerequisite: satisfaction of Subject A requirement. An introductory survey of the Afro-American literary tradition from the 1920s to the present, including oral and written forms (ballads, blues, speeches; prose, poetry, drama). Emphasis on the Harlem Renaissance and black writing in the 1960s. Writers studied include Jean Toomer, Claude McKay, Langston Hughes, Stirling Brown, Richard Wright, James Baldwin, Gwendolyn Brooks, Ralph Ellison, Toni Morrison, Amiri Baraka (LeRoi Jones), and Alice Walker. Mr. Yarborough

145. Ellingtonia. The music of Duke Ellington, his life, and the 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 United States. Covers the many contributions of other artists who worked with Ellington, such as composer Billy Strayhorn and musicians Johnny Hodges, Cooties Williams, and Mercer Ellington. Mr. Burrell (W)

M158A. Comparative Slavery Systems. (Same as History M158A.) Lecture, three hours. An examination of the slavery experience in various New World slave societies, with emphasis on outlining the similarities and the 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. A survey of the Afro-American experience, with emphasis on the three great transitions of Afro-American life: the transition from Africa to New World slavery, the transition from slavery to freedom, and the transition from rural to urban milieus.
Ms. Creel, Mr. Hill

M164. The Afro-American Experience in the United States. (Same as Anthropology M164.) Promotes understanding of contemporary sociocultural forms among Afro-Americans in the United States by presenting a comparative and diachronic perspective on the Afro-American experience in the New World. Emphasis on the utilization of anthropological concepts and methods in understanding the origins and maintenance of particular patterns of adaptation among black Americans. Ms. Mitchell-Kernan (F)

M172. The Afro-American Woman in the U.S. (Same as Psychology M172 and Women's Studies M172.) Prerequisite: upper division standing. The impact of the social, psychological, political, and economic forces which impact on the interpersonal relationships of Afro-American women as members of a large society and as members of their biological and ethnic group. Ms. Mays

M197. Topics in Afro-American Literature. (Same as English M197.) A 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. Mr. Yarborough

197B. Special Studies in Comparative Literature: Caribbean Literature. A general introduction to the 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.

Graduate Courses

M200A. Advanced Historiography: Afro-American. (Same as History M200V.) Seminar, three hours. May be repeated for credit. Ms. Creel

200B. Seminar in the Political Economy of Race. Prerequisite: consent of instructor. A seminar on political economy, with special reference to black political economy and with focus on the dynamics of allocation of wealth and power resources among social classes and racial and ethnic groups in the United States. Presented in a context that is at once comparative and international, the seminar emphasizes internationalism and transnationalism as well as the uniqueness of the Afro-American condition. It attempts to relate the black condition in the United States to the socioeconomic system of this country and to compare it to the 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. Light, Mr. Oliver

M200D. Afro-American Sociolinguistics: Black English. (Same as Anthropology CM243Q.) Lecture, three hours. Prerequisite: consent of instructor. Basic information on Black American English, an important minority dialect in the United States. The social implications of minority dialects examined from the perspectives of their genesis, maintenance, and social functions. General problems and issues in the fields of sociolinguistics examined through a case study approach. Students are required to conduct research in consultation with the instructor, as well as participate in group discussion.
Ms. Mitchell-Kernan (W)

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 the aesthetic, cultural, and social backgrounds of Afro-American writing. May be repeated for credit.

200F. African-American Psychology. (Formerly numbered 220B.) Seminar. Prerequisite: consent of instructor. Survey of the psychological literature as it pertains to persons of African-American descent. A critical review of the implications of "mainstream" research on African-Americans, including a 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. Mr. Fairchild (Sp)

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.

270A. Research Methods. (Formerly numbered 220A.) Seminar. Prerequisite: consent of instructor. An introduction to a variety of research methods, including experimental, quasi-experimental, observational, and survey research methodologies. The functions of research, research proposal writing, theory development and hypothesis testing, sampling theory, data collection, data processing and analysis, and interpretation. The ethics of research and preparing the research report.

270B-270C. Research Seminar. (Formerly numbered 220B-220C.) Prerequisite: consent of instructor. Designed to provide students with an opportunity to put their research skills into practical application. During the first quarter, all students meet under the direction of a faculty member and engage in a colloquium in which they share conceptual schemata and research design. Students spend the second quarter completing their projects.

596. Directed Readings and Tutorials. Provides students with an umbrella under which they can pursue specialized interests from which there is insufficient demand to warrant offering a formal course.

American Indian Studies
(Interdepartmental)

3220 Campbell Hall, (213) 825-7315

Professors

Richard L. Abel, LL.B., Ph.D. *(Law)*
Robert A. Georges, Ph.D. *(English)*
Carole E. Goldberg-Ambrose, J.D. *(Law)*
James N. Hill, Ph.D. *(Anthropology)*
Pamela L. Munro, Ph.D. *(Linguistics)*
Gary B. Nash, Ph.D. *(History)*
Allegra Snyder, M.A. *(Dance)*

Associate Professors

Charlotte A. Heth, Ph.D. *(Music)*
James H. Johnson, Ph.D. *(Geography)*
Paul V. Kroskrity, Ph.D. *(Anthropology)*
Kenneth R. Lincoln, Ph.D. *(English)*
Jeffrey Prager, Ph.D. *(Sociology)*

Assistant Professors

Duane Champagne, Ph.D. *(Sociology)*
Jennie Joe, Ph.D. *(Anthropology)*
Melissa L. Meyer, Ph.D. *(History)*

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. in American Indian Studies was established here.

The M.A. 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. They will graduate with the training they 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: anthropology, English, history, linguistics, literature, sociology, fine arts, or American Indian studies.

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. Admission to the program is limited to the Fall Quarter. 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.

Major Fields or Subdisciplines

The American Indian Studies M.A. is an interdepartmental program with 10 participating academic schools and departments: Anthropology, Art, Dance, English, History, Law, Library and Information Science, Linguistics, Music, and Sociology. The 10 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 schools and departments: Architecture and Urban Planning, Education, Political Science, Social Welfare, and Psychology.

Foreign Language Requirement

Students in the M.A. program must successfully complete Linguistics 114, which has been designed to show how languages are primary vehicles for understanding American Indian culture.

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 must be taken in the first year), and Linguistics 114, 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 will 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 will be selected by you with the consent of the program committee. Copies of the thesis must be submitted to each member of the committee by the fifth week of the quarter in which you expect to graduate. If you choose the comprehensive examination plan, you must demonstrate in written 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 the American Indians (cultural area); Dance and Music of the American Indians (cultural area); American Indian Policy. Topics are announced in the *Schedule of Classes*. May be repeated twice for credit. (F,W,Sp)

Graduate Courses

M200A. Advanced Historiography: American Indian Peoples. (Same as History M200W.) Seminar, three hours.

M200B. Cultural World Views of Native America. (Formerly numbered 200B.) (Same as English M266.) Seminar, three hours. Exploration of written literary texts drawn from oral cultures and 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 drawn from literary analysis, structural anthropology, folklore, linguistics, and ethnomusicology. Ms. Heth, Mr. Lincoln

M200C. Contemporary Issues of the American Indian. (Formerly numbered 200C.) (Same as Anthropology M269.) Introduction to the most important issues facing American Indians as individuals, communities, tribes, and organizations in the contemporary world, building on the historical background presented in course M200A and the cultural and expressive experience of American Indians presented in course M200B. Ms. Heth, Ms. Joe

201. Topics in American Indian Studies. Discussion, three hours. Prerequisite: consent of instructor.

Anthropology

341 Haines Hall, (213) 825-2055

Professors

C. Rainer Berger, Ph.D.
Nicholas Blurton Jones, Ph.D.
William O. Bright, Ph.D.
Christopher B. Donnan, Ph.D.
Robert B. Edgerton, Ph.D.
Peter B. Hammond, Ph.D.
James N. Hill, Ph.D.
Allen W. Johnson, Ph.D.
John G. Kennedy, Ph.D.
Lewis L. Langness, Ph.D.
Jacques Maquet, Ph.D.
Clement W. Meighan, Ph.D.
Claudia Mitchell-Kernan, Ph.D.
Michael Moerman, Ph.D.
Henry B. Nicholson, Ph.D.
Wendell H. Oswalt, Ph.D.
Merrick Posnansky, Ph.D.
Douglass Price-Williams, Ph.D.
James R. Sackett, Ph.D.
Thomas S. Weisner, Ph.D.
Johannes Wilbert, Ph.D.
Bobby Joe Williams, Ph.D.
Joseph B. Birdsell, Ph.D., *Emeritus*
Walter R. Goldschmidt, Ph.D., *Emeritus*
Hilda Kuper, Ph.D., *Emeritus*
William A. Lessa, Ph.D., *Emeritus*

Associate Professors

Timothy Earle, Ph.D.
Gail E. Kennedy, Ph.D.
Paul V. Kroskrity, Ph.D.
Philip L. Newman, Ph.D.
Dwight Read, Ph.D.
Susan C. Scrimshaw, Ph.D.

Assistant Professors

Robert C. Bailey, Ph.D.
Jennie Joe, Ph.D.
Nancy E. Levine, Ph.D.
Sylvia Rodríguez, Ph.D.
Nazif M. Shahrani, Ph.D.

Adjunct Professors

Bernard G. Campbell, Ph.D.
Gerardo Reichel-Dolmatoff, Ph.D.

Adjunct and Visiting Assistant Professors

Douglas Hollan, Ph.D., *Visiting*
Larry Mai, Ph.D., *Adjunct*
Jane Wellenkamp, Ph.D., *Visiting*

Scope and Objectives

Anthropology today is classed as a social science, but its roots are in both the biological sciences and humanistic studies. It still constitutes a bridge linking these three areas of knowledge, and the department has strong ties with other disciplines ranging from anatomy and genetics to linguistics, classics, and fine arts.

The department recognizes the following five fields in anthropology:

Archaeology is the study of cultures of the past, where knowledge of their characteristics is obtained primarily from material evidence left in the ground, supplemented in some cases by historical and inscriptional records.

Biological anthropology studies the diversity of the human physical characteristics and the biological characteristics underlying human behavior. The faculty in this field specializes in one of four subfields: (1) primatology or the study of the characteristics of monkeys and apes; (2) paleoanthropology, the study of fossil hominids and the evolution of man; (3) human genetics; and (4) evolutionary ecology of human and nonhuman primates.

Cultural anthropology is the investigation of ideational systems, including religious beliefs and mythologies, philosophical and other cognitive conceptions, world views and aesthetic configurations, and technologies transmitted from generation to generation.

Linguistic anthropology examines the diversity of natural languages and other communicative systems, the sociocultural patterning of their use, and their relationship to the cultural knowledge of their speakers.

Social anthropology, closely tied to sociology, studies the structure of human communities and the institutionalized social interaction systems. It examines the diversity of family forms and kinship, governance and political systems, law and the resolution of conflict, economic collaboration, social status and role, and certain aspects of religion.

Cutting across the five fields are three other categories of course offerings: the **anthropology of social action, regional cultures,** and **history and theory.**

The department offers the Bachelor of Arts degree 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 medicine, public health, nursing, law, education, and social welfare. 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 Majors

Required: Anthropology 1, 2, 5, 6. All courses must be taken for a letter grade.

All undergraduate anthropology majors must earn a minimum grade of C in all anthropology courses required for the major and must maintain a minimum 2.0 GPA in the major overall.

The Majors

The Department of Anthropology offers a choice between two undergraduate majors:

(1) General major

(2) Preprofessional major

To provide a comprehensive understanding of the disciplines as a whole, you must take at least one course in each of the five fields (see "Scope and Objectives" above). One core course is offered in each field (archaeology offers a choice of two), but you may take any course to fulfill this requirement if the prerequisites have been met.

The **general major** is designed for students interested in an anthropological understanding of human behavior who plan to pursue personal or professional goals other than those of anthropologists. Students taking the general major must complete 14 (four-unit) upper division courses for a letter grade as follows:

(1) One upper division course in each of the five fields: archaeology, biological anthropology, cultural anthropology, linguistic anthropology, and social anthropology.

(2) One upper division course in the category of regional cultures.

(3) Four additional upper division courses in anthropology.

(4) Four upper division courses (unless otherwise designated) in related fields drawn from a list maintained in the department.

The **preprofessional major** is designed primarily for students planning to make a career in anthropology and is expected of students entering the graduate program in anthropology at UCLA. Students taking the preprofessional major must complete 16 (four-unit) upper division courses for a letter grade as follows:

(1) One upper division course in each of the five fields: archaeology, biological anthropology, cultural anthropology, linguistic anthropology, and social anthropology.

(2) One upper division course in the category of regional cultures.

(3) Two upper division courses in the category of history and theory.

(4) One course in statistics (this requirement will normally be met by taking Anthropology 186A but may also be met by courses drawn from a list maintained in the department).

(5) Three or four additional upper division courses in anthropology.

(6) Three or four upper division courses (unless otherwise designated) in related fields drawn from a list maintained in the department.

(7) Competence in a foreign language (see below).

Foreign Language

For the preprofessional major the department requires proficiency in one foreign language to ensure that you have the communication skills and cultural insights offered by such proficiency. Any spoken language or any extinct language with a substantial body of literature is acceptable. This requirement may be met by (1) completing the fifth quarter of one foreign language or (2) demonstrating foreign language proficiency at level five. Courses taken to satisfy the foreign language requirement may be taken on a Passed/Not Passed basis and may be applied toward satisfaction of the Letters and Science general education requirements in the humanities.

Honors Program

The honors program is designed for majors who are interested in carrying out an independent research project that will culminate in an honors paper. A special honors seminar is 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. Anthropology 198A, 199HA, 199HB, and 199HC are required. Course 199HA should be taken in the Spring Quarter of the junior year; honors students then take courses 199HB and 199HC in the Fall and Winter Quarters of their senior year (to write the honors paper).

Graduate Study

Admission

Admission to the graduate program in anthropology is ordinarily restricted to the Fall Quarter. For admission in the Winter or Spring Quarters, you must make a formal written request to the departmental admissions committee. 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 will be 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 the following dates to be considered for admission for:

Winter Quarter 1987 — October 1, 1986
Spring Quarter 1987 — December 30, 1986
Fall Quarter 1987 — December 30, 1986

The Graduate Admissions Office (Graduate Division, 1247 Murphy Hall, UCLA, Los Angeles, CA 90024) requires submission of an official application; official transcripts of record, in duplicate, from each college or university at which work has been completed; and a statement of purpose.

In addition, you must submit the following directly to the Graduate Counselor (Department of Anthropology, 341 Haines Hall, UCLA, Los Angeles, CA 90024):

(1) Three letters of recommendation (preferably from anthropologists).

(2) Graduate Record Examination (GRE) scores.

(3) A research or term paper.

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 Educational Testing Service (ETS) examination in a foreign language with a score of 500 or better.

(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 have the requirement waived. Formal written petition for such waiver should be submitted to the guidance committee, department chair, and the Graduate Division.

Core Course Requirements

You may demonstrate basic knowledge in the five 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 the 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 quarter, but this requirement may be waived by petition to the department chair. An M.A. degree requires nine courses (36 units) taken for a letter grade with a minimum 3.0 grade-point average.

(1) Four courses may be upper division (100 series).

(2) At least five must be graduate seminars (200 series).

(3) Three courses may be outside the major with consent of the guidance committee.

(4) Two courses may be anthropology independent studies (see department for course numbers) with consent of the committee.

Eight units of Anthropology 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.

Comprehensive Examination Plan

The master's degree program is on the comprehensive examination plan. The examination consists of two parts: (1) a written examination and (2) a master's paper.

Written Examination: You must pass an examination in one of the five fields to demonstrate competence and intellectual promise in the field of specialization. This examination must be taken in the Spring Quarter and, in case of failure, may be taken a second time the following year. Students admitted in Winter or Spring Quarter who have the equivalent of two quarters or more of graduate work in anthropology are required to take the examination in the Spring Quarter of their first year. Students not having an adequate background must take it the following academic year.

Master's Paper: You must submit an original paper based on field, laboratory, or library research by the end of your fifth quarter in residence. The guidance committee will assist you in formulating the research paper, monitoring its progress, and evaluating the paper after you submit it. In this assignment, you are urged to work closely with your advisers.

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 will have to satisfy all master's degree requirements with the exception of the master's paper. 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 will a student be 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 quarter after receiving the M.A. degree. The written examination must be completed within the first eight weeks of the given quarter; the University Oral Qualifying Examination is expected to be completed in the same quarter, but no later than the following term.

The format for the written examination is to be determined by the doctoral committee which will examine you in three subfields of your choice. Two of these three subfields will be drawn from a list available in the department; the third will be 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 Examination

This examination, administered by the doctoral committee, focuses on your dissertation and is required of all candidates. It may be waived by petition to the Graduate Division with consent of the doctoral committee.

Lower Division Courses

1. The Principles of Human Evolution: Genetic Basis. Lecture, three hours; discussion, one hour. Required as preparation for the major. Human population biology in the conceptual framework of evolutionary processes. Emphasis on the genetic basis of evolution, population biology, and diversity among living populations.

2. The Principles of Human Evolution: Comparative Analysis. Lecture, three hours; discussion, one hour. Required as preparation for the major. Not open for credit to students with credit for course 11. Human population biology in the conceptual framework of evolutionary processes. Emphasis on comparative primate behavior, structural anatomy, and the fossil record.

5. Principles of Cultural Anthropology. Lecture, three hours; discussion, one hour. Required as preparation for the major. Not open for credit to students with credit for course 22. The character of culture and nature of social behavior as developed through anthropological study of contemporary peoples.

6. Culture History. Lecture, three hours; discussion, one hour. Required as preparation for the major. The development of culture from its first beginnings to the advent of writing, as developed through archaeological investigation.

11. The Evolution of Man. Lecture, three hours; discussion, one hour. Does not satisfy major requirements. Not open for credit to students with credit for course 2. Emphasis on evolutionary processes and the evolutionary past of the human species.

22. General Cultural Anthropology. Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 5. An introduction to the cultural understanding of human behavior designed for students who do not plan further work in anthropology. Emphasis on those concepts and theories that are applicable to everyday life and professional activities in the modern world. Examples of institutions and individual behavior of modern America counterpointed against studies of primitive life.

33. Culture and Communication. Lecture, three hours. The role of culture in structuring how people communicate with one another, with emphasis on the importance of language as a symbolic guide to one's culture. Topics include cultural differences in verbal and nonverbal behavior, imagined and actual differences in male and female speech, language and education, verbal style and interactional strategy, language taboos, and the sociocultural factors which promote and retard language change. Emphasis on patterns of language use, rather than details of language structure.

44. Culture and the Visual Arts. Lecture, two hours; discussion, one hour. In our contemporary urban societies, looking at art objects and other aesthetic forms is a significant part of our everyday cultural experience. The anthropological approach offered helps achieve a better understanding of the formal qualities and the symbolic meanings of Western and non-Western art objects present in our visual environment. Mr. Maquet

Upper Division Courses

Courses 1 and 2, 5, 6, or upper division standing are prerequisite to all upper division courses, unless otherwise stated. All upper division courses with letter designations (A, B, P, Q, etc.) may be taken independently unless otherwise stated.

Archaeology

110. World Archaeology. Prerequisite: upper division standing or consent of instructor. A broad survey of human culture history from its Stone Age beginnings to the establishment of the primary civilizations of the Old and New Worlds. Intended for students with a general interest in archaeology and in an anthropological approach to the study of the past. (Alternate core course for archaeology field.) Mr. Sackett

111. The Study of Archaeology. A 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. (Alternate core course for archaeology field.) Mr. Hill

112. Old Stone Age Archaeology. Prerequisite: course 6 or consent of instructor. The 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 the relationship between human cultural and biological evolution. Mr. Sackett

113P. Archaeology of North America. Prerequisite: course 5, 6, or 22, or consent of instructor. Prehistory of the North American Indians; the evolution of Indian societies from earliest times to (and including) contemporary Indians; approaches and methods of American archaeology. Mr. Meighan

113Q. The Prehistory of California Indian Cultures. Examination of the California archaeological record from earliest human evidence to historic times, with emphasis on the development of cultural diversity. Mr. Meighan

113R. Southwestern Archaeology. Examination of the 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 the "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. Mr. Nicholson

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. Nicholson

114R. Ancient Civilizations of Andean South America. Prerequisite: course 5, 6, or 22. 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. Prerequisite: consent of instructor. Procedures of archaeological excavation, mapping, stratigraphy, collecting, and recording of archaeological data (field class conducted off campus).

115Q. Archaeological Research Techniques. Prerequisite: course 6 or consent of instructor. An introduction to the techniques of discovery and analysis that archaeologists have found useful in research. Special attention to sampling, typology, and locational analysis. Consideration of techniques for the measurement of such important variables as population size, diet, seasonality, specialization, and exchange. Mr. Hill

115R. Strategy of Archaeology. Prerequisite: course 6 or consent of instructor. An introduction to problem formulation, theory, and method in archaeology, with emphasis on the 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.) A survey of the aims and methods of historical archaeology as practiced on both sides of the Atlantic, with case studies drawn from North America, the Caribbean, Africa, and Europe. Mr. Posnansky

116P. Laboratory Analysis in Archaeology. Lecture, three hours. Prerequisite: consent of instructor. Preparation of archaeological reports for publication. Laboratory description of archaeological collections: typology, documentation, preparation of illustrations, and presentation of archaeological data for scholarly publications. Students work with museum collections of archaeological finds: ceramics, basketry, implements of bone, stone, and shell. Mr. Meighan

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

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 the 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 the 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. Prerequisites: courses 1, 2, or equivalent. Limited to majors and graduate students in anthropology. A survey of biological anthropology including all major subareas. A lecture/seminar format requires attendance at a recitation section in addition to lectures. (Core course for biological field.) Mr. Williams

121A. Fossil Man and His Culture. Recommended prerequisites: courses 1, 2. Course 121A should be taken before 121B and 121C. Introduction to method and theory in paleoanthropology. Primate evolution, Cretaceous through the Miocene. Ms. Kennedy

121B. The Australopithecines. Prerequisite: consent of instructor. Recommended: courses 1, 2, 121A. The morphology, ecology, and behavior of the genus *Australopithecus*. The history of their discoveries and their place in human evolution. Ms. Kennedy

121C. Evolution of the Genus *Homo*. Prerequisite: consent of instructor. Recommended: courses 1, 2, 121A, 121B. The origin and evolution of the genus *Homo*, including archaic sapiens and the Neanderthals. The morphology, ecology, and behavior of these groups. Course ends with the appearance of modern man. Ms. Kennedy

122. Biology, Society, and Culture. Prerequisite: course 2. An investigation of the interaction between human biology and human behavior. Particular emphasis on the influences of human biological evolution on human cultural evolution and human cultural evolution on human biological evolution.

123. Human Genetics. Recommended prerequisite: course 1. Discussion of the 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 the development of observed patterns of human biological variation.

123P. Aging: An Anthropological Perspective. Lecture, three hours. An exploration of aging from an evolutionary and cross-cultural perspective. A survey of the mechanisms of mammalian aging, population demography and life-table modification, age-group systems, and the effects of modernization on these systems in non-Western societies. Mr. Mai

124. Evolution and Biology of Human Behavior. A comparative survey of the 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 the evolution of human culture.

124P. Evolution of Human Sexual Behavior. Lecture, three hours. Prerequisite: consent of instructor. Recommended: course 1, 2, or 11 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

125A-125B. The Genetics of Human Diversity. Course 125A or equivalent is prerequisite to 125B. A survey of human biological diversity. Emphasis on genetics at the population level for both discrete and quantitative variation. Analytic methods and evolutionary hypotheses.

127P. Primate Evolution. Prerequisite: upper division standing. A survey of the primate paleontological and evolutionary record, encompassing prosimians, New and Old World monkeys, and hominoids. Attendant aspects of paleoecology and behavior.

128A-128B. Primate Behavior Nonhuman to Human. Prerequisite: upper division standing. Course 128A is prerequisite to 128B. Review of primate behavior as known from laboratory and field studies. Theoretical issues and the evolution of causal processes, structure and function of animal behavior, with special reference to nonhuman primates. Discussion of human behavior as the product of such evolutionary processes. In Progress grading.

129P. Laboratory Methods in Biological Anthropology: Skeletal. Prerequisites: courses 1, 2, consent of instructor. Limited to majors and graduate students. Laboratory methodology and analysis of human variation on skeletal material.

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 a worldwide scope, although there is some emphasis on the New World. Ms. Kennedy

Cultural Anthropology

130. The Study of Culture. Lecture, three hours. Prerequisite: one lower division anthropology course or equivalent. The 20th-century elaboration and development of the concept of culture from the Boasian period to the present. Survey of the major schools of anthropological thought, such as historical particularism, psychological anthropology, functionalism, cultural materialism, structuralism, and symbolic anthropology. Examination of the utility of the culture concept in more applied areas of anthropology. (Core course for cultural field.)

130P. The Study of the Individual in Society and Culture. Lecture, three hours. Prerequisite: course 5 or 22 or consent of instructor. Examination of the relationships between the individual and society and culture. Topics include the extent to which individuals shape and are shaped by social and cultural systems, the role of the individual in social and cultural change, assumptions about human nature and individual needs and goals in social theory, the relationship between personality and role and between "private" and "public" symbols, individual variation within and between cultures, and deviance and abnormality. Mr. Hollan, Ms. Wellenkamp

131. American Culture. Prerequisite: upper division standing. An examination of American life in historical and contemporary terms, with special reference to the individual life cycle, in order to offer a systematic analysis of American culture and society in a cross-cultural perspective. Mr. Oswalt

132. Technology and Environment. Significance of material culture in archaeology and ethnology; problems of invention and the acceptance of innovations; the ecological and sociological concomitants of technological systems; selected problems in material culture.

133P. Social and Psychological Aspects of Myth and Ritual. The social and psychological significance of myth, ritual, and symbolism, with particular attention to anthropological theories and interpretations of religious belief systems. Ms. Levine

133Q. Symbolic Systems. Prerequisite: upper division standing or consent of instructor. An analysis of the anthropological research and theory on the cultural systems of thought, behavior, and communication expressed in a symbolic mode (as distinguished from the discursive, instrumental, and causal modes). Methods for the study of symbolic meaning, including the experiential approach. Mr. Maquet

133R. Aesthetic Anthropology. Prerequisite: upper division standing. Elaboration of a cross-cultural notion of visual aesthetic phenomena that meets the requirements of anthropological research. Aesthetic phenomena as cultural; their integration in a cultural system; their relationships with other elements in the interplay of social forces. Mr. Maquet

134. Personality and Cultural Systems: Enculturation. Prerequisite: upper division standing or consent of instructor. The relationship between individual and culture, with focus on enculturative learning as modality of personality forms and internal dynamics of culture change. Major emphasis on cultural influences of cognition, perception, thought processes, socialization, and development of value. Mr. Wilbert

134P. Anthropology of Self and Identity. Lecture, three hours. Prerequisite: course 22 or equivalent. Survey of the anthropological literature on person, self, and identity. Examination of the conceptual and theoretical relationships among these terms as well as an exploration of their use in contemporary ethnography. P/NP or letter grading. Mr. Hollan

135A. Introduction to Psychological Anthropology: Historical Development. (Formerly numbered 135P.) Lecture, three hours. Prerequisite: course 22 or consent of instructor. Survey of the field of psychological anthropology, with emphasis on the early foundations and historical development of the field. Topics include the study of personality, pathology and deviance, altered states of consciousness, cognition, motivation, and emotion in different cultural settings. P/NP or letter grading. Ms. Wellenkamp

135B. Introduction to Psychological Anthropology: Current Topics and Research. (Formerly numbered 135P.) Lecture, three hours. Prerequisite: upper division standing or consent of instructor. Survey of the field of psychological anthropology, with emphasis on current topics and research. Topics include the study of personality, pathology and deviance, altered states of consciousness, cognition, motivation, and emotion in different cultural settings. P/NP or letter grading. Mr. Hollan

135Q. The Individual in Culture. Prerequisite: upper division anthropology, sociology, or psychology standing. The balance for freedom and determinism for individuals and societies in the interrelation of personality, social structure, and culture. Survey of the nature and limits of human plasticity; the variability and uniformity of personality within and between cultures; the relation of normal and abnormal conformity and deviance.

135R. Cross-Cultural Socialization and Childhood. Lecture, three hours. Introduction to ethnographic data on socialization and child training. Theories explaining cross-cultural variability in socialization practices. Current methods and research topics in the field. Mr. Weisner

135S. Anthropology of Deviance and Abnormality. Lecture, three hours. Prerequisites: course 22 or equivalent, consent of instructor. The relationship between culture and the recognition of, responses toward, and forms of deviant and abnormal behavior. Mr. Hollan

136P. Ethnology: Field Training. Training in ethnographic field methods. Execution of individual and group ethnographic field research projects.

M136Q. A Laboratory for Naturalistic Observations: Developing Skills and Techniques. (Same as Psychiatry M112 and Psychology M155.) Prerequisite: consent of instructor. The 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 the social sciences. Mr. Gallimore, Mr. Turner, Mr. Weisner (W)

137. Ethnography on Film. Intensive examination of filmed and written ethnographies of a wide range of the world's peoples, with the purposes of (1) comparing visual with written data and evidences and (2) developing criteria for adequate written and film ethnography. Mr. Moerman

138. Methods and Techniques of Ethnohistory. Introduction to the problems and procedures of extracting cultural data from documentary sources and their interpretation and analysis. The relevant documentary sources of various New World regions are selected as case histories to illustrate more concretely the problems and challenges in this major area of anthropological concern. Mr. Nicholson

139. Field Methods in Cultural Anthropology. Lecture, three hours. Prerequisite: upper division standing. Corequisite: course 139L. Introduction to the 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. Mr. Wilbert

139L. Field Methods in Cultural Anthropology. Laboratory, three hours. Prerequisite: upper division standing. Corequisite: course 139. A 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. Mr. Wilbert

Linguistic Anthropology

M140. Language in Culture. (Same as Linguistics M146.) Prerequisite: upper division standing or consent of instructor. The study of language as an aspect of culture; the relation of habitual thought and behavior to language; and language and the classification of experience. A holistic approach to the study of language, with emphasis on the relationship of linguistic anthropology to the fields of biological, cultural, and social anthropology, as well as archaeology. (Core course for linguistics field.) Mr. Kroskrity

141. The Ethnography of Communication: Introduction and Practicum. Prerequisite: upper division standing or consent of instructor. Course has two interrelated objectives: (1) to introduce students to the ethnography of communication—the description and analysis of situated communicative behavior — and the sociocultural knowledge which it reflects and (2) to train students to recognize, describe, and analyze the relevant linguistic, proxemic, and kinesic aspects of face to face interaction. Mr. Kroskrity

142A-142B. Human Social Ethology. Prerequisite: consent of instructor. Course 142A is a strongly recommended prerequisite to 142B. Students make primary records (sound tape, videotape, or film) of naturally occurring social interactions. These are analyzed in class for the interactive tasks, resources, and accomplishments displayed. Laboratory and fieldwork outside of class and minimal fees to offset costs of equipment maintenance and insurance required. Mr. Moerman

143A. Field Methods in Linguistic Anthropology: Practical Phonetics. Practice in elicitation from informants for the purposes of analysis of phonological systems and development of practical transcription, as a preliminary to learning to speak the native language and to the recording of ethnographic materials in native language. No prior experience in linguistics is assumed. Mr. Kroskrity

143B. Field Methods in Linguistic Anthropology: Syntax, Semantics, Textual Cohesion. Prerequisite: course 143A, equivalent experience, or consent of instructor. The skills and strategies necessary for conducting investigations into the syntactic, semantic, and textual (or discourse) structures of field languages. Practice with native speakers of various non-Indo-European languages is an important aspect of student participation. Mr. Kroskrity

144. American Indian Ethnolinguistics and Sociolinguistics. Prerequisite: prior coursework in either anthropology, linguistics, or American Indian studies. Introduction and comparative analysis of the 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. Kroskrity

C145. Afro-American Sociolinguistics: Black English. Lecture, three hours. Prerequisite: consent of instructor. Basic information on Black American English, an important minority dialect in the United States. The social implications of minority dialects examined from the perspectives of their genesis, maintenance, and social functions. General problems and issues in the fields of sociolinguistics examined through a case study approach. Concurrently scheduled with course CM243Q. Ms. Mitchell-Kernan (W)

Social Anthropology

150. The Study of Social Systems. Lecture, three hours. Prerequisite: course 5 or 6 or Sociology 1 or consent of instructor. The general principles of the organization of society; the relation of these to the technological complexity and ecological conditions of the culture; the principles of evolutionary development of social systems. (Core course for social field.) Mr. Goldschmidt

151. Marriage, Family, and Kinship. Prerequisite: course 5 or 22. A survey of marital patterns, descent, and family structure in a range of societies. Emphasis on the relationship between kinship and other aspects of the sociocultural system and on the 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. The relations of political institutions to other institutions of society. Ms. Levine

152P. Comparative Systems of Social Inequality. Lecture, three hours. Prerequisite: course 5 or 22 or consent of instructor. Exploration of the cultural causes and consequences of systems of social inequality based on rank, caste, class, ethnicity, or sex, with examples from Asian, Pacific, European, African, and American societies. Mr. Hammond

153A-153B. Production and Exchange in Traditional Societies. A 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 the context of ethnographic evidence from a wide variety of cultural systems. **153A.** Nonstratified Societies; **153B.** Stratified Societies. Mr. Earle, Mr. Johnson

154. Principles of Social Structure. Prerequisites: course 5 or 22 or Sociology 1, upper division standing in anthropology or sociology. The methods and theory which derive from Emile Durkheim in France and Radcliffe-Brown in England. The variety of approaches and concerns in social anthropology. Use of ethnographic material to illustrate the methods and concepts used by social anthropologists. Ms. Levine

155. Illness in Non-Western Societies. Prerequisites: course 5 or 22 or Sociology 1 and upper division standing, or consent of instructor. An analysis of the cultural modes of thought and social structures associated with illness in non-Western societies. Emphasis on the social roles involved in the diagnosis and curing. Ms. Levine

156. Comparative Religion. A survey of various methodologies in the comparative study of religious ideologies and action systems, including the understanding of particular religions through descriptive and structural approaches, and the identification of social and psychological factors which may account for variation in religious systems cross-culturally. Mr. Newman

157. Intentional Communities. Prerequisite: upper division standing or consent of instructor. Communes and monasteries, ashram and kibbutz are voluntarily joined societal units, offering complete life-styles perceived as alternatives to the mainstream cultures and stressing the affective involvement of the members. Discussion in a comparative perspective of questions such as the following: institutional goals stated in the community's "charter"; system of acquisition or production; internal organization; ideational configurations; individual experience; sociological and psychological functions; criteria of success and failure; subculture and counterculture. Mr. Maquet

158. Hunting and Gathering Societies. Prerequisite: course 5. A 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. This synthesis is used as a basis for illustrating the relevance of hunting and gathering societies as an understanding of complex societies. Mr. Read

Social Action/Applied Anthropology

160. Introduction to Social Action Anthropology. Lecture, three hours. Prerequisites: course 5 or 22 and upper division standing, or consent of instructor. Application of anthropology to such domestic and international issues as poverty, discrimination, public health, mental health, child welfare, education, delinquency and drug abuse, aging, housing and community organization, economic development, environmental protection, population control, diplomacy, warfare and revolution, the protection of native peoples, disaster relief, and refugee resettlement. Survey of career opportunities in applied anthropology. Mr. Hammond

160P. Internships in Applied Anthropology. Prerequisite: course 160. Designed to give students firsthand experience working in agencies in the public and private sectors (e.g., hospitals, mental health clinics, community development agencies, schools, etc.) selected for their relevance to students' prospective professional interests in applied anthropology. Eight to 12 hours in the field, complemented by weekly seminars, field evaluations, and the preparation of a field journal. Mr. Hammond

161. Development Anthropology. Prerequisites: course 5 and upper division standing, or consent of instructor. Comparative study of the peasantization of tribal peoples, the proletarization of peasants, and the urbanization of ruralities. Particular emphasis on the relation between national, international, and localized sociocultural systems; the theory of social movements. Alternative theoretical constructs critically discussed. Ms. Levine

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.

M163. Women in Culture and Society. (Same as Women's Studies M163.) Prerequisite: course 5 or 22. A systematic approach to the study of sex roles from an anthropological perspective. A critical review of relevant theoretical issues supported by ethnographic material from traditional cultures and contemporary American culture. Ms. Joe, Ms. Levine

M164. The Afro-American Experience in the United States. (Same as Afro-American Studies M164.) Promotes understanding of contemporary sociocultural forms among Afro-Americans in the United States by presenting a comparative and diachronic perspective on the Afro-American experience in the New World. Emphasis on the utilization of anthropological concepts and methods in understanding the origins and maintenance of particular patterns of adaptation among black Americans. Ms. Mitchell-Kernan (F)

165. Demographic Problems in Nonindustrial Societies. Prerequisite: course 5 or 22. The dynamic interaction between environment, cultural belief, social structure, and population in hunting and gathering, pastoral, horticultural, and agricultural societies. The principle theories of population change and current issues in population policy considered in light of the anthropological evidence. Ms. Levine

166. Comparative Minority Relations. Prerequisites: courses 5, 6. Comparative study of minority relations, social discrimination, and prejudice. Emphasis on cross-cultural perspectives and psychocultural analysis. Cases are taken from the U.S., Latin America, India, and other areas. Discussion of the factors responsible for discrimination and the cultural-psychological consequences of class, caste, or minority status of the individuals. Ms. Rodríguez

M166P. Mexican and Chicano Folklore in Cultural Context. (Same as Folklore M109.) Lecture, three hours. Prerequisite: consent of instructor. A historical and sociocultural survey of the folklore of peoples of Mexican cultural background within Mexico and the United States. Emphasis on folklore as indices of Mexican and Chicano identity, as communicated through such traditional forms as narrative, song, music, customs, beliefs, crafts, and foodways.

167. Urban Anthropology. Open to upper division majors in the social sciences, and others with consent of instructor. A survey of urbanization throughout the world, with emphasis on urban adaptation of rural migrants. Special focus on the problems of rural-urban migration of ethnic minority groups and subsequent adaptation of them within the United States explored in terms of the methods and perspectives of anthropology. Ms. Rodríguez

167P. Psychoanalysis and Anthropology. 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

M168. Health in Culture and Society. (Same as Nursing M158.) Prerequisite: upper division standing. An examination of the 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.

169. Modernization in the Middle East. Lecture, three hours. Prerequisite: course 5 or 22 or consent of instructor. Exploration of how Middle Eastern Muslim societies have responded to contemporary Western challenges — political, economic, technological, cultural, and military. Critical examination of contrastive models of economic development and nation-building policies employed by Turkey, Egypt, Iran, and Saudi Arabia and their consequences for these countries and the region. Mr. Shahrani

Regional Cultures

Africa

171. Civilization of Sub-Saharan Africa. Prerequisite: upper division standing or consent of instructor. A 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. Maquet

North America

172P. North American Indian Cultures. An examination of American Indian cultures from early historic time to modern development. Mr. Oswalt

172Q. Cultures of the California Indians. An examination of the cultural diversity of the Indians of California: their technology, social organization, and religions. Mr. Meighan

172R. Cultures of the Pueblo Southwest. Prerequisite: course 5, 6, 22, upper division standing, or consent of instructor. A survey of ethnographic and ethnohistorical research of the Pueblo Indians (Hopi, Zuni, Tanoan, and Keresan) and their immediate neighbors. Basic information on the history, languages, social organization, and traditional cultural systems of these groups. Mr. Kroskrity

172S. Theory and Method in the Pueblo Southwest. Prerequisite: course 172R or consent of instructor. Selected problems in Southwestern ethnology, viewing the Pueblo Southwest as an important locus for anthropological theory and method. Exploration of such theories as early culture and personality theory, functionalism, and symbolic anthropology in their application to the Pueblos and the Navajo. Methodological considerations include the use of life histories, the problem of objectivity, and the use of native languages as field tools. Mr. Kroskrity

M172T. Ethnohistory of Hispanic Cultures in the U.S. Southwest. (Formerly numbered 172T.) (Same as Chicano Studies M172T.) Lecture, three hours. Prerequisite: course 5 or 22 or consent of instructor. An ethnography of the social and cultural adaptations of the 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. Ms. Rodríguez

172U. Eskimos. Prerequisite: upper division standing. A survey on historical, ethnographic, and contemporary Eskimo life stressing their importance in anthropological theory and practice. Particular emphasis on Eskimo origins, technology, and modern administration. Mr. Oswalt

Middle America

173P. Cultures of Middle America. An introduction to the social and cultural anthropology of Middle America, with emphasis on indigenous communities. Aspects of economics, society, politics, and religion reviewed in light of their historical development and current distribution.

173Q. Latin American Communities. An overview of the social and cultural anthropology of small communities in Latin America. Similarities and contrasts in social organization and interpersonal relations described in the context of economic, political, and cultural environments. Mr. Johnson

South America

174P. Ethnography of South American Indians. Introduction to the ethnography of South American Indians, with special emphasis on Lowland South America. Survey of the history and development of man and society in this world area and examination of exemplary cultures symptomatic of the various levels of cultural achievement. Mr. Wilbert

174Q. Ethnology of South American Indians. Prerequisite: course 174P or consent of instructor. Introduction to the ethnology of South American Indians, with special emphasis on Lowland South America. The methods and theories applied to the study of man and culture on the subcontinent, including biological anthropology, linguistics, and sociocultural anthropology. Mr. Wilbert

Asia

175P. Civilizations and Cultures of Southeast Asia. An introduction to the 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. Mr. Moerman

175Q. Civilizations of South Asia. Examination of the 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, Mr. Maquet

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 the status of women, religion and the social order in Hindu-Buddhist culture contact zone, and current problems of modernization. Ms. Levine

175S. Japan. Prerequisite: course 22. An 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.

Middle East

176. Cultures of the Middle East. Lecture, three hours. Prerequisite: course 5 or consent of instructor. The unity and diversity of the social institutions and cultural forms in the Arab countries of North Africa and the Near East, Israel, Turkey, Iran, and Afghanistan. Mr. Shahrani

Pacific

177. Cultures of the Pacific. The 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 the context of their adaptive significance. Mr. Newman

History and Theory

182. The History of Anthropology. A brief survey of the development of Western social science, particularly anthropology, from Greek and Roman thought to the emergence of evolutionary theory and the concept of culture in the late 19th century. The "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, the perception of deviance, and our view of culture in general.

183. History of Archaeology. Prerequisite: at least one upper division course in archaeology or consent of instructor. The development of world archaeology from the Renaissance to the present. Presentation of how each of the major branches of archaeology has evolved a special character determined by the peculiarities of its own data, methods, and intellectual affiliation. Mr. Sackett

184. History of Human Evolutionary Theory. The men, the events, and the spirit of the time which mark man's attempts to understand his origins and diversity. Mr. Williams

185. History of Social Anthropology. Prerequisites: course 5 or 22 or Sociology 1, upper division standing in anthropology or sociology. A systematic survey of the development of social anthropology in France and Britain from the Enlightenment to the present. Review of major early concepts of French sociology and British structuralist-functionalism and current concerns in social theory. Ms. Levine

186A-186B. Quantitative Methods and Models in Anthropology. Prerequisite: upper division standing. Introduction to quantitative methods of data analysis and the modeling of sociocultural systems. **186A.** Methods of data analysis and topics such as data description, sampling, estimation procedures, and hypothesis testing. **186B.** Topics from statistical modeling (e.g., linear regression models) and deterministic modeling (e.g., network models, kinship structures, systems, models). Mr. Read

187. Theory and Method in Sociocultural Anthropology. Prerequisite: at least eight units of upper division social and cultural anthropology. A review of the major theoretical orientations in sociocultural anthropology, with special emphasis on the research methods that have been found most useful in each. Examination of the relevance of philosophy of science to sociocultural anthropology; identification of theoretical and methodological links to other social sciences. Mr. Johnson

C188. Simulation in Anthropology. Discussion, three hours; laboratory, three hours. Prerequisites: upper division standing, successful completion of courses 1 or 120, and 186A, or equivalent, consent of instructor. Introduction to the theory, appropriate use, and validation of simulation; review of the history of simulation methods in anthropology; the use of the microcomputer as a research tool. Intensive introduction to dynamic approximations of theoretical demographic and population processes. Concurrently scheduled with course C288. P/NP or letter grading. Mr. Mai

Special Studies

191. Writing for Anthropology. Prerequisite: course 5. 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 the organization and presentation of a scholarly argument. Mr. Earle

197. Economic Development and Culture Change. Seminar, three hours. Prerequisites: courses 5 and 22, or consent of instructor. Exploration of the cultural dimensions of such Third World development issues as technological innovation, economic change, politics, modernization, labor power training, migration, population planning, disaster relief, refugee resettlement, and the protection of indigenous peoples. Mr. Hammond

197H. Departmental Honors Seminar. (Formerly numbered 198H.) Seminar, three hours. Prerequisites: a 3.5 GPA in at least two upper division anthropology courses and eligibility for Letters and Science honors status, or consent of instructor. Five discussion segments dealing with major debates, questions, and issues in each of the departmental fields (social, cultural, biological, and linguistic anthropology, and archaeology). Discussion each week in a seminar format of readings on a major topic.

199. Special Studies in Anthropology (2 to 8 units). Prerequisite: consent of instructor. Eight units may be applied toward the upper division anthropology courses required for the major.

199HA. Directed Studies for Honors. Discussion, three hours. Prerequisite: honors major in anthropology. Discussion meetings with the adviser to help define the research and preparation for the project. Extensive reading and research in the field of the proposed honors thesis. The 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 and honors major in anthropology, or consent of instructor. Must be taken in Fall Quarter of the senior year. Continued reading and research directed toward the analysis and presentation of data in a draft of the 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, and honors major in anthropology, or consent of instructor. Preparation of the final version of the honors thesis (no more than 30 pages) that argues a central thesis of anthropological relevance. Must be submitted by the last day of class in Winter Quarter of the 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 nonrepetitive in content but may be repeated for credit with consent of instructor and graduate counselor.

203. Core Seminar: Sociocultural Anthropology. Seminar, three hours. Prerequisites: two courses from 130, 135P, 150, or equivalent, or consent of instructor. The essential concepts, theories, and methodologies of sociocultural anthropology. Reading of and critical discussion on a body of significant literature.

Archaeology

210. Analytical Methods in Archaeological Studies. Prerequisites: one quarter of statistics, consent of instructor. Data analysis procedures in archaeology. Emphasis on the conceptual framework for the analysis of archaeological data, beginning at the level of the attribute and ending at the level of the region. Mr. Read

211. Regional Analysis in Archaeology. Prerequisite: consent of instructor. Course 210 is not prerequisite to 211. Survey of the 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 the development of early human culture. May be repeated for credit. Mr. Meighan

212Q. Problems in Southwestern Archaeology. Prerequisite: consent of instructor. A consideration of prehistoric cultural systems in the American Southwest, with emphasis on the 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. The prehistory of Oceania. Content may vary, but problems considered include the history and process of island occupation, island adaptation, and the evolution of social stratification. May be repeated for credit. Mr. Earle

213. Selected Topics in Problems in Old World Archaeology. 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. The Mesoamerican and Andean civilizations normally constitute the major focus of the seminar. May be repeated for credit. Mr. Donnan, Mr. Nicholson

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. Mr. Meighan

M216. Dating Techniques in Environmental Sciences and Archaeology. (Same as Geography M278.) Lecture, three hours. Prerequisite: consent of instructor. A 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 the processes of societal evolution, emphasizing the usefulness of a variety of explanatory models drawn 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. (Not the same as course 218 prior to Fall Quarter 1986.) 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

M219A-M219B. Graduate Core Seminars in Archaeology (6 units each). (Same as Archaeology M201A-M201B.) Seminar, three hours. Required of anthropology students in the archaeology field. Seminar discussions based on a carefully selected list of 30 to 40 major archaeological works. These core courses provide students with a foundation in the breadth of knowledge required by a professional archaeologist. Archaeological historiography, a survey of world archaeology, and archaeological techniques. Emphasis on an appreciation of the multidisciplinary background of modern archaeology and the relevant interpretative strategies. May be repeated for credit with consent of adviser.

Biological Anthropology

220. Current Problems in Biological Anthropology. Prerequisite: consent of instructor. A detailed examination of current research in biological anthropology (specific topics to be announced). Emphasis on the 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. An examination and analysis of the fossil evidence for man's evolution. Ms. Kennedy

222P. Population Genetics of Man. Prerequisite: consent of instructor. An introductory course in statistics. The study of population concepts, probability, the conditions of gene frequency equilibria, and factors causing gene frequency change. Mr. Williams

M222Q. Probability Models and Statistical Methods in Genetics. (Same as Biomathematics M246.) Lecture, three hours. Prerequisites: course 222P, Mathematics 3A, two quarters of statistics, graduate standing. An introduction to probability models and statistical methods in genetics. Maximum likelihood methods for estimated genetic parameters introduced and discussed in detail. Mr. Read (W)

M222R. Applied Genetic Modeling. (Same as Biomathematics M207B.) Lecture, three hours; discussion, one hour. Prerequisites: course M222Q and graduate standing, or consent of instructor. Methods of computer-oriented genetic analysis. Topics include segregation and linkage analysis, polygenic (quantitative) models, and population structure. Includes a laboratory for hands-on computer analysis of genetic data; laboratory reports required. Ms. Spence (F, even years)

222S. Population Genetics. Prerequisite: consent of instructor. A consideration of some of the special methods of the genetics of human populations and their current application in research. May be repeated for credit. Mr. Williams

223. The Roots of Human Behavior. Prerequisite: consent of instructor. An examination of the behavior of living nonhuman primates and of the evolution and biological basis of human behavior. May be repeated for credit.

223P. Biology and Ecology of Foraging Peoples. Prerequisite: consent of instructor. Detailed discussions of topical issues in the study of foraging societies, including the perspectives of cultural ecology and ethno-archaeology. 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

224. Selected Topics in Field Training in Biological Anthropology. Prerequisite: consent of instructor. Examination of current hypotheses in student and faculty field research. Emphasis on new approaches to field and field-oriented laboratory investigations of primate ecology, behavior, anatomy, physiology, and evolution (specific topics to be announced). May be repeated for credit.

225. Analysis of Biological Anthropology Field Data. Prerequisite: course 224, other field training course, or consent of instructor. Pragmatic and theoretical aspects of research on wild primates from planning and expedition through final data analysis (discussion topics to be announced). May be repeated for credit.

226. Biological Anthropology Colloquium. Selected topics on the status of current research in biological anthropology. May be repeated for credit. S/U grading.

227. Monkeys, Apes, and Language. Lecture, three hours. Prerequisite: consent of instructor. A review of recent research on animal communication and its relation to the evolution of human language. Topics range from the neurophysiological control of vocalizations in a variety of species to the social function of communication, particularly among free-ranging primates. The "ape-language" projects examined in detail.

228. Mating Systems in Birds and Mammals. Lecture, three hours. Prerequisite: consent of instructor. Survey of the evolution of different mating systems in birds and mammals, with special focus on nonhuman primates. Emphasis on social and ecological selective pressures acting on male and female reproductive behavior and partial investment. The validity of applying evolutionary theory to human reproductive behavior.

M228A-M228B. Seminar in Behavioral Biology. (Same as Biology M252A-M252B, Education M229A-M229B, Physiology M252A-M252B, Psychiatry M291A-M291B, and Psychology M230A-M230B.) Discussion, six hours. Prerequisite: consent of instructor. Basic seminar for graduates interested in behavioral biology. An interdisciplinary course dealing with behavioral research in anthropology, biology, psychology, and the medical sciences. Proximate causation, development, and evolution in animal behavior. Physiology and the organization of behavior. Vertebrate social organization. Animal communication. The application of natural selection theory to human social behavior. In Progress grading.

M229A-M229B-M229C. Seminar: Selected Topics in Human Ethology. (Same as Education M281A-M281B-M281C and Psychiatry M279A-M279B-M279C.) Ethologists now use successful animal behavior methodology to study human behavior. When is this appropriate, how can it contribute? Each quarter covers one level of analysis: describing and recording behavior; causation; development, especially longitudinal studies; adaptation; evolutionary origins. Mr. Blurton Jones (F,W,Sp)

Cultural Anthropology

230P. Ethnology. Prerequisite: consent of instructor. A seminar on ethnological method and theory concentrating on ideational systems. May be repeated for credit. Mr. Wilbert

230Q. Cultural Anthropology. Prerequisite: consent of instructor. Special problems in cultural anthropology. May be repeated for credit. Mr. Goldschmidt

231. Asian Americans: Personality and Identity. Prerequisite: graduate standing. The effect of class, caste, and race on the Asian American personality within the framework of anthropological theories.

232. Cultural and Psychological Aspects of Rites of Passage. Seminar, three hours. Prerequisite: graduate standing or consent of instructor. Examination of rites of passage from both sociocultural and psychological perspectives. Exploration of general aspects (those common to rites of passage in general) as well as specific aspects (e.g., of puberty rites, of the rites of a particular culture) through an examination of the early anthropological literature on the subject and more recent formulations. S/U or letter grading. Ms. Wellenkamp

M232P. Cultural Modes of Thought. (Formerly numbered 232P.) (Same as Psychiatry M212.) Lecture, three hours. Prerequisite: consent of instructor. An examination of the influences of culture on learning, perception, thinking, and intelligence. The fields of cross-cultural psychology, in addition to cognitive anthropology. Focus on learning and thinking in non-Western cultures, including problems of education in ethnic areas within the U.S. Mr. Price-Williams

232Q. Myth and Ritual. Prerequisite: consent of instructor. The nature and function of myth and ritual in nonindustrialized societies. Its 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. Mr. Wilbert

M232R. South American Folklore and Mythology Studies. (Same as Folklore M257.) Prerequisite: course 174P or consent of instructor. An examination of oral traditions and related ethnological data from various South American Indian societies against the background of the religious systems of these people. Mr. Wilbert

M232S. The Ethnography of Humor. (Same as Folklore M214.) Lecture, three hours. Prerequisite: graduate standing in folklore and mythology or anthropology. An examination and analysis of selected humorous expressions and events in cross-cultural perspective, with emphasis on the 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 the anthropological literature on person, self, and identity. The conceptual and theoretical relationships among these terms and their use in contemporary ethnography. S/U or letter grading.

232U. Issues in the Anthropology of Emotion. Seminar, three hours. Prerequisite: graduate standing or consent of instructor. Issues and problems in the anthropological study of emotion, such as the extent to which culture shapes emotional experience and expression in everyday contexts and in ritual and the ways in which concepts of emotion vary cross-culturally. S/U or letter grading. Ms. Wellenkamp

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 the questions to be selected for analysis and discussion. May be repeated for credit. Mr. Maquet

233Q. Aesthetic Anthropology. Prerequisite: course 133R or consent of instructor. Selected questions concerning the visual aesthetic phenomena in their relationships with the sociocultural context examined in depth. May be repeated for credit. Mr. Maquet

M234A-M234B. Seminar in Psychocultural Studies. (Formerly numbered 234A-234B.) (Same as Psychiatry M210A-M210B.) Lecture, three hours. Prerequisite: consent of instructor. A two-quarter sequence devoted to the 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, Mr. Price-Williams

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 the questions of "sick" societies. May be repeated for credit. Mr. Kennedy

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 are related to culture. Topics vary from quarter to quarter. May be repeated for credit. Mr. Edgerton

M234R. Sociocultural Perspectives on Mental Retardation. (Formerly numbered 234R.) (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 the study of the phenomenon of mental retardation in the West, particularly the United States. Topics include cross-cultural perspectives, the history of institutional confinement, the 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

M235A-M235B. The Individual in Culture. (Formerly numbered 235A-235B.) (Same as Psychiatry M213A-M213B.) Lecture, three hours. Course M235A is prerequisite to M235B. In Progress grading.

M236P. Selected Topics in the Cross-Cultural Study of Socialization and Childhood. (Formerly numbered 236P.) (Same as Psychiatry M214.) Lecture, three hours. Prerequisite: consent of instructor. Methods, ethnographic data, and theoretical orientations. Emphasis on current research. May be repeated for credit. Mr. Weisner

M236Q. A Laboratory for Naturalistic Observations: Developing Skills and Techniques. (Same as Education M222A and Psychiatry M235.) Lecture, three hours. Prerequisite: consent of instructor. The skill of observing and recording behavior in natural settings, with emphasis on field training and practice in observing behavior. Discussion of some of the uses of observations and their implications for research in the social sciences. Students are expected to integrate observational work into their current research interests. May be repeated for credit. Mr. Gallimore, Mr. Turner, Mr. Weisner (W)

M237A-M237B. Basic Core Courses in 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. A systematic overview of mental retardation and the sciences basic to this field of study. The language, methods, aims, and contributions of the various disciplines that contribute to the field. The last two weeks of the second quarter are spent discussing and preparing multidisciplinary research designs with potential for the prevention or amelioration of mental retardation. S/U grading. Mr. Buchwald, Mr. Edgerton

238. Evolution of Technology. Lecture, three hours. Description, analysis, and interpretation of technological developments from the time material culture originated to the Industrial Revolution. S/U or letter grading. Mr. Oswalt

239P. Selected Topics in Field Training in Ethnography (4 to 8 units). Prerequisite: consent of instructor. Supervised collection of ethnographic information in the field. Students spend full time in the field for most of the quarter.

239Q. Analysis of Field Data. Prerequisite: course 239P or other field training course. Supervised analysis of ethnographic materials by students who have participated in a related field training course. Students work with their own as well as general project data in the preparation of articles for professional journals. May be repeated for credit.

Linguistic Anthropology

240. Seminar in Language and Culture. Prerequisite: consent of instructor. The development of anthropological linguistics, modern linguistic theory, and its application to the study of nonlinguistic aspects of culture, including relationship of language to world view, comparative historical linguistics to prehistory, lexico-statistics, semantic analysis, linguistic acculturation, sociolinguistics, and ethnolinguistics. Mr. Kroskrity

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. The Ethnography of Communication. Prerequisite: graduate standing or consent of instructor. A seminar devoted to examining representative scholarship from the fields of sociolinguistics and the ethnography of communication. Particular attention to theoretical developments including the relationship of the 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 nonverbal communication behavior. Mr. Kroskrity

243P. American Indian Ethnolinguistics and Sociolinguistics. Prerequisites: prior coursework in either anthropology, linguistics, or American Indian studies, consent of instructor. The 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. Kroskrity

CM243Q. 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 United States. The social implications of minority dialects examined from the perspectives of their genesis, maintenance, and social functions. General problems and issues in the fields of sociolinguistics examined through a case study approach. Concurrently scheduled with course C145. Students are required to conduct research in consultation with the instructor, as well as participate in group discussion. Ms. Mitchell-Kernan (W)

244. Topics in Language Socialization. Prerequisite: consent of instructor. Selected topics in the study of language socialization, with a special focus on the development of discourse skills and the mastery of situationally appropriate speech. May be repeated for credit. Ms. Mitchell-Kernan

245. Linguistic and Intracultural Variation. Prerequisite: consent of instructor. The problem of variation as it impinges on the disciplines of anthropology and linguistics. Among the objectives of the course are the following: to acknowledge the importance of speech variation in anthropological linguistics research, to critically assess a broad and representative sample of modern scholarship devoted to the study of intra-individual and interindividual variation, and to evaluate the utility and potential applicability of recent linguistic models to anthropological linguistics and anthropological theory. Mr. Kroskrity

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 the quarter. May be repeated for credit. S/U or letter grading.

247. Analysis of Linguistic Field Data. Prerequisite: course 246, other field training course, 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 the preparation of articles for professional journals. May be repeated for credit. S/U or letter grading.

M247A. Ethnographic Film. (Same as Motion Picture/Television M209C.) Lecture/discussion, four hours; laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Discussion of the history, methods, and criteria for the use of film as a medium for the preservation and communication of human cultures. Filming assignments are given to increase the understanding of the theoretical and practical aspects of ethnographic filming. Consideration of the potential of both film and video for fieldwork.
Mr. Boehm, Mr. Hawkins, Mr. Moerman (F)

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.

Social Anthropology

250. Social Anthropology. Prerequisite: consent of instructor. Intensive examination of current theoretical views and literature. Ms. Levine

251P. Cultural Ecology. Prerequisite: consent of instructor. May be repeated for credit. Mr. Johnson

251Q. Cultural Ecology of Lowland South America. Prerequisite: consent of instructor. Seminar on traditional adaptations to the lowland environment, with special emphasis on the tropical forest. Explanatory principles accounting for cultural differences, with emphasis on effects of modern changes on the people and their environment. Mr. Johnson

252. Special Topics in Social Process. Prerequisite: consent of instructor. Selected aspects of the literature on cultural and social process. The significance of repeated and/or cumulative sequences of events in a variety of social and cultural contexts. Understanding approaches compared with normative concepts and ideal models. May be repeated for credit.

252P. Social Inequality. Lecture, three hours. Prerequisites: course 152P, upper division standing, consent of instructor. Analysis of particular problems in understanding systems of structured social inequality based on rank, caste, class, ethnicity, or sex. Participants serve as seminar discussion leaders and present a research paper. S/U or letter grading. Mr. Hammond

253. Economic Anthropology. Prerequisite: consent of instructor. May be repeated for credit.

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.

257. 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 the organization of face-to-face behavior. May be repeated for credit. Mr. Moerman

258. Comparative Studies of Intentional Communities. Prerequisite: course 157 or consent of instructor. Questions concerning the ideational, societal, and individual significance of intentional communities selected and discussed in depth, with reference to particular collectivities. May be repeated for credit. Mr. Maquet

259. Cultural Ecology of Nomadic Pastoral Societies. Seminar, three hours. Prerequisite: upper division standing or consent of instructor. Examination of nomadic pastoralism both as a form of subsistence and economic strategy, and a mode of sociopolitical adaptation to ecologically marginal and sociopolitically heterogeneous regions of Asia and Africa. Mr. Shahrani

Social Action/Applied Anthropology

260. Urban Anthropology. Prerequisite: course 167 or consent of instructor. An intensive anthropological examination of the urban setting as a human environment.

261. Comparative Minority Relations. Prerequisite: consent of instructor. An analysis of the major theoretical and methodological issues in the study of minority relations from a comparative perspective. Consensus, conflict, and pluralistic constructs analyzed and their strengths as explanatory devices investigated as they pertain to dependent populations in North America, Latin America, Southern Africa, India, Asia, and the Euro-Slavic continent. May be repeated for credit. Ms. Rodríguez

261P. Issues in Development Anthropology. Lecture, three hours. Prerequisite: course 160 or 161 or consent of instructor. Selected problems in economic development in Third World countries in the context of related issues such as health and education, environmental protection, housing and urbanization, promotion of local participation, women's roles, protection of indigenous minorities, infrastructural development, diplomacy, warfare and revolution, and migration and refugee resettlement, with recommendations for action. Mr. Hammond

262. The Cultural Context of Health Care. Prerequisite: consent of instructor. Concepts and treatment of illness and disease in cross-cultural perspectives, with emphasis on research problems and methods. The anthropological approach to health-related research and the intersections of anthropology and problem areas in public health and psychiatry (such as epidemiology, fertility regulation, socialization, and developmental disabilities). Mr. Johnson

M262P. Culture and Human Reproduction. (Same as Public Health M276.) Lecture, two hours; discussion, two hours. Prerequisites: Public Health 110, 112, 172, 474, or equivalent, 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

M263. Medical Anthropology. (Same as Nursing M217.) Lecture, three hours. Prerequisite: course M168 or consent of instructor. Any of the topics covered in course M168 are selected each quarter for intensive literature review and independent projects. May be repeated for credit.

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 the relationship between systems of gender, economy, ideational systems, and social inequality. Selection of ethnographic cases from the recent literature. S/U or letter grading. Ms. Levine

M263Q. Social Relations, Illness, and Health. (Same as Psychiatry M273.) Prerequisite: one upper division course in anthropology, sociology, or psychology. Social structural factors that influence how health is defined and illness experienced, managed, and treated in the U.S. and abroad. Topics include the determinants of household health, institutional issues in the delivery of health services, and gender and health. Ms. Browner (Sp)

264. Ethnography of the Mexican/Chicano People in North America. Prerequisite: graduate standing or consent of instructor. Recommended: course M172T. A research course on topics in the ethnography of the Mexican/Chicano people in North America, including social organization, economic and political systems, belief and value systems, linguistic and expressive adaptations, and individuals and their cultural contexts. Topics vary according to interest and are announced prior to the beginning of the quarter. May be repeated for credit. Ms. Rodríguez

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. Mr. Meighan

M266. Medical Anthropology in Public Health. (Same as Public Health M271.) Prerequisites: Public Health 110, 112, one upper division course in psychology, sociology, or anthropology, or equivalent, consent of instructor. Cross-cultural aspects of human behavior as they relate to perception, treatment, incidence, and prevalence of disease and illness. Ms. Scrimshaw

M267B-M267C. Ethnographic Film Direction (4 or 8 units each). (Same as Motion Picture/Television M265A-M265B.) Lecture, four hours; laboratory, to be arranged. Prerequisites: course M247A, graduate standing, consent of instructor. Further consideration of the methods and criteria for the use of film as a medium for the preservation and communication of human cultures. Production of films and videotapes on topics selected by students.
Mr. Boehm, Mr. Hawkins, Mr. Moerman
(W, M267B; Sp, M267C)

268. Issues in Social Action Anthropology. Prerequisites: course 160, upper division standing, consent of instructor. Analysis of specific problems in social action anthropology and recommendations for their resolution. Emphasis on professional preparation for careers in applied anthropology.
Mr. Hammond

M269. Contemporary Issues of the American Indian. (Same as American Indian Studies M200C.) Introduction to the most important issues facing American Indians as individuals, communities, tribes, and organizations in the contemporary world, building on the historical background presented in American Indian Studies M200A and the cultural and expressive experience of American Indians presented in American Indian Studies M200B. Ms. Heth, Ms. Joe

Regional Cultures

271. African Cultures. Prerequisite: consent of instructor. Survey of the literature and problems of African culture.

M272. Indians of South America. (Same as Latin American Studies M250A.) Lecture, three hours. Prerequisite: consent of instructor. Survey of the literature and research topics related to Indian cultures of South America. May be repeated for credit.
Mr. Wilbert

273. Cultures of the Middle East. Prerequisite: course 176 or consent of instructor. Survey of the literature and problems of the various cultures of the Middle East.

274. Cultures of the Pacific Islands. Prerequisite: consent of instructor. Topics in the contemporary sociocultural anthropology and classic ethnography of Melanesia, Polynesia, and Micronesia. May be repeated for credit. Mr. Newman

275. Ethnicity in the Southwest. Discussion, three hours. Prerequisite: graduate standing. Comparative focus on ethnic relations among Indian, Mexican American, and Anglo populations within four subregions of the U.S. Southwest: the lower Rio Grande valley of south Texas, the Rio Arriba of northern New Mexico, western Arizona, and Southern California.
Ms. Rodríguez

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. Mr. Moerman

History and Theory

280. Anthropology Theory. Prerequisite: graduate standing in anthropology or consent of instructor. The range of theories that anthropologists have employed in describing and explaining variability in sociocultural phenomena. The organization of particular theories, as well as issues that separate divergent theories. Emphasis on up-to-date examples of different theoretical perspectives. Major perspectives include evolutionism, cultural ecology, British functionalism, French functionalism, structuralism, cultural and personality, psychological anthropology (Freudian, neo-Freudian, non-Freudian), behavioral anthropology, cognitive anthropology, and ethnosemantics.

281. Selected Topics in the History of Anthropology. Prerequisite: consent of instructor. Particular problems in the history of anthropology as dictated by the interests of students and faculty. May be repeated for credit.

282. Research Design in Cultural Anthropology. Prerequisite: consent of instructor. Primarily intended for graduate students preparing for fieldwork. The unique position of anthropology among the sciences and the 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. Mathematical Models in Anthropology. Prerequisite: consent of instructor. Current topics and issues in mathematical anthropology. An overview of a variety of mathematical approaches relevant to theory, systems theory, decision theory, Markov processes, etc. Mr. Read

M284. Qualitative Research Methodology. (Same as Public Health M273.) Discussion, three hours; laboratory, one hour. Prerequisites: Public Health 100A and 125 or 181, an undergraduate or graduate course in social psychology, anthropology, or sociology, 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. (Not the same as course 285 prior to Fall Quarter 1986.) Seminar, three hours. Prerequisite: consent of instructor. A comparative examination of the 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 the history or philosophy of science.
Mr. Sackett

286. Quantitative Methods in Anthropology. Laboratory, three hours. Prerequisites: courses 186A-186B or equivalent, consent of instructor. Computer-aided methods of quantitative data analysis, including multivariate techniques, in the context of student research data sets. Mr. Read

286P. Selected Topics in Computer Simulation and Modeling. Seminar, three hours. Prerequisites: courses 186A and C188/C288, or equivalent, consent of instructor. Recommended: course 186B. 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. Mai

C288. Simulation in Anthropology. Discussion, three hours; laboratory, three hours. Prerequisites: graduate standing, successful completion of courses 1 or 120, and 186A, or equivalent, consent of instructor. Introduction to the theory, appropriate use, and validation of simulation; review of the history of simulation methods in anthropology; the use of the microcomputer as a research tool. Intensive introduction to dynamic approximations of theoretical demographic and population processes. Concurrently scheduled with course C188. Graduate students are required to meet one additional hour each week to discuss relevant simulation literature. S/U or letter grading.
Mr. Mai

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 the impact that computers are having in Latin American society. Mr. Behrens

291. The Roots of Human Behavior. Prerequisite: consent of instructor. An examination of the behavior of living nonhuman primates and of the evolution and biological basis of human behavior.

Special Studies

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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 adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. 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 the qualifying examinations and ordinarily take no other coursework.

Applied Linguistics
(Interdepartmental)

3300A Rolfe Hall, (213) 825-4631

Professors

Stephen R. Anderson, Ph.D. *(Linguistics)*
Raimo A. Anttila, Ph.D. *(Linguistics)*
J. Donald Bowen, Ph.D. *(English as a Second Language)*
William O. Bright, Ph.D. *(Linguistics)*
Russell N. Campbell, Ph.D. *(English as a Second Language), Chair*
Marianne Celce-Murcia, Ph.D. *(English as a Second Language)*
Victoria A. Fromkin, Ph.D. *(Linguistics)*
Evelyn R. Hatch, Ph.D. *(English as a Second Language)*
Edward L. Keenan, Ph.D. *(Linguistics)*
Peter N. Ladefoged, Ph.D. *(Phonetics)*
Pamela L. Munro, Ph.D. *(Linguistics)*
John F. Povey, Ph.D. *(English as a Second Language)*
Paul M. Schachter, Ph.D. *(Linguistics)*
Russell G. Schuh, Ph.D. *(Linguistics)*
John H. Schumann, Ed.D. *(English as a Second Language)*
Robert P. Stockwell, Ph.D. *(Linguistics)*
Sandra A. Thompson, Ph.D. *(Linguistics)*
Clifford H. Prator, Ph.D., *Emeritus (English as a Second Language)*

Associate Professors

Roger W. Andersen, Ph.D. *(English as a Second Language)*
George D. Bedell, Ph.D. *(Linguistics)*
Bruce P. Hayes, Ph.D. *(Linguistics)*
Thomas J. Hinnebusch, Ph.D. *(Linguistics)*
Patricia A. Keating, Ph.D. *(Linguistics)*
Earl J. Rand, Ph.D. *(English as a Second Language)*

Assistant Professors

John W. DuBois, Ph.D. *(Linguistics)*
Hilda J. Koopman, Ph.D. *(Linguistics)*
Mary E. McGroarty, Ph.D. *(English as a Second Language)*
Timothy A. Stowell, Ph.D. *(Linguistics)*

Visiting Associate Professor

Grant Henning, Ph.D. *(English as a Second Language)*

Visiting Assistant Professor

Barbara Kroll, Ph.D. *(English as a Second Language)*

Adjunct and Visiting Lecturers

Donna Brinton, M.A., *Adjunct (English as a Second Language)*
Melinda Erickson, M.A., *Visiting (English as a Second Language)*
Diana Savas, M.A., *Visiting (English as a Second Language)*

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.

The combined faculties of the Department of Linguistics and the English as a Second Language (ESL) Section, as well as professors in 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 area of language use, education, acquisition, and analysis. 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 the 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) three letters of recommendation from professors who are well acquainted with their academic background; (2) a definite and complete statement of the type of dissertation they hope to prepare; (3) copies of any relevant professional publications, M.A. theses, or substantial papers they may have written. The Aptitude Test of the Graduate Record Examination (GRE) should also be taken (required only of applicants whose native language is English). Applications for admission to Fall Quarter, which is when most students are admitted, should reach the Graduate Admissions Office by the preceding December 30; the supporting materials should reach the Applied Linguistics Program (3300A Rolfe Hall, UCLA, Los Angeles, CA 90024) no later than February 15.

Admission criteria include graduate and undergraduate grade-point averages, relevant professional experience, command of a foreign language, the quality of the M.A. thesis, and any language-related publications the candidate may have written.

Major Fields and Specializations

Four areas of specialization are available: language analysis, language education, language acquisition, and language use. For details on each specialization, contact the program office.

Foreign Language Requirement

Before advancement to candidacy, students whose native language is English must demonstrate proficiency in two foreign languages by one of the following: (1) a reading examination; (2) a research paper based on extensive sources in the language; (3) a conversation examination showing knowledge in depth; (4) an Educational Testing Service (ETS) graduate examination. You may substitute three graduate courses in research design and statistics for one of the two foreign languages. 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.

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 either a phonetics and phonology track or a syntax and semantics track. For both tracks, you must take Linguistics 120A and either Linguistics 120B, 127, or English 122K. Students selecting the phonetics and phonology track would then take Linguistics C165A/C200A, followed by Linguistics 201A or 203. Students selecting the syntax and semantics track would take Linguistics C165B/C200B, followed by Linguistics 206A or 206B or 207. For basic preparation in TESL, you must take English 241K, 370K, and 380K. Course 370K, which is organized as a general orientation to the ESL field, must be taken at UCLA. If you have taken courses equivalent to any of the remaining courses at another institution, you will not be required to take them at UCLA. If you have at least one year of experience in teaching a second language, you may be exempt from course 380K.

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, English 400K, or Applied Linguistics 597 or 599. No more than eight of the 32 units may be in 596 courses, and these should be in Applied Linguistics 596, if possible.

The 32 units (eight courses) must include at least two courses in each of the specializations of language analysis and language education,

as well as two courses in either language acquisition or language use. (None of the aforementioned six courses may be 596 courses taken in departments other than Linguistics or English.) An additional two courses are required in the specialization in which the dissertation research will be done. Thus, a student who opted for a dissertation in language acquisition would take a minimum of four courses in that area, plus two in language analysis and two in language education.

Appropriate graduate courses taken at UCLA after completion of the M.A. but before admission to the doctoral program may be applied toward the eight-course 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, English 400K, 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.

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. The doctoral committee also 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.

Final Oral Examination

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 Linguistics or the ESL Section. You must, therefore, enroll in either English 400K or Linguistics 275 during the appropriate quarter. The public report will determine whether a final oral examination will be required.

Graduate Courses

501. Cooperative Program (2 to 8 units). Prerequisite: consent of UCLA Ph.D. program adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. 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 the 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 the 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 quarter they are registered and engaged in dissertation preparation. May be repeated for credit, but may not be applied toward the Ph.D. course requirements. S/U grading. (F,W,Sp)

Applied Linguistics Course List

Language Acquisition

Education 212A. Learning and Education

212B. Motivation and Affect in the Educative Process

212C. Cognition and Creativity in Education

217D. Language Development and Education

English 260K. Psycholinguistics and Language Teaching

261K. Second Language Acquisition

269K. Current Issues in Language Acquisition

Linguistics 254. Topics in Linguistics I: Proseminar

Psychiatry 257A-257B-257C. Communication Disorders Associated with Developmental Disabilities and Psychiatric Disorders

Psychology 240A-240B. Developmental Psychology

260A-260B. Proseminar in Cognitive Psychology

263. Psycholinguistics

Language Analysis

English 249K. Current Issues in Language Analysis

250K. Advanced Seminar in Cohesion Analysis of English Structure

251K. Advanced Seminar in Interlanguage Analysis

252K. Advanced Seminar in Contextual Analysis of English Structure

Linguistics 201A, 201B. Phonological Theory

206A, 206B. Syntactic Theory

210A, 210B. Field Methods

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

Spanish (Spanish and Portuguese) 256A-256B. Studies in Spanish Linguistics

Language Education

Education 204A. Topics and Issues in International and Comparative Education

204D. Minority Education in Cross-Cultural Perspective

210A. Basic Concepts in Educational Research

210B. Experimental Design in Educational Research

210C. Experimental Design: Advanced Topics

210D. Experimental Design: Multivariate Analysis (courses 210A-210D are highly recommended for statistical work, but only two may be applied toward the eight-course requirement)

211A. The Measurement of Educational Achievement and Aptitude

211B. Measurement in Education: Underlying Theory

262B. Seminar: Reading

262F. Seminar: Research Topics in Bilingual/Multicultural Education

264. Seminar: Teacher Education

English 220K. Materials Development for Language Teaching

221K. Media for Language Teaching

222K. Language Testing for Teachers of English as a Second Language

223K. Role of English as a Second Language in Bilingual Eduation

M224K. The Teaching of English for Minority Groups

277K. Experiential Seminar in Second Language Learning

229K. Current Issues in Language Education

232K. Advanced Seminar in the Construction and Administration of Language Tests

Language Use

Anthropology M232P. Cultural Modes of Thought

M234Q. Psychological Anthropology

240. Seminar in Language and Culture

M241. Topics in Linguistic Anthropology

244. Topics in Language Socialization

Education 200B. Survey Research Methods in Education

English 223K. Role of English as a Second Language in Bilingual Education

242. Language and Literature

M262. Studies in Afro-American Literature

275. Stylistics and the Teaching of English

280K. Language Policy in Developing Countries

281K. Language Policy in the United States

282K. Intercultural Communication and the Teaching of English as a Second Language

283K. Discourse Analysis

284K. English for Specific Purposes

M285K. Studies in African Literature in English

289K. Current Issues in Language Use

Linguistics 251. Topics in Phonetics and Phonology I: Proseminar

252. Topics in Syntax and Semantics I: Proseminar

254. Topics in Linguistics I: Proseminar

Sociology 216A-216B. Survey Research Methods

217A-217B. Ethnographic Fieldwork

238A-238B. Fieldwork in Minority Communities

266. Selected Problems in the Analysis of Conversation

267. Selected Problems in Communication

Spanish (Spanish and Portuguese) 209. Dialectology

257. Studies in Dialectology

Archaeology
(Interdepartmental)

288 Kinsey Hall, (213) 825-4169

Professors

C. Rainer Berger, Ph.D. *(Anthropology, Geography, and Geophysics), Chair*
Giorgio Buccellati, Ph.D. *(Ancient Near East and History)*
John Callender, Ph.D. *(Near Eastern Languages and Cultures)*
Christopher B. Donnan, Ph.D. *(Anthropology)*
Susan B. Downey, Ph.D. *(Art History)*
Marija Gimbutas, Ph.D. *(European Archaeology)*
James N. Hill, Ph.D. *(Anthropology)*
Clement W. Meighan, Ph.D. *(Anthropology)*
Henry B. Nicholson, Ph.D. *(Anthropology)*
Wendell H. Oswalt, Ph.D. *(Anthropology)*
Merrick Posnansky, Ph.D. *(History and Anthropology)*
James R. Sackett, Ph.D. *(Anthropology)*
Stanislav Segert, Ph.D. *(Near Eastern Languages and Cultures)*
Alexander Badawy, Ph.D., *Emeritus (Art)*
Paul A. Clement, Ph.D., *Emeritus (Classics and Classical Archaeology)*
Kan Lao, B.A., *Emeritus (East Asian Languages and Cultures)*
Katharina Otto-Dorn, Ph.D., *Emeritus (Art History)*
Richard C. Rudolph, Ph.D., *Emeritus (East Asian Languages and Cultures)*

Associate Professors

Elizabeth Carter, Ph.D. *(Near Eastern Languages and Cultures)*
Hung-hsiang Chou, Ph.D. *(East Asian Languages and Cultures)*
Michael J. DeNiro, Ph.D. *(Geochemistry and Archaeological Sciences)*
Timothy Earle, Ph.D. *(Anthropology)*
Bernard D. Frischer, Ph.D. *(Classics)*
Gail E. Kennedy, Ph.D. *(Anthropology)*
Cecelia F. Klein, Ph.D. *(Art History)*
William Klement, Jr., Ph.D. *(Materials Science and Engineering and Archaeological Sciences)*
Steven Lattimore, Ph.D. *(Classics)*
Martin J. Powers, Ph.D. *(Art History)*
Dwight Read, Ph.D. *(Anthropology)*
Arnold Rubin, Ph.D. *(Art History)*

Assistant Professors

Robert C. Bailey, Ph.D. *(Anthropology)*
Irene A. Bierman, Ph.D. *(Art History)*
Robert Brown, Ph.D. *(Art History)*

Lecturer

David S. Whitley, Ph.D. *(Anthropology)*

Adjunct Professor

Leona M. Libby, Ph.D. *(Environmental and Archaeological Sciences)*

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, 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) Aptitude 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 the Fall Quarter only. The program's "Study Guidelines" brochure will be sent to applicants on request to the Chair, Archaeology Program, 288 Kinsey Hall, UCLA, Los Angeles, CA 90024.

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 will be 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 will take a regular UCLA field course such as Anthropology 115P (which satisfies the M.A. field course requirement) or Archaeology 259, Ancient Near East 261, or History 276 (which satisfy both the M.A. and Ph.D. field requirements), 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 will have to be cleared in advance with the chair of the program.

Master of Arts Degree

The structure of the M.A. program includes the successful completion within seven academic quarters 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 an examination administered by the Educational Testing Service (ETS) with a score of 500 or better; (2) completing the third course in an introductory, regular sequence of the selected language at UCLA with a minimum grade of A; (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 the sixth quarter in residence, unless an earlier deadline is imposed by the 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 may be taken twice for a maximum of 12 units, but only six units may be applied toward the minimum graduate course requirement (a letter grade is given for the course). Four upper division elective courses* (a minimum of 16 units, excluding 199s) are also required.

Comprehensive Examination Plan

You will be required to take a comprehensive core examination during your third quarter in residence. This written examination is based largely on a reading list of about 30 volumes

*Of the six combined elective courses, no more than four may be offered by the same department. At least one must be *outside* the student's sphere of regional interest to be selected from a pool of eligible courses by the student's adviser.

which have been the focus of the seminar discussions in Archaeology M201A-M201B. The examination will be 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 20 to 35 pages and graded by the three members of the committee, is to be submitted by the end of the third week of the seventh quarter to the chair of the program.

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 will be 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. Competence may be demonstrated as outlined for the master's degree.

Course Requirements

You must be enrolled in a minimum of 12 units per quarter. Archaeology 200 is required. There are no other restrictions or requirements concerning courses.

Qualifying Examinations

By the end of the fourth quarter of 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; (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 the sixth quarter of the doctoral program. You will be 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. A laboratory-oriented introduction for archaeologists to the 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. The 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 the departmental M.A. requirements. S/U grading only for students enrolled for one unit.

M201A-M201B. Graduate Core Seminars in Archaeology (6 units each). (Same as Anthropology M219A-M219B.) Seminar, three hours. Required of all M.A. students. Seminar discussions based on a carefully selected list of 30 to 40 major archaeological works. These compulsory core courses provide students with a foundation in the breadth of knowledge required by a professional archaeologist. Archaeological historiography, a survey of world archaeology, and archaeological techniques. Emphasis on an appreciation of the multidisciplinary background of modern archaeology and the relevant interpretative strategies. May be repeated for credit with consent of adviser.

205. Special Topics in Archaeology (6 units). Lecture/discussion, three hours. Prerequisite: graduate standing in archaeology or in other departments. Special advanced topics in archaeology, such as new strategies, methodologies, excavation projects, regional synthesis, or comparisons on a worldwide basis, including current work by the core faculty of the program and special visitors.

C210. Archaeological Materials Identification and Characterization (6 units). (Formerly numbered 210.) Lecture, three hours; laboratory, four hours. A laboratory-oriented introduction for archaeologists to the identification and quantitative description of solid materials, especially metals, ceramics, and other inorganic and some organic substances. Concurrently scheduled with course C110.

M213. Archaeological and Paleontological Applications of Stable Isotopes (6 units). (Formerly numbered 211.) (Same as Earth and Space Sciences M213.) Lecture, three hours. Application of natural variations in stable isotope ratios in fossilized biological and nonbiological materials to a variety of archaeological and paleontological problems. Topics include the basis for isotope distributions in archaeological and paleontological materials; analytical procedures for measuring isotopic ratios; dietary reconstruction; paleoclimatic analysis; determination of provenience of archaeological materials; analysis of aspects of the biochemistry and physiology of fossil animals.

Mr. DeNiro (F)

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. A minimum of one month of field time away from the campus is 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.

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

115Q. Archaeological Research Techniques

115R. Strategy of Archaeology

M115S. Historical Archaeology

116P. Laboratory Analysis in Archaeology

M116Q. Dating Techniques in Environmental Sciences and Archaeology

118A, 118B. Museum Studies

121A. Fossil Man and His Culture

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-186B. Quantitative Methods and Models 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. Mathematical Models in Anthropology

Art History (Art, Design, and Art History) 203. Museum Studies

265. Fieldwork in Archaeology

Materials Science and Engineering 149C. Properties of Art Ceramic Materials

149E. Ceramic Materials in History and Archaeology

New World

Anthropology 113P. Archaeology of North America

113Q. The 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

172P. North American Indian Cultures

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

Art History (Art, Design, and Art History) C117A. Advanced Studies in Pre-Columbian Art: Mexico

C117B. Advanced Studies in Pre-Columbian Art: Central America

C117C. Advanced Studies in Pre-Columbian Art: The Andes

118A. The Arts of Oceania

118B. The Arts of Pre-Columbian America

118D. The Arts of Native North America

220. Oceanic, Pre-Columbian, African, and Native North American Art

Old World — Africa

Art History (Art, Design, and Art History) 118C. The 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 Problems in Old World Archaeology

Art History (Art, Design, and Art History) 103A. Greek Art

103B. Hellenistic Art

103C. Roman Art

103D. Etruscan Art

103E. Late Roman Art

221. Topics in Classical Art

223. Classical Art

Classics 151A. Classical Archaeology: The Aegean Bronze Age

151B. Classical Archaeology: Greco-Roman Architecture

151C. Classical Archaeology: Greco-Roman Sculpture

151D. Classical Archaeology: Greco-Roman Painting

251A-251D. Seminar in 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: The Bronze Age

250A-250B. European Archaeology

Old World — India and the Far East

Art History (Art, Design, and Art History) 114A. The Early Art of India

114B. Chinese Art

114C. Japanese Art

C115A. Advanced Indian Art

C115B. Advanced Chinese Art

C115C. Advanced Japanese Art

C259. Advanced Japanese Art

260. Asian Art

East Asian Languages and Cultures 170A-170B. Archaeology in Early and Modern China

270. Seminar: Selected Topics in Chinese Archaeology

275. Seminar: Selected Topics in Chinese Cultural History

Old World — Islam

Art History (Art, Design, and Art History) 104A. Western Islamic Art

104B. Eastern Islamic Art

C104C. Problems in Islamic Art

213. Problems 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. The Archaeology of the Historic Periods in Mesopotamia

220. Seminar in Ancient Egypt

M250. Seminar in Ancient Mesopotamia

250X. Seminar in Ancient Mesopotamia

260. Seminar in Ancient Near Eastern Archaeology

262. Seminar in Object Archaeology

Anthropology 110. World Archaeology

Art History (Art, Design, and Art History) 101A, 101B, 101C. Egyptian Art and Archaeology

102. Art of the Ancient Near East

210. Egyptian Art

History 105. History of Ancient Mesopotamia and Syria

193D. Religions of the Ancient Near East

200A-200U. Advanced Historiography

201A-201U. Topics in History

Asian American Studies (Interdepartmental)

3232 Campbell Hall, (213) 825-2974

Professors

Lucie Cheng, Ph.D. *(Sociology)*
Dolores Hayden, M.Arch. *(Architecture and Urban Planning)*
Harry H.L. Kitano, Ph.D. *(Social Welfare), Chair*
Fred G. Notehelfer, Ph.D. *(History)*
Stanley Sue, Ph.D. *(Psychology)*

Associate Professors

Robert A. Nakamura, M.F.A. *(Theater, Film, and Television)*
Philip L. Newman, Ph.D. *(Anthropology)*
Jeffrey Prager, Ph.D. *(Sociology)*
Leo M. Snowiss, Ph.D. *(Political Science)*

Assistant Professors

King-Kok Cheung, Ph.D. *(English)*
Don T. Nakanishi, Ph.D. *(Education)*
Paul Ong, Ph.D. *(Architecture and Urban Planning)*

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 United States 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 the interdepartmental major in East Asian studies. The graduate program leads to an 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 Program

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 program, 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 (3232 Campbell Hall, UCLA, Los Angeles, CA 90024) 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 from various departments.

Research Tool Requirement

The research tool requirement may be satisfied by one of two options:

(1) Asian Language: A minimum of two full years of study in an Asian language at the university level or equivalent. This requirement may be fulfilled before entering the program, but you must pass a proficiency examination administered by the Asian American Studies Center and the interdepartmental committee.

(2) Research Methods: Three upper division or graduate courses in research methods (e.g., statistics, computer science, field and observational techniques, experimental techniques, archival methods). Specific courses must be approved by the interdepartmental committee.

You must justify your choice of option 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 253G, History 201H, Sociology 261.

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

The thesis committee is normally constituted at the beginning of your second year in residence, at which time you are expected to submit a plan for approval. After the approval of the thesis, the committee will conduct an oral examination on its subject.

Upper Division Courses

100A-100B. Introduction to Asian American Studies. An introduction to Asian American studies. **100A.** The history of Asians in America. **100B.** Contemporary Asian American communities.

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.

105. Asian American Women. Lecture, three hours. The 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. Ms. Cheng

M107. Asian American Personality and Mental Health. (Formerly numbered 197.) (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

197. Topics in Asian American Studies. Lecture, three hours. Variable topics selected from the following: Pilipino American Experience; Japanese American History; Korean American Experience; Asian American Literature; Asian American Communities.

Graduate Courses

200A. Critical Issues in Asian American Studies. Prerequisites: graduate standing, consent of instructor. Examines and seeks to develop a critical appreciation of the 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. Cheng

200B. Critical Issues in Asian American Studies. Prerequisites: graduate standing, consent of instructor. A critical review of research methods, strategies, and philosophies in Asian American studies. Mr. Nakanishi

200C. 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 the development, structure, and dynamics of Asian Pacific American communities in studying community issues and concerns. Ms. Cheng, Mr. Sue

297. Topics in Asian American Studies.

M297A. Topics in Asian American Literature. (Same as English M260A.) Lecture, three hours. A graduate seminar that examines and critically evaluates writings of Asian Americans.

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 the 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 M163. Women in Culture and Society
166. Comparative Minority Relations
167. Urban Anthropology
175P. Civilizations and Cultures of Southeast Asia
175Q. Civilizations of South Asia
175S. Japan
177. Cultures of the Pacific
231. Asian Americans: Personality and Identity
261. Comparative Minority Relations
274. Cultures of the Pacific Islands

Architecture and Urban Planning 197. Planning for Minority Communities
251. Planning for Multiple Publics
253. Social Theory for Planners
256. Social Impact Analysis
258. Urban Morphology

Education 253G. Seminar: The Asian American and Education

History 153. The United States and the Philippines
154A-154B. United States Urban History
155A-155B. American and European Working Class Movements
160. The Immigrant in America
161. Asians in American History
163. History of California
183. Modern China, 1840-1920
187C. Modern Japanese History
200H. Advanced Historiography: United States
201H. Topics in History: United States
245. Colloquium in U.S. History
252A-252B. Seminar in Recent United States History to 1930
254A-254B. Seminar in United States Social and/or Intellectual History
256A-256B. Seminar in American Diplomatic History
257A-257B. Seminar in United States Urban History
258A-258B. Seminar in Working Class History
259A-259B. Seminar in Social History of Women in the U.S.
263A-263B. Seminar in the History of the American West
M264. History of American Education
282A-282B-282C. Seminar in Chinese History
285A-285B. Seminar in Modern Japanese History

Library and Information Science 111D. Ethnic Groups and their Bibliographies: Asian American History and Culture

Motion Picture/Television (Theater, Film, and Television) 128. Media and Ethnicity

Political Science 135. International Relations of China
136. International Relations of Japan

M147. Minority Group Politics
159. Chinese Government and Politics
160. Japanese Government and Politics
C250C. Chinese and East Asian Studies
C250D. Japanese and Western Pacific Studies
Psychology 175. Community Psychology
176. Experimental Community Psychology
225. Seminar: Critical Problems in Social Psychology
M228. Political Psychology
297. Issues in the Social Development of the Minority Child
Sociology 124. Ethnic and Status Groups
125. Urban Sociology
134. Comparative Social Institutions of East Asia
155. Intergroup Conflict and Prejudice
234. Sociology of Community Organization
238A-238B. Fieldwork in Minority Communities
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 the Sociology of East Asia
291. Moral Solidarity in Communities
Theater (Theater, Film, and Television) 102E. Theater of the Non-European World
202R. Seminar in East Asian Theater
202S. Seminar in South Asian Theater
202T. Seminar in Southeast Asian Theater

Astronomy

8979 Math Sciences, (213) 825-4434

Professors
Ferdinand Coroniti, Ph.D., *Chair*
Harland W. Epps, Ph.D.
Michael A. Jura, Ph.D.
Mark Morris, Ph.D.
Mirek Plavec, Ph.D.
Roger K. Ulrich, Ph.D.
Edward L. Wright, Ph.D.
Benjamin Zuckerman, Ph.D.
Lawrence H. Aller, Ph.D., *Emeritus*
Daniel M. Popper, Ph.D., *Emeritus*

Associate Professor
William I. Newman, Ph.D.

Assistant Professor
Matthew Malkan, 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, optical design, galaxies, quasars, and observational and theoretical cosmology.

The department's second responsibility is to the undergraduate astronomy major who hopes for a career in astronomy. Some Bachelor of Science degree recipients go on to graduate work; some opt for teaching careers, for which their training in physics, astronomy, and mathematics is most useful; still others find excellent jobs in industry, where their broad background in physical science with a specialty in astronomy 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. Astronomy 3, 4, 5, and 6 are nonmathematical courses open to the general University student normally not intending to major in the physical sciences.

Astronomy 3 is the fundamental course recommended for every University student who does 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 course 3H or 4, 5, or 6.

Astronomy 4, 5, and 6 are nonmathematical courses which develop the topics covered in course 3 to somewhat greater depths. Course 4 details the stars and stellar systems; course 5 concentrates on the problem of life in the universe; course 6 discusses the structure and evolution of the universe and the historical development of our ideas about it. 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 astronomy 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 represent a serious and systematic introduction to astrophysics and require a good background in physics and mathematics (at least two quarters of the Physics 8 series and two quarters 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 Degree

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:* Chemistry 11A. Systematic study of astronomy 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:* Earth and Space Sciences 101, Physics 108, 112, 123, 124, 132.

Honors Program

Senior majors in astronomy with a 3.4 grade-point average in all astronomy, mathematics, and physics courses are eligible for the honors program in astronomy. In addition to completing all courses required for the major, the honors student must complete two quarters of Astronomy 199. To receive honors and highest honors at graduation, the grade-point average must remain at 3.4 or better, and the 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) Aptitude Test and Advanced Test in Physics. For further information, contact the Graduate Adviser, Department of Astronomy, 8979 Math Sciences, UCLA, Los Angeles, CA 90024.

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 Degree

Course Requirements

Nine courses are required for the master's degree, of which at least five must be at the graduate level in astronomy. 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 the departmental written comprehensive examinations. 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

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, mathematics, or physics, or 100- or 200-series courses in education required for the teaching 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. Degree

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 quarter in residence.

Teaching Experience

Before receiving a Ph.D., you are required to spend at least three quarters 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 the 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 projects 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.

The evaluation of the projects 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 would be 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

3. Astronomy: The 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 is required beyond that necessary for admission to the University in freshman standing. A course for the general University student, normally not intending to major in physical sciences, on the development of ideas in astronomy and what has been learned of the nature of the universe, including recent discoveries and developments.
Mr. Epps, Mr. Malkan, Mr. Plavec

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. Course requires the 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 astronomy or in physical and mathematical sciences. Mr. Jura

4. The Universe of Stars and Stellar Systems. Lecture, three hours; discussion, one hour. Prerequisite: course 3 or 3H or equivalent. An essentially nonmathematical course for the general University student with previous introduction to astronomy; a 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. Epps, Mr. Plavec

5. Life in the Universe. Lecture, three hours; discussion, one hour. Prerequisite: prior introduction to astronomy or consent of instructor. Life on earth and the prospects for life elsewhere in the context of the evolution of the universe from the simple to the complex. Course material is primarily from astronomy and biology but includes some chemistry, geology, and physics. Selected topics are 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. An essentially nonmathematical exposition of our ideas about the structure and evolution of the universe. Historical development of the ideas up to the present time. Problem of cosmic center and cosmic edge. Space and time. Curvature of space. General relativity. Black holes. The expanding universe and cosmological redshift. Early stages of the universe, Big Bang, current ideas of the inflationary universe.
Mr. Malkan (Sp)

10. Practice in Observing (2 units). Laboratory, two and one-half hours one evening per week. Prerequisites: knowledge of plane trigonometry and prior or concurrent course in astronomy, or consent of instructor. Practical work for beginners, including telescopic observations and laboratory exercises cognate to an introductory course in astronomy. (F)

81. Astrophysics I: Stars and Nebulae. (Formerly numbered 101.) Lecture, three hours; laboratory, one hour. Prerequisites: Mathematics 31A, 31B, Physics 8A, or equivalent, or consent of instructor. Open to qualified sophomore and upper division students. A 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. Plavec (W)

82. Astrophysics II: Stellar Evolution, Galaxies, and Cosmology. (Formerly numbered 101.) 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. The 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 the earliest moments of the universe.
Mr. Coroniti

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, the Saha equation, degeneracy. Applications to stellar atmospheres, stellar interiors, and the interstellar medium.
Mr. Epps, Mr. Jura (W)

117. Radiation and Fluids in Astrophysics. Lecture, three hours. Prerequisites: course 115 or equivalent and junior standing in astronomy 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 the 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 astronomy 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 the normally observed stages to white dwarfs, neutron stars, and black holes. Novae, supernovae, other variable stars, chromospheres and coronae of the 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 astronomy or physics or consent of instructor. Properties of star clusters and galaxies, with particular emphasis on the Milky Way galaxy. Clusters and superclusters of galaxies. Extragalactic distance scale. Quasars and active galaxies. Topics in cosmology, including the 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 astronomy, 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 the automatic collection of data and for processing 2-D astronomical images. Mr. Wright (F)

199. Special Studies (2 or 4 units). Prerequisites: senior standing in astronomy or physics (with an outstanding record), consent of instructor. Special studies with an individual faculty member. With prior consent, the course may be used to carry out a meritorious observing program at the UCLA students' observatory, or in special cases, with the 24-inch reflector.

Graduate Courses

Prerequisite to all graduate courses is consent of instructor. Courses 204A through 230C are offered in alternate years and consist of three quarters 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. Surveys the various fields of astronomy and astrophysics; gives first acquaintance with working methods and with the department. Survey of basic astronomical nomenclature; the background in physics and mathematics outlined as required in graduate courses.

201. Astrophysics of the Solar System. Prerequisite: graduate standing or consent of instructor. The sun, solar phenomena, and solar-terrestrial relationships. The interplanetary medium and astronomical plasma physics, comets, meteorites, meteors, satellites and planets, planetary atmospheres. Origin and evolution of the solar system. Mr. Ulrich

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. Epps, Mr. Ulrich, Mr. Wright

208A-208B-208C. The Interstellar Medium (4 units, 6 units, 10 units). Dynamics and physics of interstellar gas and dust. Radio observations of the interstellar medium. Diffuse and planetary nebulae. Magnetic fields in space. Star formation. Topics in high-energy astrophysics.
Mr. Jura, Mr. Zuckerman

217A-217B-217C. Stellar Photospheres (4 units, 6 units, 10 units). Physics of stellar photospheres and radiative transfer. The 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 the 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. Special topics offered by distinguished visiting professors. Open to qualified graduate students in astronomy and in related fields (physics, atmospheric sciences, earth and space sciences). May be repeated for credit.

250. Seminar on Current Astronomical Research (2 units). Required of all graduate students. Current astronomical problems. S/U grading. (F,W,Sp)

M285. Origin and Evolution of the Solar System. (Same as Earth and Space Sciences M285.) Dynamical problems of the solar system; chemical evidences from geochemistry, meteorites, and the solar atmosphere; nucleosynthesis; solar origin, evolution, and termination; solar nebula, hydromagnetic processes, formation of the planets and satellite systems. Content varies from year to year. May be repeated for credit. S/U grading. Mr. Kaula

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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, (213) 825-1217

Professors

Akio Arakawa, D.Sc. *(Atmospheric Dynamics)*
Michael Ghil, Ph.D. *(Climate Dynamics)*
George L. Siscoe, Ph.D. *(Atmospheric Physics), Chair*
Richard M. Thorne, Ph.D. *(Atmospheric Physics)*
Sekharipuram V. Venkateswaran, Ph.D. *(Atmospheric Physics)*
Morton G. Wurtele, Ph.D. *(Atmospheric Dynamics)*
Michio Yanai, D.Sc. *(Atmospheric Dynamics)*
James G. Edinger, Ph.D., *Emeritus*
Yale Mintz, Ph.D., *Emeritus*
Hans R. Pruppacher, Ph.D., *Emeritus*

Assistant Professors

Carlos R. Mechoso, Ph.D. *(Atmospheric Dynamics)*
Derek C. Montague, Ph.D. *(Atmospheric Chemistry)*
Roger M. Wakimoto, Ph.D. *(Atmospheric Dynamics)*

Scope and Objectives

The atmospheric sciences present a wide variety of problems of compelling scientific interest and increasing social concern. This is exemplified by the efforts to improve air quality, the depredations caused by severe storms and floods, the attempts to control or modify weather phenomena, the problems of long-range weather forecasts and climate change, the expanding scientific frontiers into our outer atmosphere and the atmospheres of other planets.

The department offers a broad curriculum in dynamic and synoptic meteorology, upper atmospheric and space physics, cloud microphysics, atmospheric chemistry, and radiative transfer in planetary atmospheres.

The Bachelor of Science degree may qualify students for entry-level technical positions or represent 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 1A, 3A, 10H, 11, Physics 8A, 8B/8BL, 8C/8CL, 8D/8DL, 8E, Mathematics 31A, 31B, 32A, 32B, 33A, 33B, Chemistry 11A, Program in Computing 3.

The Major

Required: Atmospheric Sciences 104A, 104B, 104C, M140, 161, Physics 131; three courses from Atmospheric Sciences 141, 142, 143, 144, 145, M154; two courses from Physics 110A, 110B, 112, M122, 132, 140, Chemistry 110A, 110B, Mathematics 135A, 135B, 136, 140A, 140B. Students preparing for graduate studies in atmospheric chemistry should take Chemistry 11B, 11C, 110A, 110B; students preparing for graduate studies in cloud physics, precipitation, and atmospheric chemistry should take Atmospheric Sciences 145, Physics 140, Mathematics 135A-135B, 140A; students preparing for graduate studies in upper atmospheric and space physics should take Atmospheric Sciences 145, M154, Physics M122; students preparing for graduate studies in dynamics/synoptics should take Atmospheric Sciences 141, 142, Physics 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 the Graduate Admissions Office. 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. In addition to students holding bachelor's degrees in meteorology or atmospheric sciences, graduates with degrees in related disciplines—astronomy, chemistry, engineering, geophysics, mathematics, 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; cloud physics, precipitation, and atmospheric chemistry; radiation; upper atmospheric 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. The only formal course requirement beyond the UCLA general requirements is Atmospheric Sciences 260 in which you must present a formal seminar attended and graded by all faculty. 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 coursework given during a prior two-year period. The examination is usually conducted at the end of the Fall and Spring Quarters, but special arrangements can be made for the Winter Quarter. A grade-point average of 3.0 is required for a pass at the M.S. level; a GPA of 3.5 or better allows you to continue toward entry into the Ph.D. program. 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 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.

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. 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 95 percent of our graduate students serve as teaching assistants for one or more quarters.

Qualifying Examinations

After passing the comprehensive examination at the requisite level or completing the M.S. thesis in this department, you must take a further in-depth written or oral examination in your area of research specialization conducted by your departmental guidance committee. Subsequently, a full doctoral committee is appointed to conduct the University Oral Qualifying Examination on your selected dissertation topic and related areas and the final dissertation defense 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. An introduction to weather maps and satellite imagery and their use in making a weather forecast. Discussions also include the structure of the National Weather Service and the 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.
Mr. Wakimoto (F)

1A. Introduction to Weather Maps and Weather Forecasting. Lecture, three hours; discussion, one hour. Prerequisite: atmospheric sciences major. A course for majors parallel to course 1.
Mr. Wakimoto (F)

2. Air Pollution. Lecture, three hours; discussion, one hour. A Letters and Science general education requirement course for all students interested in the causes and effects of high concentrations of pollution in the atmosphere. Topics include the 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 the biosphere and the oceans; stratospheric pollution. Mr. Montague (Sp)

3. Introduction to the Atmospheric Environment. Lecture, three hours; discussion, one hour. A course specifically designed to satisfy in part the Letters and Science general education requirement of students majoring outside the physical sciences. The nature and causes of weather phenomena, including winds, clouds, rain, lightning, tornadoes and hurricanes, solar and terrestrial radiation; phenomena of the higher atmosphere; the ionosphere and the auroras; causes of air pollution; proposed methods and status of weather modification.
Mr. Siscoe, Mr. Venkateswaren (F,W,Sp)

3A. Introduction to the Atmospheric Environment. Lecture, three hours; discussion, one hour. Prerequisite: atmospheric sciences major. A course for majors parallel to course 3; discussion section includes use of calculus.
Mr. Siscoe, Mr. Venkateswaren (F,W,Sp)

4. California Weather and Climate. (Not the same as course 4 prior to Fall Quarter 1986.) Lecture, two hours; laboratory, two hours; field trips. The climate and weather in California. Topics include marine layer, sea-land breeze, low-level temperature inversion, severe weather, satellite interpretation, weather forecasting, and use of interactive computing in weather analysis. Mr. Wakimoto

5. Climates of Other Worlds. Lecture, three hours; discussion, one hour. Introduction to the atmospheres of planets and their satellites in the solar system using information obtained during the recent planetary exploration program. An elementary description of the origin and evolution of atmospheres on the planets. Climates on the planets, the conditions necessary for the evolution of life, and its resulting effect on the planetary environment.
Mr. Thorne

6. Climate and Climatic Change. Lecture, three hours; discussion, one hour. A course specifically designed to satisfy in part the Letters and Science general education requirement of students majoring outside the physical sciences. Introduction to the physical causes of climate, the classification of climate, and the global distribution of climate types. Description of climate changes over time scales ranging from the lifetime of earth to el niño events. Discussion of the causes of climatic change (e.g., the long-term steady increase in solar luminosity, short-term fluctuations in solar luminosity, changes in the earth's orbit, changes in atmospheric composition, volcanoes, anthropogenic changes such as increased CO_2 and nuclear war). State of the art in modeling and predicting climate. Mr. Venkateswaran (Sp)

7. Meteorology in History and Art. Lecture, three hours; discussion, one hour. The impact of weather and climate on society, their dominant role in mythology and religion, their prominence in art, literature, and music. The major developments in man's understanding of nature as reflected through his reaction to and thoughts about the sky and its phenomena. Mr. Siscoe

8. Clouds, Rain, and Storms. (Formerly numbered 4.) 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. Mr. Venkateswaran

10H. Introduction to Atmospheric Sciences. (Formerly numbered 3H.) Lecture, three hours; discussion, one hour. Prerequisite: Physics 8D or exceptional performance in high school mathematics and physics or consent of instructor. An introductory course in atmospheric phenomena and atmospheric processes, required of atmospheric sciences majors and recommended for honors students who are declared or potential majors in the physical sciences or engineering. Mr. Wurtele (W)

11. Introduction to Weather Analysis. Lecture, two hours; laboratory, three hours. Prerequisites: course 10H, Mathematics 33A. The mean structure of the atmosphere. General characteristics and source regions of air masses. Polar-front theory. Weather in relation to disturbances. Upper-level wind structure and its relationship to cyclone development. Laboratories include an introduction to scalar analysis, hourly airways observations, synoptic and rawinsonde code. Students make weather forecasts for different areas of the United States. Mr. Wakimoto (Sp)

Upper Division Courses

101. Meteorology and Society. Lecture, three hours; discussion, one hour. Prerequisite: upper division or graduate standing. Intended for students in architecture, urban planning, law, and engineering, and all students interested in the impact of weather on society. The impacts on and uses of meteorology in society. Climate and architectural planning. Weather and engineering structures. Forensic meteorology in civil cases. The uses and abuses of short- and long-term weather forecasts and their current validity. The status of attempts to modify climate — in particular, to increase rainfall. Meteorology and public policy — in particular, air pollution legislation and acid rain investigations. Mr. Wurtele

104A. Atmospheric Thermodynamics. Lecture, three hours; discussion, two hours. Prerequisites: Chemistry 11A, Mathematics 33B, Physics 8D. Basic thermodynamics, including the 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. Montague (F)

104B. Introduction to Dynamic and Synoptic Meteorology I. Lecture, two hours; laboratory, three hours. Prerequisites: courses 10H, 11. Atmospheric continuum. The properties of velocity field: vorticity, divergence, streamlines and trajectories, stream function and velocity potential. The equation of motion for fluids. Special atmospheric cases such as the geostrophic wind, gradient wind, ageostrophic wind, and thermal wind. Mr. Wakimoto (Sp)

104C. Introduction to Dynamic and Synoptic Meteorology II. Lecture, two hours; laboratory, three hours. Prerequisite: course 104B. The conservation of mass and the equation of continuity. Transformation of the vertical coordinate. Circulation and the vorticity equation. The thermodynamic energy equation. Mr. Wakimoto (W)

M140. Introduction to Fluid Dynamics. (Formerly numbered M149.) (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. Surface and internal gravity waves. Rotating frame. Viscous flow. Mr. Wurtele (F)

141. Atmospheric Motion I. (Formerly numbered 150.) Lecture, three hours; discussion, two hours. Prerequisite: course M140. Structure and dynamics of large-scale motions in the atmosphere. The quasi-static equilibrium. Quasi-geostrophic motions. Rossby waves. Extratropical cyclones. Fronts and frontogenesis. The general circulation of the atmosphere. Mr. Yanai (W)

142. Atmospheric Motion II. (Formerly numbered 151.) Lecture, three hours; discussion, one hour. Prerequisite: course 141. Small-scale nonhydrostatic motions in the atmosphere. Internal gravity waves. Atmospheric turbulence and convection. The planetary boundary layer. Elementary cumulus dynamics. Mesoscale weather systems. Hurricanes and tropical disturbances. Mr. Yanai (Sp)

143. Physical Oceanography. Lecture, three hours; discussion, one hour. Prerequisite: course 141. Physical structure of the 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. Mechoso (W)

144. Micrometeorology and Air Pollution Meteorology. Lecture, three hours; discussion, one hour. Prerequisite: course 142. Wind and temperature structure in the surface layer; mesoscale weather and wind systems; turbulence and diffusion; evaporation; transport, diffusion, and transformation of atmospheric contaminants. Mr. Wurtele (Sp)

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. Mr. Siscoe, Mr. Thorne

M154. Solar Terrestrial Physics. (Same as Earth and Space Sciences 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. The solar wind. The magnetospheres and the ionospheres of the earth and other planets. Geomagnetic phenomena. Aurora and airglow. Mr. Venkateswaren (F)

161. Numerical Methods in Atmospheric Sciences. Lecture, two hours; laboratory, three hours. Prerequisites: course 141 and Program in Computing 3, or consent of instructor. Numerical solutions of problems selected from atmospheric sciences. Matrix inversion. Solution of the oscillation, decay, advection, and vorticity equations. Mr. Mechoso (W)

M180. Nonlinear Waves. (Same as Earth and Space Sciences M180.) Lecture, three hours; discussion, one hour. Prerequisite: course M140 or consent of instructor. Basic concepts and examples of nonlinear wave behavior: limit cycles, attractors, bifurcations, relaxation, subharmonics, solitons, periodic versus chaotic behavior, Lorenz masks and Rossler bands. Mr. Newman

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 an honors thesis. (F,W,Sp)

198. Operational Meteorology (2 units). Laboratory, six hours. Prerequisite: 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. Wakimoto

199. Special Studies in Meteorology (2 or 4 units). Prerequisite: consent of instructor. Special individual study.

Graduate Courses

200A. Introduction to Physics of Clouds and Precipitation. (Formerly numbered 152.) Lecture, three hours. Macroscopic and microscopic description of clouds and precipitation; phase change processes in the atmosphere; theory of drop forming and ice forming nuclei; development of precipitation in clouds; cloud chemistry, cloud electricity. Mr. Siscoe (W)

200B. Atmospheric Radiation. (Formerly numbered 153.) Lecture, three hours. Thermal radiation from the sun and planets. Transfer of thermal radiation through planetary atmospheres. Radiation budget. Scattering of electromagnetic radiation by atoms. Molecules, dust, and aerosols. Remote sensing. Meteorological optics. (W)

200C. Introduction to Atmospheric Chemistry. (Formerly numbered 156.) Lecture, three hours. Chemical composition and history of the atmosphere: natural cycles of important minor constituents; relevance and application of elementary chemical kinetics, thermochemistry, spectroscopy, and photochemistry to chemical processes in the lower and upper atmosphere; chemical aspects of air pollution and aerosol formation. Mr. Montague

Dynamic and Synoptic Meteorology

201. 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 the design of a field project.

203. Dynamics of Fronts. Lecture, three hours. Prerequisites: courses 209, 210A. Margules relations; early Norwegian cyclone models; quasi-geostrophic and semi-geostrophic frontogenesis; orography and surface friction; mesoscale organizations near fronts: observations and theory; frontogenesis as a problem in nonlinear dynamics.

206. Atmospheric Convection. Lecture, three hours. Prerequisite: course M140 or consent of instructor. Rayleigh convection. Buoyant convection from isolated sources. Thermodynamics of moist air. Theory of moist convection. Observations of atmospheric convection. Models of cumulus convection. Mr. Yanai (F)

208A. 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. Mr. Wurtele

208B. Atmospheric Diffusion and Air Pollution. 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 control. Mr. Wurtele

209. Introduction to Geophysical Fluid Dynamics. Lecture, three hours. Equation of motion in a rotating frame, with special emphasis on its application to the shallow-water model. Potential vorticity. Geostrophic motion. Gravity and Rossby waves. Geostrophic adjustment. Quasi-geostrophic motion. Laplace's tidal equation. Kelvin and mixed Rossby gravity waves. Mr. Arakawa

210A. Atmospheric Wave Motions. Lecture, three hours. Prerequisite: course 209. Oscillations of a compressible, stratified, and rotating atmosphere. Scale analysis and dynamics of quasi-geostrophic motion. Quasi-geostrophic wave instability. Vertical propagation of wave energy. Mr. Arakawa (W)

210B. Dynamics of Planetary Circulations. Lecture, three hours. Prerequisite: course 210A. 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. Mr. Mechoso

212A. Numerical Methods in Geophysical Fluid Dynamics. Lecture, three hours. Prerequisite or corequisite: course 209. 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. Spectral methods. Mr. Arakawa (F)

212B. Numerical Modeling of the Atmosphere. Lecture, three hours. Prerequisites: courses 210A and 212A, or consent of instructor. Physical and computational design of numerical weather prediction and climate simulation models. The basic dynamical models. Vertical, horizontal, and time differencing. Parameterizations of sub-grid scale processes. Mr. Arakawa

213. General Circulation of the Atmosphere. (Formerly numbered 151.) Lecture, three hours; discussion, one hour. Observed mean circulations of the atmosphere. The momentum, heat, and moisture budgets and the energy cycle. Laboratory experiments. Basic dynamics of the Hadley and Rossby resumes. Vertical propagation of planetary waves. Stratospheric sudden warming. Mr. Arakawa (Sp)

214A. Climatic Equilibria. Lecture, three hours. The general circulation of the atmosphere and oceans. Radiative transfer and energy-balance models. Multiple equilibria and their stability. Variational principles and stochastic perturbations. Coupled energy-balance models of the atmosphere and oceans. Sensitivity of climate to external and internal changes. Mr. Ghil

214B. Climatic Oscillations. Climatic history of our planet. Quaternary glaciations. Fluid dynamics of the atmosphere and oceans, ice sheets and mantle. Oscillatory models of glaciation cycles. Bifurcations from equilibria to periodic and aperiodic solutions. The predictability of climatic change on various time scales. Mr. Ghil

216A. Tropical Motions with Moist Processes. Lecture, three hours. Prerequisite: course 206. Cumulus convection and the boundary layer in the tropics. Interaction of cumulus convection with the large-scale motion. Tropical cyclones. Monsoon meteorology. Mr. Yanai (W)

216B. Wave Motions in the Tropical Atmosphere. Lecture, three hours. Prerequisite: course 210A. Basic theory of equatorially trapped waves. Introduction to spectral analysis. Observations of tropical wave disturbances. Generation mechanisms of tropical waves. The quasi-biennial and semiannual oscillations. Mr. Yanai (W)

218. Dynamics of the Atmosphere-Ocean Systems. Lecture, three hours. Transfer of properties between atmosphere and ocean; wind-driven ocean currents; coastal upwelling. Air-sea interactions. Effects of the oceans on climate. Mr. Mechoso

219. Special Topics in Dynamic Meteorology (2 to 4 units). Content varies from year to year. S/U grading.

Cloud Physics, Precipitation, and Atmospheric Chemistry

221A. Atmospheric Chemistry I. Lecture, three hours. Prerequisite: course 200C or consent of instructor. Clean air chemistry of the troposphere; trace gases of biogenic and anthropogenic origin; tropospheric air pollution chemistry; physical and chemical properties of atmospheric aerosols; wet and dry deposition of pollutant gases and aerosol particles. Mr. Montague

221B. Atmospheric Chemistry II. Lecture, three hours. Prerequisite: course 200C or consent of instructor. Composition of the stratosphere, mesosphere, and ionosphere; chemistry of ground and excited state neutrals and of ions in the upper atmosphere; stratospheric pollution; chemistry of the airglow and nightglow; chemistry of other atmospheres. Mr. Montague

223A. Cloud and Precipitation Physics I. Lecture, three hours. Prerequisite: course 200A 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. Mr. Montague (F)

223B. Cloud and Precipitation Physics II. Lecture, three hours. Prerequisite: course 223A. Theory of the 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. Mr. Montague (Sp)

224. Atmospheric Electricity. Lecture, three hours. Prerequisites: course 223B, Physics 110A, 110B. Fair weather electricity; atmospheric ions; electric structure of stormy and nonstormy clouds; electric charge generation mechanisms in atmospheric clouds; physics of thunder and lightning; effect of electric fields and charges on cloud and precipitation formation.

228A. Clouds and Radiation. Lecture, three hours. Radiation budget of cloudy atmospheres, including cloud-albedo feedback mechanisms; dependence of cloud radiative properties on microphysical parameters; test-bed modeling techniques of radiative effect of clouds; radiative dynamical interactions in cloudy atmospheres.

228B. 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.

Radiation

235. Infrared Radiative Transfer. Lecture, three hours. Prerequisite: course 200B. Theory of radiative transfer. Approximate solutions to the equation of transfer. Absorption spectroscopy; band models; absorption by atmospheric gases; fluxes and heating rates. Satellite radiation measurements.

236. Scattering Processes in the Atmosphere. Lecture, three hours. Prerequisite: course 200B. Equation of transfer in a scattering medium. Stokes formalism; Rayleigh and Mie theories; polarization of skylight; scattering in a turbid atmosphere, aerosols and their effects on the radiation balance of the atmosphere. Experimental methods of determining aerosol parameters and their significance to meteorology.

238. Radiative Transfer in the Earth's Atmosphere. Lecture, three hours. Prerequisite: course 200B. Critical review of methods available to calculate the transfer of radiation (visible, ultraviolet, and infrared) through the atmosphere. Computations of fluxes and heating rates using various methods. Familiarity with the available techniques in the literature provided.

Upper Atmospheric and Space Physics

240A. Solar System Magnetohydrodynamics. Lecture, three hours. Prerequisite: course M154 or consent of instructor. Derivation of the MHD equations with two fluid aspects, generalized Ohm's law, small amplitude waves, discontinuities, shock waves, and instabilities. Applications to the statics and dynamics of the solar wind and planetary magnetospheres and to solar wind-magnetosphere-ionosphere coupling. Mr. Siscoe

240B. Solar System Microscopic Plasma Processes. Lecture, three hours. Prerequisite: course M154 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. Mr. Thorne

240C. Ionospheric Plasmas. Lecture, three hours. Prerequisites: courses M154, 240B. Formation of planetary ionospheric layers; transport processes; currents and electric fields; ionospheric plasma instabilities; nonlinear effects and artificial modification. Mr. Venkateswaran

246. Physics of the Ionosphere. Lecture, three hours. Prerequisites: Physics 110A and 110B, or consent of instructor. Structure, composition, and dynamics of ionospheric layers. Mr. Venkateswaran (Sp)

247. Radiation Belt Plasma Physics. Prerequisite: course 240B or consent of instructor. Turbulent plasma instabilities and their relation to satellite observations and magnetospheric structure. Processes responsible for the source, loss, and transport of energetic radiation belt particles. Mr. Thorne

248. Advanced Topics in Interaction between Lower and Upper Atmospheres. Lecture, three hours. Content varies from year to year. Mr. Venkateswaran

249. Special Topics in Solar Planetary Relations (2 to 4 units). Selected topics of current research interest in solar wind, magnetospheric, or ionospheric physics.

254. Radiative and Photochemical Processes of the Middle Atmosphere. Lecture, three hours. Prerequisites: courses 200B, 246, 255. Ultraviolet absorption processes. Infrared transfer by CO_2 and O_3. Radiative and photochemical roles of other trace constituents. Remote sensing of the middle atmosphere. Mr. Venkateswaran

255. Dynamics of the Stratosphere and the Mesosphere. Lecture, three hours. Prerequisite: course 210A. Photochemistry and radiation regime of the middle atmosphere; propagation of waves of tropospheric origin; radiative and photochemical damping effects; excitation and propagation of atmospheric tides; wave-zonal wind interactions; internal instabilities; theories of circulation features, including annual, semiannual, and quasi-biennial oscillations and the buildup and breakdown of polar vortex.
Mr. Venkateswaran

256. Remote Sensing. Prerequisite: course 255 or consent of instructor. Remote sensing of stratospheric temperature and composition — theory and practice. Mr. Venkateswaran

257. Radiation, Pollution, and Climate. Lecture, three hours. A breadth requirement for graduate students; specific background in radiation is not assumed. External and feedback influences of radiation and climate/carbon dioxide and climate/cloud albedo problems. Effects of photochemical, thermal, and particulate pollution on urban and global climates. Climate modeling. Mr. Venkateswaran

Special Studies

260. Seminar in Meteorology (2 units).

261. Seminar in Atmospheric Dynamics (2 units).

262. Seminar in Cloud and Precipitation Physics (2 units).

263. Seminar in Atmospheric Radiation (2 units).

264. Seminar in Physics of the Upper Atmosphere (2 units).

M270A-M270B-M270C. Seminar in Climate Dynamics (2 to 4 units). (Same as Earth and Space Sciences M270A-M270B-M270C and Geography M270A-M270B-M270C.) Lecture, two hours. Prerequisite: consent of instructor. The 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. The climate of other planets. The modeling, simulation, and prediction of modern climate on the monthly, seasonal, and interannual time scale. May be repeated for credit. S/U or letter grading. Mr. Berger, Mr. Ghil, Mr. Schubert

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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 137A, 137E, 240

Chemistry and Biochemistry 103, 110A, 110B, C123A-C123B, 215D, 223C, 225

Civil Engineering 181A

Computer Science 10C

Earth and Space Sciences 101, M140, M154, M180, 202, 203, 204, M211, 214, 228, 250, 261, 265

Electrical Engineering 103, 161, 162A, M185

Mathematics 131A-131B, 132, 135A-135B, 136, 141A-141B, 142, 145, 146, 150A-150B-150C, 152A-152B, 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, M192A, 192B, 192C, 250A, 250B, 250C, 251A, 251B, 251C, 252A, 252B, 259A

Physics 108, 110A, 110B, 112, 115A, 115B, M122, 131, 132, 210A, 210B, 215A, 215B, 222A-222B-222C, 231A, 231B, 231C

Biochemistry

See Biological Chemistry (School of Medicine), Biology, and Chemistry and Biochemistry

Biology

2203 Life Sciences, (213) 825-3481

Professors

Albert A. Barber, Ph.D. *(Cell Biology)*
George A. Bartholomew, Ph.D. *(Zoology)*
Joseph Cascarano, Ph.D. *(Cell Biology)*
David J. Chapman, Ph.D., D.Sc.
William R. Clark, Ph.D. *(Cell Biology)*
Martin L. Cody, Ph.D.
Wilbur T. Ebersold, Ph.D.
Roger O. Eckert, Ph.D. *(Neurobiology)*
Franz Engelmann, Ph.D.
John H. Fessler, Ph.D. *(Molecular Biology)*
Arthur C. Gibson, Ph.D. *(Botany)*
Robert Goldberg, Ph.D.
Malcolm S. Gordon, Ph.D.
Michael Grunstein, Ph.D.
Thomas W. James, Ph.D. *(Cell Biology)*
Harumi Kasamatsu, Ph.D.
J. Lee Kavanau, Ph.D.
James A. Lake, Ph.D. *(Molecular Biology)*
George G. Laties, Ph.D. *(Plant Physiology)*
O. Raynal Lunt, Ph.D.
Austin J. MacInnis, Ph.D. *(Cell Biology)*
Jeffrey Miller, Ph.D. *(Genetics)*
James G. Morin, Ph.D. *(Zoology)*
Leonard Muscatine, Ph.D.
Kenneth A. Nagy, Ph.D., *in Residence*
Park S. Nobel, Ph.D.
John D. O'Connor, Ph.D. *(Developmental Biology)*
Bernard O. Phinney, Ph.D.
Dan S. Ray, Ph.D. *(Molecular Biology)*
Philip W. Rundel, Ph.D.
Winston A. Salser, Ph.D. *(Molecular Biology)*
Richard W. Siegel, Ph.D.
Larry Simpson, Ph.D. *(Cell Biology)*
J. Philip Thornber, Ph.D. *(Plant Biochemistry), Chair*
Peter P. Vaughn, Ph.D. *(Zoology)*

Emeritus Professors

David Appleman, Ph.D.
Jacob B. Biale, Ph.D.
Nicholas E. Collias, Ph.D.
Frederick Crescitelli, Ph.D.
Eric B. Edney, Ph.D.
Karl C. Hamner, Ph.D.
Arthur W. Haupt, Ph.D.
Thomas R. Howell, Ph.D.
F. Harlan Lewis, Ph.D.
Mildred E. Mathias, Ph.D.
Everett C. Olson, Ph.D.
Charles A. Schroeder, Ph.D.
Fritiof S. Sjostrand, Ph.D.
Clara M. Szego, Ph.D.
Henry J. Thompson, Ph.D.
Boyd W. Walker, Ph.D.
Vladimir Walters, Ph.D.
Samuel G. Wildman, Ph.D.

Associate Professors

Clifford F. Brunk, Ph.D. *(Cell and Molecular Biology)*
Elma Gonzalez, Ph.D. *(Cell Biology)*
Henry A. Hespenheide, Ph.D.
Judith A. Lengyel, Ph.D.
John R. Merriam, Ph.D. *(Genetics)*
Peter M. Narins, Ph.D.
Paul H. O'Lague, Ph.D.
Charles C. Taylor, Ph.D.
Allan J. Tobin, Ph.D.
Elaine M. Tobin, Ph.D.
Richard K. Vance, Ph.D.

Assistant Professors

J. Chlöe Bulinski, Ph.D. *(Cell Biology)*
Donald G. Buth, Ph.D.
Jeanne Erickson, Ph.D.
Robert Gibson, Ph.D.
Michael Greenfield, Ph.D.
Meyer B. Jackson, Ph.D.
Blaire Van Valkenburgh, Ph.D.
Laurie Vitt, Ph.D.

Adjunct Professor

William M. Hamner, Ph.D.

Visiting Lecturers

Kathleen Diamond, Ph.D.
Catherine Jacobs, Ph.D.
Eric Mundall, Ph.D.
Steve Strand, Ph.D.

Scope and Objectives

Studies in biology touch every aspect of human existence, and seeking answers to human problems 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 degree combines essential background studies in mathematics, chemistry, and physics with a general introduction to all of these 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 Degree

The Bachelor of Science degree is divided into three 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 program offers great flexibility and can serve as adequate preparation for subsequent graduate study in any field of biology. The remaining two areas of concentration — molecular, cellular, and developmental biology (MCD) and ecology, behavior, and evolution (EBE) — provide more specialized instruction and strong preparation for employment or subsequent graduate study in the respective disciplines.

Pre-Biology Major

Students who have not completed all the courses required as preparation for the major are considered pre-biology majors. After completing those courses with a grade of C– or better in each, students must petition to enter the biology major in the Undergraduate Advising Office, 2312 Life Sciences.

In order to be admitted as pre-biology majors, transfer students who have 80 or more units must have completed one year of general chemistry with laboratory, Biology 5 and 7, or equivalent, and at least one of the following: (1) one year of calculus, (2) one year of calculus-based physics, or (3) two courses in organic chemistry with laboratory.

General Biology Concentration

Preparation for the Major: Biology 5, 5L, 6, 7, 8, 8L; Chemistry 11A, 11B/11BL, 11C/11CL, 21, 23, 25; 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: One course in morphology and systematics (Biology 100, 101, 105, 110, 153, or Microbiology 101); one course in developmental and molecular biology (Biology 138, 141, 143, 144, or 146); one course in physiology (Biology 158, 162, 166, 167, or 170); two additional upper division biology courses; four additional upper division courses in biology, chemistry, mathematics (except Mathematics 104, 106), microbiology, physics, or from Anthropology 125A, 125B, Biomathematics 110, Earth and Space Sciences 115, 120, Geography 108, 110, 112, Public Health 100B, 100C.

Molecular, Cellular, and Developmental Biology (MCD) Concentration

Preparation for the Major: Biology 5, 5L, 7, 8, 8L; Chemistry 11A, 11B/11BL, 11C/11CL, 21, 23, 25; 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: Three courses in developmental and molecular biology (Biology 138 or 141, 143, 144); four courses in biological chemistry (Chemistry 110A, 133A, 156, 157A); one of the following laboratory courses or sets of laboratory courses: Biology 158, 162, 166, M185/M186/M187, 142A and 157, or 171 and 172A; two additional upper division courses from the following list not used to satisfy another requirement: Biology 110, 138, 141, 145A, 149, 155, CM156, 157, 158, 162, 166, 171, 177, M185, 190A through 190D, 199, Microbiology 101.

Ecology, Behavior, and Evolution (EBE) Concentration

Preparation for the Major: Biology 5, 5L, 6, 7, 8, 8L; Chemistry 11A, 11B/11BL; 11C/11CL; Mathematics 31A, 31B, 32A; Physics 6A, 6B, and 6C, or 8A/8AL, 8B/8BL, 8C/8CL,and 8D/8DL; Chemistry 21, 23, and 25, or Chemistry 15, Mathematics 32B, and 33A.

The Major: One course in morphology and systematics (Biology 100, 101, 105, 110, or 152); one course in physiology (Biology 162, 166, 167, or 170); three courses in ecology, behavior, and evolution (Biology 111, 120, 122, 129, 135); one field quarter consisting of two to four courses from the Field Biology Quarter (FBQ), Catalina Marine Biology Quarter (CMBQ), or equivalent; additional upper division courses in biology, chemistry, mathematics (except Mathematics 104, 106), microbiology, or physics, as necessary to bring the total number of upper division courses to nine (recommended: Biology 119, M127, 130, 146, 168 in ecological and behavioral processes and Biology 103, 107, 112, 113, 114, 115 in taxon-oriented biology).

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 toward 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, with at least a 2.0 (C) overall average in all courses applied toward the major.

Honors

An overall GPA 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 GPA 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 Catalina Marine Biology Quarter (CMBQ). 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 113, 114, 115, 124, 125, 126, 128, 131, and 132. The Catalina Marine Biology Quarter occurs during Fall Quarter and includes some combination of Biology 102, C104, 123, 147, 148, 164, and 165. To participate, you must enroll in all courses in the respective program. 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.

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 (organismic and population biology). The major fields and subdisciplines are listed under faculty interests in the departmental brochure.

All applicants must take the Aptitude Test (verbal, quantitative, and analytical) of the Graduate Record Examination (GRE). The Advanced 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.

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 the Catalina Marine Science Center in the Fall Quarter (CMBQ), field biology in the Spring Quarter (FBQ), and tropical biology through courses offered by the Organization for Tropical Studies.

You also are required to complete the departmental written qualifying examination, given in the Fall and Spring Quarters, 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 and are accepted for admission to Fall Quarter only.

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 quarter.

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 the Fall Quarter. Applications to Division II (organismic and population biology) are reviewed by the division's admissions committee which advises prospective sponsors about the desirability of admission.

Course Requirements

There are no formal course requirements for the Ph.D., although specific requirements may be established individually by your guidance committee. 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 complete one academic year as a teaching assistant.

Oral Qualifying Examination

The University Oral Qualifying Examination is conducted by the 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

Requirements for the C.Phil. degree are identical with those for advancement to candidacy for the Ph.D., except that only four quarters of academic residence are required, including three quarters in continuous residence at UCLA. The C.Phil. is not given as a terminal degree.

Final Oral Examination

Final approval of the dissertation in the department is accomplished when the committee approves the written form and is satisfied with the final oral examination.

Lower Division Courses

2. Principles of Biology. Lecture, three hours; laboratory, 90 minutes. Designed for nonmajors. Not open to students with credit for course 5 or 7. Lectures include the structure and chemical composition of cells, animal structure and diversity, cellular respiration, photosynthesis, major organ systems with emphasis on human cell division, reproduction, development, ecology, population growth, genetics, evolution. Laboratory includes structure and function of cells, morphology of plants and animals, circulatory and nervous systems, embryology, plant diversity and adaptation, human genetics.

5. Biology of Organisms. Lecture, three hours; discussion/demonstration, two hours. Comparative morphology and embryology of the major plant and animal phyla; function of organ systems, including gas exchange, transport, regulation of the internal environment, hormones, coordination, and the nervous system.

5L. Organismic and Environmental Biology Laboratory (2 units). (Formerly numbered 6L.) Lecture, one hour; laboratory, three hours. Prerequisite: course 5. Introductory biology laboratory, including basic cell and microorganism organization, morphology and diversity of organisms, population biology, evolution, and community ecology.

6. Ecology, Evolution, and Behavior. Lecture, three hours; discussion, two hours. Prerequisites: course 5 and Mathematics 3A or 31A. A survey of the principles of population growth and ecology, competition, predation, community ecology, environmental physiology, population genetics, natural selection, and speciation.

7. Introductory Cellular and Molecular Biology. Lecture, three hours; discussion/laboratory, two hours. Prerequisites: course 5 and Chemistry 15 or 21. An integrated introduction to cellular and subcellular biology, including cells and organelles, molecular biology, cell cycles, and developmental biology.

8. Introductory Genetics. Lecture, three hours; discussion/demonstration, 90 minutes. Prerequisite: course 7. Principles of Mendelian inheritance and the chromosomal basis of heredity in prokaryotes and eukaryotes, recombination, biochemical genetics, mutation, DNA, the genetic code, gene regulation, genes in populations.

8L. Cellular and Molecular Biology Laboratory (2 units). Laboratory, three hours. Prerequisites: courses 5L, 8 (may be taken concurrently). Introductory laboratory experience, including bacterial growth, mitosis and meiosis, genetics, molecular biology, and developmental biology.

10. Plants and Civilization. Lecture, three hours; demonstration, one hour. Designed for nonmajors. The origin of crop plants; man's role in the development, distribution, and modification of food, fiber, medicinal, and other plants in relation to their natural history. Mr. A. Gibson (F,Sp)

13. Evolution of Life. Lecture, three hours; discussion, one hour. Not open to life sciences majors. Limited to 100 students. An introduction to biology within the framework of evolutionary theory. The relationships of evolutionary thought to other areas of knowledge and society. Natural selection and the origin of variation examined in the context of genetics, molecular biology, physiology, phylogeny, population dynamics, behavior, and ecology. Emphasis on the critical role of historical processes. (F)

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 the 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, the role of chromosomes in heredity, and the role of genes in disease and population structure. (Sp)

25. The Oceans. Lecture, three hours; discussion, one hour. Not open to students in the sciences or to students with credit for Earth and Space Sciences 15. Limited to 40 students. Physical and chemical processes that take place in the oceans, with emphasis on their effects on organisms. (W)

30. Biology of Cancer. An introduction to molecular, cellular, and clinical aspects of cancer and a consideration of the sociological and psychological impact of cancer on the individual and society. Each lecture/discussion period is given by an invited lecturer who is prominent in cancer research or treatment. P/NP grading.

35. Mathematical Ideas in Biology. Lecture, three hours; discussion, one hour. Prerequisites: one year of calculus, consent of instructor. The use of mathematical ideas and analysis in the formulation and evaluation of theories of biological phenomena such as growth, growth control, biological rate processes, and applications of random walk theory. Coverage of topics tailored to specific student interests.
Mr. Kavanau

Upper Division Courses

Course 5L is prerequisite to all upper division laboratory courses. Course 8 is prerequisite to all upper division courses in cell, molecular, and developmental biology. If you do not complete course 8, you will be dropped from those courses.

100. Biology of Lower Plants (6 units). Lecture, four hours; laboratory, six hours. Prerequisite: course 5 or equivalent or consent of instructor. An introduction to the biology of algae, fungi, and bryophytes, with emphasis on form, function, and development, and the role of lower plants in the environment. Students are strongly encouraged to take both courses 100 and 101 since these represent a course sequence surveying the entire plant world as appropriate background for upper division courses in plant biology.
Mr. Chapman

101. Biology of Vascular Plants (6 units). Lecture, three hours; laboratory, six hours. Prerequisite: course 5 or equivalent or consent of instructor. An 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 100 and 101 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. Prerequisite: completion of "Preparation for the Major" courses 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 at the *Catalina Marine Science Center.*
Mr. Morin, Mr. Muscatine

103. Taxonomy of Flowering Plants (4 or 8 units). *Offered either as a quarter-long course for four units or as an eight-unit course as part of the Field Biology Quarter.* The four-unit course has lecture, two hours; laboratory, six hours. The evolution, systematics, morphology, principles of taxonomy, phylogenetic systems, nomenclature, and modern methods of investigation. The eight-unit course covers the same basic lecture and laboratory material in five intensive weeks, followed by an extended field trip where students do individual field projects. Mr. A. Gibson

C104. Experimental Invertebrate Zoology (6 units). (Formerly numbered 106A.) Lecture, two hours; laboratory, 12 hours. Prerequisites: courses 105, 129, and 166 or 167 (either may be taken concurrently). Advanced treatment of physiology, behavior, and ecology of invertebrates, with emphasis on independent laboratory and field investigations. Concurrently scheduled with course C212. Mr. Morin

105. Biology of Invertebrates (6 units). Lecture, three hours; laboratory/field trips, six hours. Prerequisite: completion of "Preparation for the Major" courses or consent of instructor. Introduction to the systematics, evolution, natural history, morphology, and physiology of the invertebrates.
Mr. Morin, Mr. Muscatine

106. Experimental Marine Invertebrate Biology (6 units). (Formerly numbered 106B.) Lecture, two hours; laboratory, 12 hours. Prerequisites: courses 105 and 166 (latter may be taken concurrently), or equivalent, or consent of instructor. An advanced course of natural history, physiology, biochemistry of invertebrates, with emphasis on independent laboratory and field investigations. Mr. Muscatine

107. Entomology (6 or 8 units). Prerequisites: courses 5, 6. *Offered either as a quarter-long course for six units or as an eight-unit course as part of the Field Biology Quarter.* The six-unit course has lecture, three hours; laboratory, six hours; additional field trips. The morphology, physiology, development, systematics, behavior, and ecology of insects. The eight-unit course covers the same basic lecture and laboratory material in two and one-half intensive weeks, followed by an extended field trip where students do individual field projects in insect biology.
Mr. Greenfield

110. Vertebrate Morphology. Lecture, three hours; laboratory, four hours. Prerequisites: courses 5, 5L, 6. A study of vertebrate morphology and evolution from the viewpoint of comparative anatomy of adult forms, developmental anatomy, and paleontology. Laboratory study of selected vertebrates.
Mr. Vaughn (F,W)

111. Biology of Vertebrates. Lecture, three hours; demonstration/field trips/discussion, three hours. Prerequisites: courses 5, 5L, 6. The adaptations, behavior, and ecology of vertebrates.
Mr. Bartholomew, Mr. Howell, Mr. Vitt

112. Ichthyology. Lecture, two hours; laboratory, six hours; field trips. Prerequisites: courses 5, 6, and 110 or 111, or consent of instructor. Limited to 24 students. The biology of freshwater and marine fishes, with emphasis on their evolution, systematics, morphology, zoogeography, and ecology. Field trips examine the fishes of the Southern California shoreline, tidepools, and coastal streams. Mr. Buth

113. Herpetology (4 or 8 units). Prerequisites: courses 5, 6. Recommended: courses 111, 120, 122. *Offered alternately as a four-unit course to be given during a conventional academic quarter or as an eight-unit course as part of the Field Biology Quarter.* The four-unit course has lecture, three hours; laboratory, six hours; approximately four weekend field trips. The systematics, distribution, physiology, behavior, and ecology of amphibians and reptiles. The eight-unit course covers the same basic lecture and laboratory material in two intensive weeks, followed by an extended field trip where students do individual field projects in behavior, physiological ecology, or field ecology.

114. Ornithology. Lecture, two hours; laboratory/discussion/field trips, six hours. Prerequisites: course 111, consent of instructor. Limited enrollment. The systematics, distribution, physiology, behavior, and ecology of birds. Mr. Howell

115. Mammalogy. Lecture, three hours; laboratory, four hours; field trips. Prerequisites: course 111 or equivalent, consent of instructor. The evolution, ecology, behavior, and physiology of mammals.

116AH. Honors Seminar in Organismic and Evolutionary Biology (2 units). Prerequisites: course 5 and honors program standing, or consent of instructor. Reading and group discussion of organismic topics introduced in course 5. Students are expected to participate in the honors program and continue into course 116BH. P/NP (for students unable to take course 116BH due to academic or scheduling problems) or In Progress (credit to be given only on completion of course 116BH) grading.

116BH. Honors Seminar in Organismic and Evolutionary Biology (2 units). Prerequisites: courses 6, 116AH. Reading and group discussion of evolutionary and ecological topics introduced in course 6. Students are expected to participate in the honors program and must have taken course 116AH the previous quarter.

117. Vertebrate Paleontology. (Formerly numbered M117.) Lecture, three hours; laboratory, three hours. Prerequisite: course 110. Recommended: a course in general geology. Limited enrollment. The fossil record of the evolution of the vertebrates, with emphasis on the morphology of primitive forms in the series from fish to mammal. Mr. Vaughn (Sp)

M118. Paleobotany. (Same as Earth and Space Sciences M118.) Lecture, three hours; laboratory, three hours. Prerequisite: one course in biological science or consent of instructor. Recommended: Earth and Space Sciences 2 or equivalent. Survey of morphology, paleobiology, and evolution of vascular and nonvascular plants during geologic time, with particular emphasis on major evolutionary events.
Mr. Schopf

119. Mathematical Ecology. Lecture, three hours. Prerequisites: course 6 and Mathematics 32A, or consent of instructor. Recommended: course 122. Use of models of population growth and interspecies interactions, formulated as multidimensional, nonlinear differential, or difference equations, to explore the structure and dynamics of ecological populations and communities. Mr. Vance

120. Evolutionary Biology. Lecture, three hours; laboratory, two hours. Prerequisite: completion of "Preparation for the Major" courses. Highly recommended: Mathematics 31A, 31B, 32A. Recommended for biology majors specializing in environmental and population biology. Introduction to the mechanics and processes of evolution, with emphasis on natural selection, population genetics, speciation, evolutionary rates, and patterns of adaptation.
Mr. Cody, Mr. Hespenheide (W)

121. Seminar in Ecology (2 units). Prerequisites: course 120 or 122, consent of instructor. Undergraduate seminar in ecology; reading and discussion of current research, including preparation of review paper or annotated bibliography. May be repeated twice for credit. Mr. Hespenheide

122. Ecology. Lecture, three hours; laboratory, three hours. Prerequisite: completion of "Preparation for the Major" courses. Highly recommended: Mathematics 31A, 31B, 32A. Recommended for biology majors specializing in environmental and population biology. Introduction to population and community ecology, with emphasis on the growth and distribution of populations, interactions between species, and the structure, dynamics, and functions of communities and ecosystems. Mr. Cody, Mr. Vance (F)

123. Ecology of Marine Communities. Five-week intensive course. Lecture, five hours; laboratory, 15 hours. Prerequisite: completion of "Preparation for the Major" courses or consent of instructor. Field study of the natural history and ecology of marine organisms and communities, involving an independent research project. Given at the *Catalina 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 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 the course is given as part of the Field Biology Quarter, it is eight units and lasts for five weeks.* Field and laboratory research in ecology, the collection, analysis, and write-up of numerical data, with emphasis on design and execution of field studies. Mr. Cody

125. Plant Population Ecology (4 or 8 units). Lecture, two hours; laboratory, six hours; field trips. Prerequisites: course 120, consent of instructor. *Offered either as a quarter-long course for four units or in the Field Biology Quarter as a concentrated five-week course for eight units.* A study of ecological variation, structure, distribution, and reproductive biology of plant populations, emphasizing field studies of selected populations and ecosystems. Mr. Cody

126. Behavioral Ecology (4 or 8 units). Prerequisites: courses 5, 6. *Offered either as a quarter-long course for four units or as an eight-unit course as part of the Field Biology Quarter.* The four-unit course has lecture, three hours; discussion, three hours. Animal communication behavior, island biogeography, and evolution of social behavior. The eight-unit course covers the same basic lecture material in five intensive weeks, followed by an extended field trip where students do individual projects in behavioral ecology. 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. A general treatment of soil development and morphology and the 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 the field trip to explain developmental phenomena. Mr. Lunt

128. Plant Physiological Ecology (4 or 8 units). Lecture, three hours; laboratory/field, three hours. A study of plant-environmental interactions under natural conditions. Emphasis on transpiration and photosynthesis, leaf temperatures, and water movement in the soil-plant-atmosphere continuum. Individual student projects. *When the course is given as part of the Field Biology Quarter, it is eight units, and the individual research project is correspondingly expanded.* Mr. Nobel

129. The Behavior of Animals. Lecture, three hours; discussion, three hours. Prerequisite: course 111 or consent of instructor. Ecological significance, underlying mechanisms, and evolution of behavior, with special reference to animal sociology under natural conditions.

130. Behavior Research Problems. Lecture, three hours; laboratory, two hours. Prerequisites: courses 5, 6, consent of instructor. Systems controls and nonobtrusive sensing procedures for behavior studies in the laboratory and field. Rationale, design, and limitations of laboratory studies of behavior. Mr. Kavanau

131. Insect Ecology (4 or 8 units). Lecture, two hours; laboratory or field trip, eight hours. Prerequisites: course 120 or 122, consent of instructor. *Offered either as a quarter-long course with weekend field trips or as part of the Field Biology Quarter (eight units; amount of fieldwork increased accordingly).* Analysis of the ecological roles of insects in terrestrial communities, with emphasis on interactions with both plants and vertebrates. Group and individual field projects. Mr. Greenfield, Mr. Hespenheide

132. Field Behavioral Ecology (8 units). Lecture, two hours; laboratory/field trip, 10 hours. Prerequisites: courses 5, 6. Recommended: course 129. *A five-week course offered only as part of the Field Biology Quarter.* Field research in behavioral ecology, emphasizing animal communication. The design and execution of individual and small group field projects during an extended field trip. Mr. Greenfield, Mr. Narins

C134. Physiological Ecology of Desert Animals (2 units). Prerequisites: courses 111, and 166 or 167. A consideration of ecologically relevant aspects of animal physiology, with emphasis on desert animals. Concurrently scheduled with course C214. Mr. Bartholomew, Mr. Nagy

135. Population Genetics. Lecture, three hours; discussion, one hour. Prerequisite: course 8. Highly recommended: Mathematics 31A, 31B. Basic principles of genetics of population, dealing with the genetic structure of natural populations and the mechanisms of evolution. Equilibrium conditions and the forces altering gene frequencies, polygenic inheritance, and the methods of quantitative genetics. Mr. Taylor

136A-136B-136C. Seminar in Genetics (2 units each). Prerequisites: course 8, consent of instructor. Undergraduate seminar in genetics; reading and group discussion of current research in genetics. Mr. Siegel (F,W,Sp)

138. Developmental Biology. Lecture, three hours; discussion, one hour. Prerequisite: completion of "Preparation for the Major" courses. Synopsis of fundamental concepts in embryology and a survey of current topics in developmental biology. Ms. Lengyel, Mr. O'Connor, Mr. Tobin

139. Introductory Laboratory in Developmental Biology. Lecture, two hours; laboratory, six hours. Prerequisites: course 138, consent of instructor. Introductory course in developmental biology, including cell and organ culture and biochemical analysis of developing systems.

141. Molecular Basis of Plant Differentiation and Development. Lecture, three hours; discussion, one hour. Prerequisites: courses 5, 7, 8. An in-depth study of the basic processes of development and the molecular aspects of the developmental process as it relates to the plant kingdom. Discussion of a variety of developing systems (protistons, fungi, lower and higher plants), with the goal of developing a unified concept of differentiation. Mr. Goldberg, Ms. Tobin (Sp)

142A-142B-142C. Seminar on Topics in Developmental Biology (2 units each). Prerequisites: course 138, consent of instructor. Undergraduate seminar on topics in developmental biology. Reading and group discussions of current research. Ms. Lengyel, Mr. O'Connor, Mr. Tobin (F,W,Sp)

143. Molecular Cell Biology. Lecture, three hours; discussion, one hour. Prerequisites: courses 5, 7, 8, chemistry courses through Chemistry 25. Molecular biology as applied to the study of eukaryotic cells. Molecular aspects of organelles such as the nucleus, mitochondrion, cytoskeleton, golgi apparatus, plasma membrane, and extracellular matrix. Other topics include molecular evolution, the cell cycle, and the cell biology of cancer. Ms. Bulinski, Mr. Simpson

144. Molecular Biology. Lecture, three hours; discussion, one hour. Prerequisites: courses 7, 8. Strongly recommended: Chemistry 25. A course in molecular biology emphasizing the synthesis, structure, function, and interactions of biological macromolecules.

145A-145B-145C. Molecular Biology Laboratory. Laboratory, 12 hours. Prerequisite: consent of instructor. Highly recommended: course 144. A course in experimental molecular biology in which students carry out original research under supervision. Space is limited, and arrangements must be made in advance with the instructor. Mr. Salser (F,W,Sp)

146. Physiochemical Biology. Lecture, three hours; discussion, one hour. Prerequisites: courses 5 and 7, or consent of instructor, and Physics 6C or equivalent. A physiochemical analysis of the 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. Prerequisite: completion of "Preparation for the Major" courses or consent of instructor. Lectures include physical, chemical, and biological factors affecting the composition and distribution of plankton. Natural history of major phytoplankton and zooplankton taxa; production in marine food chains; adaptation to pelagic habitats. Laboratory includes systematics, morphology of major plankton taxa; experimental studies of local marine plankton, with emphasis on measurement of feeding, primary and secondary productivity, and nutrient flux. Given at the *Catalina Marine Science Center.* Mr. Muscatine

148. Biology of Marine Plants. Five-week intensive course. Lecture, five hours; laboratory, 15 hours. Prerequisite: completion of "Preparation for the Major" courses or consent of instructor. An introduction to the general biology of marine algae, including basics of structure reproduction, life histories, systematics, and an introduction to the physiology and ecology of marine algae. Techniques in culture and laboratory investigation and utilization of algae. Given at the *Catalina Marine Science Center.* Mr. Chapman

149. Plant Biochemistry and Photosynthesis. Prerequisite: completion of "Preparation for the Major" courses. A survey course emphasizing plant-specific biochemistry, including photosynthesis; nitrogen fixation and metabolism; sulfur metabolism; respiration; plant pigments, lipids, proteins, and nucleic acids; the cell wall; terpenes; alkaloids and flavenoids. Mr. Thornber

152. Functional Plant Anatomy. Lecture, three hours; laboratory, six hours. Prerequisites: courses 5, 7, or equivalent, or consent of instructor. The structure and functional significance of the various cell and tissue types in higher plants, plus the patterns of growth and differentiation in roots, stems, leaves, flowers, and fruits.

153. Functional Histology. Lecture, three hours; laboratory, four hours. Prerequisite: completion of "Preparation for the Major" courses. Correspondence of function and structure in vertebrate organs and tissues at cellular and subcellular levels. Mr. Cascarano, Mr. James

154. Functional Ultrastructure of Cells and Tissues. Lecture, three hours; discussion, one hour. Prerequisites: course 5 or 7, Chemistry 21, 23, 25, or equivalent. Basic life processes at the supramolecular and molecular levels of cells. Functional significance of membrane structure, molecular basis of absorption, secretion, and muscle contraction. Conventional and advanced methods in ultrastructural analysis, electron microscopy. Interpretations of structural information. Mr. Sjostrand

155. Analytical Microscopy and Cytology. Lecture, three hours; laboratory, three hours. Prerequisites: Physics 3A, 3B, and 3C, or 6A, 6B, and 6C, or equivalent, or consent of instructor. Designed for students in the biological sciences to acquaint them with quantitative cytology, with emphasis on bright field, dark field, phase contrast, interference, polarization analysis, fluorescence microscopy, and epi-illumination. Mr. James

CM156. Human Genetics. (Same as Biomathematics CM156.) Lecture, three hours; discussion, one hour. Prerequisites: course 8, Chemistry 25. The 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 the methodologies appropriate to answer such questions. Concurrently scheduled with course CM256. Mr. Merriam, Ms. Spence (Sp)

157. Gene Manipulation: Genetic Engineering. Lecture, three hours; discussion, two hours. Prerequisite: course 138 or 144 or consent of instructor. A survey of the methods and applications of recombinant DNA research as applied to both basic scientific research and the biotechnology industry.
Mr. Salser

158. Cell Biology (6 units). Lecture, three hours; laboratory, six hours. Prerequisite: completion of "Preparation for the Major" courses. The cell biology of eukaryotic cells, with emphasis on the correlation of structure and function at the molecular, organellar, and cellular levels.
Mr. Cascarano, Mr. James, Mr. Simpson

162. Plant Physiology (6 units). Lecture, four hours; laboratory, four hours. Prerequisites: courses 5, 7, Chemistry 25. Hormonal control of growth and development. Photomorphogenesis. Photoperiodism, biorhythms, and flowering. Water movement within the plant body and between the plant and its environment. Salt uptake and transport. Photochemical and physiological aspects of photosynthesis. Aspects of plant cell metabolism. The nitrogen cycle.
Mr. Laties (F)

163. Plant Physiology Laboratory. Lecture, one hour; discussion, one hour; laboratory, eight hours. Prerequisite: course 162. Limited enrollment. Students are introduced to the instrumentation used in plant physiology research by performing experiments based on the lecture material in course 162. Subsequently, students working singly or in groups undertake a research project of their own design.

164. Field Biology of Marine Fishes. Five-week intensive course. Lecture, five hours; laboratory, 15 hours. Prerequisite: completion of "Preparation for the Major" courses or consent of instructor. Selected aspects of the natural history, ecology, and behavior of the diverse assemblage of local marine fishes. Fieldwork strongly emphasized. Given at the *Catalina Marine Science Center.* Mr. Buth

165. Ecological Physiology of Marine Vertebrates. Five-week intensive course. Lecture, five hours; laboratory, 15 hours. Prerequisite: completion of "Preparation for the Major" courses or consent of instructor. Introduction to the physiological adaptations of marine vertebrates to the major physicochemical variables in the oceans of the world and to the major marine habitats. Laboratory work emphasizes marine vertebrates of Southern California waters. Given at the *Catalina Marine Science Center.* Mr. Gordon

166. Animal Physiology (6 units). Lecture, three hours; laboratory, five hours. Prerequisite: completion of "Preparation for the Major" courses. Not open for credit to students with credit for course 167 or 170. An 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 5L, 6, 7. Not open for credit to students with credit for course 166 or 170. An 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 the physiology of insects, with emphasis on functional adaptations.
Mr. Engelmann

169. Comparative Physiology. Lecture, three hours; laboratory, four hours. Prerequisites: courses 158, 166. A detailed analysis of selected aspects of invertebrate and vertebrate physiology. Mr. Gordon

170. Animal Environmental Physiology (6 units). Lecture, three hours; laboratory, five hours. Prerequisite: completion of preparation for the major courses. Not open for credit to students with credit for course 166 or 167. Recommended for students concentrating in ecology, behavior, and evolution (EBE). An introduction to the physiology of organs, organ systems, and organisms, with emphasis on environmental interactions and adaptations.
Mr. Nagy, Mr. Narins

171. Principles of Neurobiology. Lecture, three hours; discussion, one hour. Prerequisite: course 166 or consent of instructor. An introduction to basic principles of neurobiology, including a description of the structure of neurons and nervous systems; the ionic mechanisms responsible for generating membrane potentials, action potentials, and synaptic potentials; the properties of synaptic transmission, the information transduction and coding in sensory pathways, and the neural control of movement; development of and trophic interactions between cells of the nervous system. Mr. Eckert, Mr. O'Lague

172A-172B. Introductory Laboratory in Neurophysiology. Laboratory, eight hours. Prerequisite: course 171 or consent of instructor. Limited enrollment. Courses must be taken concurrently. Laboratory investigation of the function of central and peripheral nervous systems in invertebrates and vertebrates. Emphasis on electrophysiological approaches to basic neurophysiological problems.
Mr. Eckert, Mr. O'Lague

173. Anatomy and Physiology of Sense Organs. Lecture, three hours; discussion, one hour. Prerequisite: course 171 or equivalent. The anatomy and physiology of the sense organs, with emphasis on comparative aspects. Mr. Narins

177. Introductory General Endocrinology. Lecture, three hours; discussion, one hour. Prerequisites: course 158 or 166 or equivalent, one course in biochemistry. Principles of chemical integration in biological systems.

179. Invertebrate Endocrinology. Lecture, three hours. Prerequisite: course 158 or 166 or 167 or consent of instructor. A comprehensive treatment of invertebrate endocrinology. Mr. Engelmann

180. Advanced Topics in General Endocrinology. Lecture, three hours; discussion, one hour. Prerequisite: course 177 or consent of instructor. Detailed consideration of selected mechanisms in endocrine control of growth and differentiation.

181. Parasitology and Symbiosis (6 units). Lecture, three hours; laboratory, six hours. Prerequisites: courses 5, 7. An introduction to the principles, biology, and evolution of infectiousness, symbiosis, and parasitism, emphasizing protozoan and helminth parasites, including those of man. Mr. MacInnis

182. Experimental Parasitology. Laboratory, eight hours. Prerequisite: consent of instructor. Introduction to the use of parasites in experiments concerning basic biological problems and to problems concerning parasitism. Mr. MacInnis

M185. Immunology. (Same as Microbiology M185 and Microbiology and Immunology M185.) Lecture, three hours; discussion, one hour. Prerequisites: course 8, Chemistry 23, 25. Recommended corequisite: Chemistry 152 or 156. Introduction to experimental immunobiology and immunochemistry; cellular and molecular aspects of humoral and cell immune reactions. Mr. Clark, Mr. Sercarz (F)

M186. Experimental Design in Immunology. (Same as Microbiology M186 and Microbiology and Immunology M186.) Laboratory, 12 hours. Prerequisites: course M185, consent of instructor. Corequisite: course M187. Emphasis on a limited number of situations designed to train the student in organizing and evaluating immunological laboratory experiments. Mr. Clark, Mr. Sercarz (W)

M187. Immunology Seminar (2 units). (Same as Microbiology M187 and Microbiology and Immunology M187.) Prerequisites: course M185, consent of instructor. Corequisite: course M186. Student presentation of selected papers from the immunology literature. Designed to serve as a forum for the critical analysis of research papers.
Mr. Clark, Mr. Sercarz (W)

188. Seminar on 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. Mr. Gordon, Ms. Tobin

190A-190D. Honors Research in Biology (2 to 4 units each). Prerequisites: senior standing, consent of undergraduate adviser. Individual research designed to broaden and deepen the student's knowledge of some phase of biology. Must be taken for at least two quarters 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 the undergraduate adviser each quarter a 190 course is taken. A maximum of eight units may be applied toward the biology major. (F,W,Sp)

199. Special Studies (2 to 16 units). Prerequisite: consent of instructor and undergraduate adviser, based on a written proposal outlining the study or research to be undertaken. The proposal should be worked out in consultation with the instructor and submitted for approval to the undergraduate adviser before the day instruction begins in that quarter. At the end of the quarter a report describing the progress of the study or research and signed by the student and the instructor must be presented to the undergraduate adviser. Students who wish to take more than eight units of course 199 in any one quarter must obtain authorization from the department chair and the appropriate dean. Only one 199 course may be applied toward the biology major. (F,W,Sp)

Graduate Courses

Consent of instructor is required for admission to all graduate courses. Additional prerequisites are stated in the course descriptions.

201. Topics in Organismal Plant Biology. Lecture, three hours; laboratory, three hours. Topics in organismic plant biology, including plant cell and tissue characteristics, plant growth and development, transport of solutes, gas exchange, environmental physiology, and the biology of phytohormones.
Mr. Phinney

202. Principles of Systematics and Taxonomy. Lecture, three hours; discussion, two hours. Prerequisite: course 120. The concepts, principles, and methods involved in the inference of evolutionary relationships and the application of biological nomenclature. Mr. Buth

203. Marine Botany and Physiology (8 units). Lecture/laboratory. Structure, reproduction, life histories, systematics, and biology of marine algae; techniques in culture and cytological investigation of algal material. Given at the *Catalina Marine Science Center.*

204A. Advanced Algae. A consideration of current research in experimental phycology. Topics include a discussion of the appropriate aspects of chemical and physical oceanography and limnology; algal physiology; experimental ecology of benthic and planktonic algae. Mr. Chapman

204B. Advanced Algae. Lecture, three hours; laboratory, six hours. Designed to introduce students to current concepts in algal systematics. Laboratory section is designed to teach students, by practical application to unknowns, how to identify algae by appropriate application of keys. Mr. Chapman

205. Marine Invertebrate Biology (8 units). 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 at the *Catalina 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

207. Molecular and Cellular Biophysics. Lecture, three hours. Prerequisites: Chemistry 25, 110A, Mathematics 32A or equivalent, and Physics 6C, or consent of instructor. Strongly recommended: Chemistry 110B or 156. Development of areas of physics, including thermodynamics, diffusion, statistical mechanics, and molecular forces. Application to areas of molecular and cellular biology, including macromolecule characterization, enzyme catalysis, assembly of biological structures, membrane properties, active transport, electrophysiology, and energy transduction. Biological applications of probability, statistics, and fluctuations. Mr. Jackson

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 the vertebrate locomotor, feeding, and circulatory systems. Laboratory includes comparative and experimental analyses of morphological adaptation. Independent project required. May be repeated once for credit.

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 the behavior of terrestrial arthropods, including communication, feeding, reproductive, and social behavior. Emphasis on both mechanistic and adaptive approaches toward understanding behavior. Independent project required.
Mr. Greenfield

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 avian biology, including systematics, distribution, behavior, and ecology. Students carry out individual study projects in laboratory, museum, or field. Mr. Howell

211. Animal Sociology. Lecture, two hours; discussion, two hours. Prerequisite: course 129 or equivalent. The description, analysis, physiology, ecology, and evolution of different social systems in animals.

C212. Experimental Invertebrate Zoology (6 units). Lecture, two hours; laboratory, 12 hours. Prerequisites: courses 105, 129, and 166 or 167 (either may be taken concurrently). Advanced treatment of physiology, behavior, and ecology of invertebrates, with emphasis on independent laboratory and field investigations. Concurrently scheduled with course C104. Mr. Morin

213. Community Ecology (2 units). Lecture, three hours. Prerequisites: course 122 or equivalent, one year of calculus. Investigation of the structure and function of animal communities, in theory and in practice (includes the concepts of coexistence, competition, niche, and diversity). Mr. Cody

C214. Ecological Physiology (2 units). (Formerly numbered 214.) A consideration of ecologically relevant aspects of animal physiology. Concurrently scheduled with course C134.
Mr. Bartholomew, Mr. Nagy

215. Theoretical Population Biology. Lecture, three hours. Prerequisites: courses 6, 8, and Mathematics 3C or 32A, or consent of instructor. Not open to students with credit for course 119. The use of mathematical models in studying ecological and evolutionary systems. Relevant mathematical techniques discussed include basic calculus, differential equations, linear algebra, and probability.
Mr. Taylor, Mr. Vance

217. Marine Ecology (8 units). Structure, diversity, and energetics of marine communities; behavior, population dynamics, and biogeography of component species; associated oceanography and geology. Given at the *Catalina Marine Science Center.*
Mr. Vance

218. Oceanology (8 units). Ecology and dynamics of pelagic and benthic associations; physiochemical properties of seawater and marine substrates and their biological significance; qualitative and quantitative methods of oceanology. Given at the *Catalina Marine Science Center.*

219. Animal Behavior in Laboratory and Field. Discussion, two hours; laboratory, six to eight hours. Prerequisites: course 129, consent of instructor. Limited enrollment. Laboratory and field studies of selected problems in animal behavior.

221. Genetic Analysis. Lecture/discussion, three hours. Prerequisite: course 8 or equivalent. Examples of genetic analysis in eukaryotic organisms by means of mutation and chromosome changes. Readings in the literature are provided. Topics include *Drosophila* chromosome behavior, techniques of gene localization, the one gene-one chromomere hypothesis, meiotic mutants, mosaic animals and cell lineage, behavior, and X chromosome inactivation.
Mr. Merriam

222A-222F. Topics in Genetics. Prerequisite: course 8. Intensive study of selected topics.

223A-223B. Advanced Genetics Laboratories. Laboratory, nine hours. Prerequisites: course 8 or equivalent, consent of instructor. Original research with supervision in eukaryotic genetics. Topics include transmission, developmental and behavioral genetics. May not be repeated for credit.
Mr. Merriam, Mr. Siegel

224. Developmental Biology of Marine Organisms (8 units). Descriptive and experimental studies of developmental stages of marine plants and animals; patterns of reproductive biology; larval biology; metamorphosis. Given at the *Catalina Marine Science Center.*

225. Special Topics in Development. Lecture, three hours. Variable topics emphasizing the control of eukaryotic gene expression and morphogenesis. Special attention to the role of hormones in the modulation of gene expression during development.
Mr. O'Connor

227. Chromosome Structure and Replication. Lecture, three hours. Prerequisite: course 8, Chemistry 157A, 157B, or consent of instructor. A survey of biochemical and biophysical investigations of the structure and replication of chromosomal nucleic acids, with emphasis on bacterial and viral systems.
Mr. Ray

228. Prokaryotic and Eukaryotic Gene Systems (2 units). Presentations concerning current experimental approaches in the study of DNA replication, organization, transcription, and translation.
Mr. Grunstein, Mr. Ray

229. Structural Macromolecules. Lecture, three hours; discussion, one hour. The comprehensive molecular biology of selected structural proteins and polysaccharides, including cellular synthesis, structure and physical properties, and integrated biological functions. Mr. Fessler

M230A. Structural Molecular Biology (2 units). (Same as Chemistry M230A and Microbiology M230A.) Lecture, two hours; discussion, one hour. Prerequisite: consent of instructor based on a written research proposal. Fundamentals of electron microscopy of macromolecules and supramolecular structures, emphasizing quantitative microscopy, high resolution techniques, nucleic acid analysis, and studies on viruses and protein crystals.
Mr. Eiserling, Ms. Kasamatsu (F, alternate years)

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 the 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. Eiserling, Mr. Lake (W)

M230C. Structural Molecular Biology Laboratory. (Same as Chemistry M230C and Microbiology M230C.) Laboratory, 10 hours. Prerequisite: consent of instructor based on a written research proposal. Practical experience with electron microscopy of macromolecules and supramolecular structures, emphasizing quantitative microscopy, high resolution techniques, nucleic acid analysis, and studies on viruses and protein crystals.
Mr. Eiserling, Ms. Kasamatsu (F, alternate years)

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 (W)

M231A. Paradigms of Evolution. (Same as Anatomy M223.) Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. The range of conceptual foundations underlying evolutionary studies in various fields of biology, biochemistry, geology, and physics today. S/U or letter grading.
Mr. Brunk, Mr. Campbell

231B. Molecular Evolution. (Formerly numbered 231.) Lecture, three hours; discussion, one hour. Current topics in molecular evolution. Concepts and methodology in lectures, discussion, and student presentations. S/U or letter grading. Mr. Brunk

232. Experimental Molecular Developmental Biology (8 units). Lecture, one hour; discussion, two hours; laboratory, 12 hours. Prerequisites: courses 138, 144, and/or consent of instructor. A laboratory course in the biochemical expression and regulation of differentiation in eukaryotes.
Mr. Fessler, Ms. Lengyel, Mr. Tobin

233A-233B. Electron Microscopy of Cells (8 units each). Lecture, four hours; laboratory, 20 hours; demonstration, three hours. Electron microscopic techniques applied to structure of cells and to molecular structure of cellular components. Intensive training in electron microscopy techniques and in the use of the electron microscope for high resolution electron microscopy. Mr. Sjostrand

234A. Advanced Topics in Developmental Biology. (Formerly numbered 234.) Especially intended for first- and second-year graduate students as an overview of research questions on developmental biology available within the Biology Department and of the significant new advances in the discipline. Fundamental questions in developmental biology are approached with examples from current literature. Topics include differential gene activity, gene localization, maternal effect and homeotic mutations, the determined cell state, cell identification, hormone receptors and hormone-mediated responses, and developmental neurobiology and emphasize the analysis of genes implicated in development. Students are strongly encouraged to take both courses 234A and 234B, since these represent a survey of modern biology as appropriate preparation for graduate study. S/U or letter grading.

234B. Advanced Topics in Cell Biology. Lecture, two hours; discussion, two hours. Especially intended for first- and second-year graduate students as an overview of research questions on cell biology available within the Biology Department and of the significant new advances within the discipline. Fundamental questions in cell biology are approached with examples from current literature.

235. Current Topics in *Escherichia coli* Genetics (2 units). (Formerly numbered 246.) 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.
Mr. Miller (F)

236. Experimental Cell Biology. Lecture, two hours; discussion, one hour; laboratory, four hours. Prerequisites: course 158, consent of instructor. Theoretical and experimental analysis of systems utilized in the study of cellular metabolism and physiology; cell organelles, cell populations, and organized tissues.
Mr. Cascarano, Mr. James

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 an example of a highly organized subcellular organelle in the eukaryotic cell. Mr. Simpson

M239. Techniques in Nucleic Acid Research (2 units). (Same as Microbiology M239.) Highly recommended corequisite: course M239L. Advanced methods in characterization of genes, including sequence determination. Isolation of nucleic acids by centrifugation, chromatography, and electrophoresis, and characterization by restriction mapping and blot hybridization. Cloning in bacterial and plasmid vectors, sequence determination by the dideoxy technique, computer analysis of sequences.
Mr. Nierlich, Mr. Simpson (Sp, alternate years)

M239L. Laboratory in Nucleic Acid Research (6 units). (Formerly numbered M239.) (Same as Microbiology M239L.) Laboratory, 12 hours. Corequisite: course M239. Laboratory in advanced methods in characterization of genes, including sequence determination. Isolation of nucleic acids by centrifugation, chromatography, and electrophoresis, and characterization by restriction mapping and blot hybridization. Cloning in bacterial and plasmid vectors, sequence determination by the dideoxy technique, computer analysis of sequences.
Mr. Nierlich, Mr. Simpson (Sp, alternate years)

240. Physiology of Marine Animals (8 units). Lecture and laboratory studies on cellular, tissue, organ, and animal physiology; regulatory biology; metabolic characteristics of cells, energy transformations. Given at the *Catalina Marine Science Center.*

241. Laboratory in Advanced Electrophysiology (8 units). Laboratory, 12 hours. Prerequisites: courses 172A-172B or equivalent, consent of instructor. In-depth involvement in individual research projects under staff guidance. Approximately two projects each quarter. May be repeated twice for credit.
Mr. Eckert, Mr. O'Lague

242. Topics in Neurobiology. Lecture, three hours. Prerequisites: course 171 or equivalent, consent of instructor. Selected current problems in neurobiology discussed in depth, with emphasis on analysis of original papers. May be repeated for credit.
Mr. Eckert, Mr. O'Lague

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 the physiological mechanisms underlying their generation and reception. Lectures treat signal analysis, signal transmission, and receptor design in light of the 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. A 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 a seminar section on a current topic in cell biology and a discussion section on the seminar topic. Students prepare one such seminar each quarter, using the reading list provided as background, and select a topic with the aid of current literature and consent of instructor. May be repeated for credit. S/U grading.
Ms. Bulinski

M246. Computer Analysis of Genetic Organization. (Same as Microbiology M246.) Lecture, two hours; laboratory, six hours. Prerequisites: courses 8, and 144 or Microbiology 119 or equivalent. Lectures and laboratory instruction in contemporary procedures for the analysis of nucleic acid and protein sequence data with the computer. No prior computer experience is necessary; students gain both general and specialized facility with IBM PC and Digital VAX computers.
Mr. Nierlich, Mr. Simpson (Sp, alternate years)

247. Advanced Plant Biology. (Formerly numbered 247A-247F.) Lecture, three hours; discussion, two hours. Prerequisite: course 141 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.) Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Basic concepts in modern genetics, drawing examples from both eukaryotic and prokaryotic systems. Emphasis on the 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.
Ms. Calame, Mr. McEntee, Mr. Miller, Mr. Shapiro (Sp)

249. Biochemistry of Parasitism. Lecture, three hours. Biochemical and physiological aspects of parasite-host relationships. Mr. MacInnis

M250A. Molecular Genetics of the Immune System (2 units). (Same as Microbiology M258A and Microbiology and Immunology M258A.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or Microbiology and Immunology 202A or equivalent or consent of instructor. Reading and discussion of current research articles on immunoglobulin I and II, oncogenes of the immune system, T cell antigen receptor, and loci affecting differentiation. S/U or letter grading.
Mr. Wall and the Staff (W, five weeks)

M250B. T and B Cell Function (2 units). (Same as Microbiology M258B and Microbiology and Immunology M258B.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or Microbiology and Immunology 202A or equivalent or consent of instructor. Reading and discussion of current research articles on ontogeny, activation, and effector function of T and B cells. S/U or letter grading.
Mr. Bonavida and the Staff (W, five weeks)

M250C. Major Histocompatibility Complexes (2 units). (Same as Microbiology M258C and Microbiology and Immunology M258C.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or Microbiology and Immunology 202A or consent of instructor. Reading and discussion of current research articles on the structure of human and murine MHC chromosomal regions and genes, MHC polymorphism, MHC-like systems, MHC-linked genes, MHC and disease, and nonimmune function of MHC. S/U or letter grading.
Mr. Clark, Ms. Scofield (Sp, five weeks)

M250D. Immunopathology (2 units). (Same as Microbiology M258D and Microbiology and Immunology M258D.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 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. Fahey, Mr. Porter (Sp, five weeks)

M250E. Immunoregulation (2 units). (Same as Microbiology M258E and Microbiology and Immunology M258E.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 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)

M250F. Immunochemistry (2 units). (Same as Microbiology M258F and Microbiology and Immunology M258F.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or Microbiology and Immunology 202A or consent of instructor. Reading and discussion of current research articles on the immunochemistry of antibodies, antigens, and complement, antigenic recognition, antibody restriction. S/U or letter grading.
Mr. Schumaker, Ms. Wisnieski (F or Sp, five weeks)

251. Seminar in Systematics (2 units).
Mr. Buth, Mr. A. Gibson

M252A-M252B. Seminar in Behavioral Biology. (Same as Anthropology M228A-M228B, Education M229A-M229B, Physiology M252A-M252B, Psychiatry M291A-M291B, and Psychology M230A-M230B.) Discussion, six hours. Prerequisite: consent of instructor. Basic seminar for graduates interested in behavioral biology. An interdisciplinary course dealing with behavioral research in anthropology, biology, psychology, and the medical sciences. Proximate causation, development, and evolution in animal behavior. Physiology and the organization of behavior. Vertebrate social organization. Animal communication. The application of natural selection theory to human social behavior. In Progress grading.

253. Seminar in Plant Structure (2 units).
Mr. Phinney

254. Seminar in Plant Morphogenesis (2 units).
Mr. Phinney

255. Seminar in Invertebrate Zoology (2 units).
Mr. Morin, Mr. Muscatine

CM256. Human Genetics. (Same as Biomathematics CM256.) Lecture, three hours; discussion, one hour. Prerequisites: course 8, Chemistry 25. The 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 the methodologies appropriate to answer such questions. Concurrently scheduled with course CM156. Independent research project required of graduate students.
Mr. Merriam, Ms. Spence (Sp)

257. Gene Manipulation: Genetic Engineering. Lecture, three hours; discussion, two hours. Prerequisite: course 138 or 144 or consent of instructor. A survey of the methods and applications of recombinant DNA research as applied to both basic scientific research and the biotechnology industry.
Mr. Salser

257B. Gene Manipulation: Advanced Course (2 units). Lecture, 90 minutes; discussion, one hour. Prerequisite: course 157 or 257. Additional topics in the methods and applications of recombinant DNA research as applied to both basic scientific research and the biotechnology industry. S/U or letter grading.
Mr. Salser

258. Seminar in Ichthyology. Discussion, two hours. 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

259. Seminar in Herpetology (2 units). Discussion, three hours. Prerequisite: course 113 or consent of instructor. Seminar in current approaches to herpetology. Main theme varies from year to year in areas such as biogeography, ecology, behavior, environmental physiology. Mr. Vitt

260. Seminar in Biology of Terrestrial Vertebrates (2 units). Mr. Bartholomew, Mr. Howell

262. Seminar in Vertebrate Paleontology (2 units). Mr. Vaughn

263. Seminar in Population Genetics. Discussion, three to six hours. Seminar on topics of current interest in population genetics, such as kin selection, sociobiology, cultural evolution, conservation genetics, etc. Mr. Taylor

264. Evolutionary Concepts (2 units). Lecture, three hours. Exploration in depth of evolutionary concepts, their diversity, biological interpretations, and impact on social and humanistic patterns of today and the past.

265. Seminar in Biophysical Plant Ecology (2 units). Mr. Nobel

266. Seminar in Plant Ecology (2 units). Mr. Cody, Mr. Thompson

267. Seminar on Current Topics in Evolutionary Ecology (2 units). Mr. Cody

268. Seminar in Population Biology (2 units). Mr. Cody

269. Seminar in Animal Ecology (2 units). Discussion, three hours. Advanced study of specific topics in animal ecology and related fields.

270. Seminar in Environmental Physiology (2 units). S/U grading. Mr. Bartholomew, Mr. Nagy

271. Seminar in Phycology and Mycology (2 units). Prerequisites: course 100 or equivalent, 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 in Marine Biology (2 units). Mr. Gordon, Mr. Morin, Mr. Muscatine

273. Seminar in Entomology (2 units). Discussion of specific topics in entomology and related fields. The main theme varies from year to year, but usually emphasizes areas such as behavior, ecology, and evolution. S/U grading. Mr. Greenfield

274. Seminar in Behavioral Ecology (2 units). Discussion of theoretical and empirical aspects of topics in behavioral ecology. Mr. R. Gibson (W)

275. Seminar in Behavior Research Problems. Lecture, three hours; laboratory, two hours. Prerequisite: course 130. Mr. Kavanau

276. Seminar in Molecular Genetics (2 units). Topics vary each quarter. Mr. Salser

277. Seminar in Genetics (2 units). Mr. Ebersold, Mr. Merriam, Mr. Siegel

278. Seminar in Information Processing in Eukaryote Cells (2 units). Discussion, three hours. Prerequisites: course 8, Chemistry 157A, and 157B, or consent of instructor. Structure and organization of eukaryote DNA; nuclear RNA species; definition and properties of eukaryote mRNA; translation of mRNA; current related topics. Mr. Clark

279. Seminar in Developmental Biology (2 units). S/U grading. Mr. Tobin

280. Seminar in Chromosome Structure and Replication (2 units). Prerequisite: course 227. Current topics in the field of control and mechanism of DNA replication. Mr. Ray

281. Seminar in Molecular Biology (2 units). Mr. Brunk, Mr. Fessler, Mr. Ray

M282. Major Histocompatibility Complexes: Genetics, Biochemistry, and Biology (2 units). (Formerly numbered 282.) (Same as Microbiology and Immunology M282.) Lecture, one hour; discussion, one hour. Prerequisites: course M185 or equivalent, genetics, biochemistry. Lectures and discussion of key papers underlying the present concepts of MHC structure and function. Emphasis on the murine MHC (H-2), but where appropriate and illustrative, the human MHC discussed. Mr. Clark (W)

283. Seminar on Topics in Cell Biology (2 units). A discussion of various topics on the 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 in Structural Macromolecules (2 units). Lecture, one hour; discussion, three hours. Prerequisites: courses 138, 144, and/or consent of instructor. In-depth analysis of current problems in the biology, biochemistry, and molecular biology of structural macromolecules, involving critical evaluation of recent findings and publications on the biosynthesis, structure, and biodegradation of these molecules. Mr. Fessler

285. Seminar in Protein Synthesis (2 units). Discussion, three hours. Prerequisites: course 144 and/or consent of instructor. A detailed analysis of the current understanding of the structural and functional events occurring during protein synthesis. Mr. Lake

286. Seminar in Plant Development (2 units). Lecture, one hour; discussion, two hours. Prerequisites: a course in plant physiology, at least one advanced undergraduate or graduate course in plant development or biochemistry, and Chemistry 157A, 157B, or equivalent. Seminar on specific topics in plant development. Content varies each quarter. Mr. Phinney, Ms. Tobin

287. Seminar in Comparative Cell Physiology (2 units). Mr. Cascarano, Mr. James

288. Seminar in Plant Cell Biology (2 units). Recommended prerequisite: course 162. Ms. Gonzalez

289. Seminar in Plant Physiology (2 units). Mr. Laties

290. Seminar in Comparative Physiology (2 units). Mr. Gordon, Mr. Narins

291. Seminar in Physiology and Biochemistry of Arthropods (2 units). Mr. Engelmann

292. Seminar on Topics in Ultrastructure (2 units).

294. Seminar on Current Aspects of Photosynthesis (2 units). Mr. Thornber

295. Seminar in Neurophysiology (2 units). Mr. Eckert, Mr. O'Lague

296. Seminar in Biological Applications of Flow Cytometry (2 units). Lecture, two hours; demonstration, one hour. Prerequisite: graduate standing or consent of instructor. Initial lecture focuses on instrumentation design and operation. Subsequent lectures present specific biological paradigms whose unresolved questions can best be answered by means of fluorescent flow cytometry. The latter portion of the seminar is topical and varies from year to year. Mr. O'Connor

297. Seminar in Molecular Endocrinology (2 units).

M298. Seminar on 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. committee. Each student conducts or participates in discussions on assigned topics. May be repeated for credit. (F,W,Sp)

299. Seminar in Parasitology (2 units). Mr. MacInnis

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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 the Teaching of Biology in Higher Education (2 units). Prerequisites: graduate standing, consent of instructor. Study of problems and methodologies in teaching biology, which includes workshops, seminars, apprentice teaching, and peer observation. 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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. S/U grading.

596. Directed Individual (or Tutorial) Studies (2 to 12 units).

596F. Directed Individual (or Tutorial) Studies (2 to 8 units). Directed individual (or tutorial) studies at the Catalina Marine Science Center.

597. Preparation for M.A. Comprehensive Examination or Ph.D. Qualifying Examination (2 to 12 units). May not be applied toward the 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, (213) 825-1965

Additional Coursework for Students Interested in Business and Administration

The Program 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 wish to major in a foreign language to become familiar with the literature and culture of other countries, and then add this program to gain a basic understanding of economics, accounting, and statistics. Other students interested in working for a governmental agency or nonprofit corporation might wish to add this program to a social science major. Students with an interest in a liberal arts area, who are not planning to go to graduate school, may wish 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. Students with a particular interest in accounting, banking, and finance are directed to the economics/business 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 program. You may satisfy one of the field studies course requirements by completing an independent study 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 program, you must file a petition with the College Counseling Service in the College of Letters and Science *by the time you have completed 120 units.* If you do not complete the program prior to graduation, you must petition out of the program to be eligible to graduate. *All degree requirements, including the specific requirements for this program, must be fulfilled within 228 units.* When you have successfully completed all program requirements, you receive a certificate of completion. A statement of completion is also noted on your transcript.

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.

The following requirements are in effect for students entering UCLA in Fall Quarter 1986 (check with the College Counseling Service regarding requirement changes).

Core Courses

Required: Economics 1 and 2, or 100; Management 1A, 1B; one course in statistics; one course in mathematics (except Mathematics A, 1, 38A, 38B, 50, 104); two courses from English 4, 30, 100W, 131A through 131H, 136A, 136B, Speech 1 (English 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:* Program in Computing 10A, 10B, 10C, 30, Computer Science 141, Anthropology 186A, 186B, Economics 141, 147A, 147B, Geography 171, Political Science 6, 102, Psychology M142, 144, 150, 151, Sociology 109, 116, 118; (2) *critical reasoning:* Engineering 11, 12, Philosophy 9, 31, 32, Psychology 112C.

Field Studies

Required: Any three courses from the following list:

Business and Administration Communications and Interactions: Communication Studies 100, 101, Geography 146, Psychology 136A, 137A, 174, Sociology 152.

Business Logistics: Geography 145, 148, 149, Sociology 141.

Cognitive Science: Linguistics 1 or 100, 10, Materials Science and Engineering M107A or Psychology M153, Psychology 110, 112A, 112B, 112C, 112E.

Contemporary Administration: Anthropology 150, Geography 148, Political Science 173, 190, Psychology 148, Sociology 141.

Contexts: Honors Collegium 57, 60, 61.

Government and Business: History 155A, 155B, Political Science 142, 173, 174.

History of American Business: History 148A, 148B, 149A, 149B, Political Science 173, 174.

Labor Studies: History 155A, 155B, Political Science 174, 185, Psychology M137E, 148, Sociology 128.

National and International Business and Administration: History 125E, 148C, 149B, Political Science 124, 129, 130, 186.

Urban and Metropolitan Administration: Anthropology 160, 160P, 167, Geography 145, 150, Political Science 180, 182A, 182B, Psychology 175, Sociology 125.

United States Business Institutions: History 149A, Political Science 173, Sociology 121, 141.

Chemistry and Biochemistry

3010 Young Hall, (213) 825-4219

Professors

Frank A. L. Anet, Ph.D. *(Organic Chemistry)*
Daniel E. Atkinson, Ph.D. *(Biochemistry)*
Mario E. Baur, Ph.D. *(Physical Chemistry)*
Kyle D. Bayes, Ph.D. *(Physical Chemistry)*
Richard B. Bernstein, Ph.D. *(Physical Chemistry)*
Paul D. Boyer, Ph.D. *(Biochemistry)*
Orville L. Chapman, Ph.D. *(Organic Chemistry)*
Donald J. Cram, Ph.D. *(Saul Winstein Professor of Organic Chemistry)*
Richard E. Dickerson, Ph.D. *(Biochemistry and Molecular Biology)*
David S. Eisenberg, Ph.D. *(Physical Chemistry and Molecular Biology)*
Mostafa A. El-Sayed, Ph.D. *(Physical Chemistry)*
Paul S. Farrington, Ph.D. *(Chemistry)*
Christopher S. Foote, Ph.D. *(Organic Chemistry and Biochemistry)*
William M. Gelbart, Ph.D. *(Physical Chemistry)*
M. Frederick Hawthorne, Ph.D. *(Inorganic and Organometallic Chemistry)*
Kendall N. Houk, Ph.D. *(Organic and Theoretical Chemistry)*
Wayne L. Hubbell, Ph.D. *(Biochemistry and Jules Stein Professor of Ophthalmology)*
Michael E. Jung, Ph.D. *(Organic Chemistry and Biochemistry)*
Herbert D. Kaesz, Ph.D. *(Inorganic and Organometallic Chemistry)*
Daniel Kivelson, Ph.D. *(Physical Chemistry)*
Charles M. Knobler, Ph.D. *(Physical Chemistry), Chair*
William G. McMillan, Jr., Ph.D. *(Chemical Physics)*
Malcolm F. Nicol, Ph.D. *(Physical Chemistry)*
Emil Reisler, Ph.D. *(Biochemistry and Molecular Biology)*
Howard Reiss, Ph.D. *(Physical Chemistry)*
Verne N. Schumaker, Ph.D. *(Biochemistry and Molecular Biology)*
Robert L. Scott, Ph.D. *(Physical Chemistry)*
Roberts A. Smith, Ph.D. *(Biochemistry)*
Charles E. Strouse, Ph.D. *(Inorganic Chemistry)*
Kenneth N. Trueblood, Ph.D. *(Physical Chemistry)*
Joan S. Valentine, Ph.D. *(Inorganic Chemistry and Biochemistry)*
John T. Wasson, Ph.D. *(Geochemistry and Chemistry)*
Richard L. Weiss, Ph.D. *(Biochemistry), Vice Chair*
Charles A. West, Ph.D. *(Biochemistry)*
Jeffrey I. Zink, Ph.D. *(Inorganic Chemistry)*
Francis E. Blacet, Ph.D., D.Sc., *Emeritus*
Clifford S. Garner, Ph.D., D.Sc., *Emeritus*
E. Russell Hardwick, Ph.D., *Emeritus*
Thomas L. Jacobs, Ph.D., *Emeritus*

Associate Professors

Steven G. Clarke, Ph.D. *(Biochemistry)*
François N. Diederich, Dr.rer.nat. *(Organic and Bioorganic Chemistry)*
Jay D. Gralla, Ph.D. *(Biochemistry)*
John M. Jordan, Ph.D. *(Biochemistry)*
Harold G. Martinson, Ph.D. *(Biochemistry and Molecular Biology)*
R. Stanley Williams, Ph.D. *(Physical Chemistry)*

Assistant Professors

Robert E. Cohen, Ph.D. *(Biochemistry)*
David Farrelly, Ph.D. *(Theoretical Chemistry)*
Juli F. Feigon, Ph.D. *(Biochemistry)*
Peter M. Felker, Ph.D. *(Chemical Physics)*
William H. Hersh, Ph.D. *(Organic and Organometallic Chemistry)*
Douglas C. Rees, Ph.D. *(Biochemistry)*
Robert L. Whetten, Ph.D. *(Physical Chemistry)*

Lecturers

Sandra I. Lamb, Ph.D. *(Chemistry)*
Lawrence H. Levine, Ph.D. *(Chemistry)*
Arlene A. Russell, Ph.D. *(Chemistry)*

Adjunct Professor

Seymour Siegel, Ph.D. *(Physical 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 an 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 C – 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 will be accepted into the departmental majors only if they have completed the following courses or their equivalents: the entire Chemistry 11 series, Mathematics 31A, 31B, 32A, Physics 8A, 8B/8BL, 8C/8CL (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 will be accepted into the departmental majors only if they have completed the following courses or their equivalents: the entire Chemistry 11 series and 21, Mathematics 31A, 31B, 32A, Physics 8A, 8B/8BL, 8C/8CL (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 21. Transfer students should consult the department's Undergraduate Office for assistance in planning their programs.

You may not take or repeat a chemistry or biochemistry course for credit if you have credit for a more advanced course which has the first course as a prerequisite.

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.

Each of the major programs is outlined below. Students may contact Dorothy Seymour, Undergraduate Counselor, for help and advice (4016 Young Hall).

Preliminary Examination for Chemistry 11A

If you wish to enroll in Chemistry 11A or 11AH, you must take the Chemistry/Mathematics Preliminary Examination in Chemistry during the enrollment period for the quarter in which you intend to take these courses. Enrollment usually is limited to students who have passed the examination. It will be given in 2250 Young Hall on Tuesday, September 23, 1986; Wednesday, October 29, 1986; Wednesday, February 4, 1987; and Saturday, May 30, 1987.

If your performance on the examination does not qualify you for immediate admission to Chemistry 11A, but you wish to enroll in a subsequent quarter, you may be eligible for enrollment in Los Angeles City College (LACC) Chemistry 17. This course is given at UCLA during the Fall Quarter (and occasionally other quarters) expressly for UCLA students preparing for Chemistry 11A. If you successfully complete LACC course 17, you are entitled to admission to course 11A for the next three quarters. Offered on a Passed/Not Passed basis, LACC 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

For students who intend to pursue a career in chemistry.

Preparation for the Major

Required: Chemistry 11A, 11B/11BL, 11C/11CL, 21, 23; Biochemistry 25; Physics 8A, 8B/8BL, 8C/8CL (8D/8DL strongly recommended); Mathematics 31A, 31B, 32A, 32B, 33A. 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 110A, 110B, 113A, 114 (or 114H), 133A, 133B, 133C, 173, and two other upper division or graduate courses in the department, including at least one laboratory course from 136, 144, 154, 174, 184.

Bachelor of Science in Biochemistry

For students preparing for careers in biochemistry or other fields requiring extensive preparation in both chemistry and biology.

Preparation for the Major

Required: Chemistry 11A, 11B/11BL, 11C/11CL, 21, 23; Biochemistry 25; Mathematics 31A, 31B, 32A, 33A; three courses (including laboratory) from Physics 6A*, 6B, 6C, 8A, 8B/8BL, 8C/8CL, 8D/8DL; Biology 5, 8, 8L.

*If physics courses from both the 6 and 8 series are taken, undue duplication must be avoided.

The Major

Required: Chemistry 110A, 133A, 133B, 133C; Biochemistry 154, 156, 157A, 157B; one course from each of the following five categories: (1) Microbiology 101; (2) Biology 138, 141, 153, 154, CM156, or Microbiology C111; (3) Biology 158, 162, 166, 167, or Microbiology 113; (4) one upper division or graduate-level course in biology, chemistry and biochemistry, or microbiology; (5) one upper division or graduate-level course in biology, biological chemistry, chemistry and biochemistry, mathematics, microbiology, or physics. Courses selected to satisfy categories 4 and 5 must be approved by the undergraduate adviser (Biochemistry).

Bachelor of Science in *General Chemistry*

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 11A, 11B/11BL, 11C/11CL, 21, 23; Biochemistry 25; Mathematics 31A, 31B, 32A, 33A; three courses (including laboratory) from Physics 6A*, 6B, 6C, 8A, 8B/8BL, 8C/8CL, 8D/8DL.

*If physics courses from both the 6 and 8 series are taken, undue duplication must be avoided.

To enter the major, you must complete the preparation courses with at least a 2.0 average.

The Major

Required: Six upper division courses in the department, including at least one in physical chemistry and at least two with laboratory work; 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 (Chemistry).

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, Graduate Office, Department of Chemistry and Biochemistry, 4006 Young Hall, UCLA, Los Angeles, CA 90024.

Admission

An excellent undergraduate record is required in addition to the University minimum requirements. Graduate Record Examination (GRE) Aptitude and Advanced Tests are recommended.

Each student admitted to graduate standing is given orientation examinations at the beginning of the first quarter in physical, organic, analytical, and inorganic chemistry or biochemistry. The main purpose of the orientation requirement is to help you and your adviser plan a suitable course program. The examinations include material covered in upper division courses in biochemistry, 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.

You are encouraged to become familiar with research activities of all faculty in your area of interest and to join a research group as soon as possible. Biochemistry students rotate through at least two research groups during the Fall and Winter Quarters, with a final selection made during the Spring Quarter.

Foreign Language Requirement

Language requirements for the different areas of specialization are as follows: *biochemistry* — none; *inorganic* — German or a coordinated course in computer programming; *organic* — German; *physical* — German or French or, with consent of the research director, a substitute course program or a coordinated course in computer programming. Either the Educational Testing Service (ETS) examination (with a score of 500) or the departmental examination is acceptable. The substitute course program should consist of 10 units of coordinated upper division or graduate courses forming a minor field of concentration. These courses may be taken on an S/U grading basis but may not be applied toward the departmental course requirements. There is no language requirement for the M.S. degrees.

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 174, 207, C275, C276A, 276B, 277, 279

Organic — Chemistry 207, 232, 236, 241A through 241Z, 242, C243A, C243B, 244, 245, 246

Physical — Chemistry C215A, C215B, 215C, 215D, C223A, C223B, 223C, 225

Substitutions may be made with consent of the area adviser. With consent of the graduate adviser, courses of directed individual study, but not research courses, may replace any of the courses listed above.

Up to 24 units of course 596 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. However, in exceptional cases where Plan II (comprehensive examination plan) 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 a minimum of 12 units from Chemistry M253, M255, M263, M267. Registration in course 268 is required for three quarters but is not applicable to the 36-unit requirement.

Up to 22 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.

After completion of course requirements, you should consult your research adviser to form a thesis committee.

Plan II (Comprehensive Examination Plan): A total of 36 units is required. Of these, 20 must be at the graduate level and include a minimum of 12 units from Chemistry M253, M255, M263, M267. You may apply six units of course 268 and six units of course 597 to the graduate course requirement and the total course requirement. With the exception of Chemistry 268 and 597, all courses must be taken for a letter grade.

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 173; (2) two courses from C276A, 276B, 277; (3) two courses from 174, 207, 271A through 271Z, C275, 279; (4) two courses from physical chemistry (C213B, C215A, C215B, 215D, C223A) or organic chemistry (232, 236, 241A through 241Z, 242, C243A, C243B, 244, 245, 246) or biochemistry (157A); (5) Chemistry 278.

Organic Chemistry

(1) Required background material: Chemistry 133A, 133B, 133C, 136, 144; (2) courses C243A, C243B; (3) one course from C213B, 245, C276A; (4) one additional course from physical chemistry (C215A, 221A through 221Z, C223A) or inorganic chemistry (173, 174, C275, C276A) or biochemistry (157A, 157B); (5) two courses from 207, 232, 236, 241A through 241Z, 242, 244, 245, 246; (6) Chemistry 248.

Physical Chemistry

(1) Required background material: Chemistry 110A, 110B, 113A; (2) courses C215A, C215B, C223A, C223B, or equivalent; (3) course 228 each quarter; (4) one quarter of course 218 (for presentation of research); (5) two courses (for letter grade credit) from C210C, 215C, 215D, 223C, 225; (6) two courses (with S/U grading option) from C210C, 215C, 215D, 221A through 221F, 223C, 225, C243A, C276A, 277, Mathematics 146, Physics 213A, 105A, 110A, 110B, 131, 132, 140. Substitutions may be made with consent of the graduate adviser (physical chemistry).

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 orientation examinations and courses taken prior to entry into the graduate program. Required coursework must be completed before advancement to candidacy.

(1) Required background material: Chemistry 110A, 133A, 133B, 133C, 156, 157A, 157B, some coursework in the life sciences, and some biochemistry laboratory experience. Deficiencies in background may be made up after admission.

(2) Core courses M253, M255, M263, M267 (18 units).

(3) An additional 12 units of upper division or graduate courses subject to the consent of the graduate adviser. It is recommended that eight of these units be from other than biochemistry offerings. Advanced courses taken elsewhere or as an undergraduate may be substituted for some of these units in appropriate cases. Seminar courses are normally not applicable.

(4) Chemistry 258 for three quarters.

Teaching Experience

One year of teaching experience is required.

Qualifying Examinations

Rather than a single comprehensive examination, the department gives all 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 quarter 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 quarter 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 and three out of nine. Fifteen attempts will normally be the maximum.

At the end of the first and second year, your overall progress is evaluated by the graduate study committee, taking into account performance in courses, cumulative 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.

The University Oral Qualifying Examination is based on your research proposal which 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 by the end of the seventh quarter (sixth quarter for biochemistry). 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.

When a satisfactory report on the completion of the written and oral qualifying examinations, course requirements, and the departmental language requirement has been 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.

Final Oral Examination

The final oral examination is optional with the doctoral committee.

Lower Division Courses

2. Introductory Chemistry. Lecture, two hours; discussion, two hours. Not open to students with credit for course 11A. Designed to meet part of the Letters and Science requirements for nonscience majors and similar requirements in other colleges. The concept of the submicroscopic world of chemistry, ranging from protons to proteins in subject matter. Refer to "Requirements for the Bachelor's Degrees" in the College of Letters and Science section of this catalog for other credit limitations on this course.
Mr. Farrington, Mr. Hardwick (F,W,Sp)

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. Recommended: high school physics. Required of all majors in chemistry and biochemistry. (Students lacking the prerequisites may qualify for admission by exceptional performance on the Chemistry/Mathematics Preliminary Examination.) All students who intend to take this course must take the Chemistry/Mathematics Preliminary Examination (enrollment is usually limited to students who have passed the examination). Atomic theory and stoichiometry; states of matter and phase equilibrium; gases; liquids and solutions; acids, bases, and salts; equilibria in gases and solutions; solubility and solubility equilibria; oxidation and reduction.
Mr. Baur, Mr. Farrington, Mr. Trueblood (F,W,Sp)

11AH. General Chemistry (Honors). Lecture, four hours; discussion, one hour. Prerequisites: high school chemistry or equivalent background and three and one-half years of high school mathematics. Recommended: high school physics. (Students lacking the prerequisites may qualify for admission by exceptional performance on the Chemistry/Mathematics Preliminary Examination.) All students who intend to take this course must take the Chemistry/Mathematics Preliminary Examination (enrollment is usually limited to students who have passed the examination). An honors course parallel to course 11A.
Mr. El-Sayed, Mr. Gelbart (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. Thermochemistry and thermodynamics; electrochemistry; chemical kinetics; quantum theory and electronic structure of atoms; periodicity of chemical properties.
Mr. Kaesz, Mr. Kivelson, Mr. Knobler (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. An honors course parallel to course 11B. Mr. Baur, Mr. Nicol (W)

11BL. General Chemistry Laboratory (1 unit). Laboratory, four hours. 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). Enrollment priority, if needed, given to those taking course 11B concurrently. Use of the balance; volumetric techniques; equilibria; thermochemistry; quantitative analysis using volumetric and potentiometric procedures; Beer's Law. (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. Bonding and molecular structure; descriptive inorganic chemistry presented in terms of the principles discussed in courses 11A and 11B.
Mr. Farrington, Mr. Hawthorne, Ms. Valentine (F,W,Sp)

11CH. General Chemistry (Honors) (3 units). Lecture, two hours. Prerequisites: course 11BL with a grade of B – or better or course 11B, and consent of instructor. An honors course parallel to course 11C.
Mr. El-Sayed, Mr. McMillan (Sp)

11CL. General Chemistry Laboratory (2 units). Laboratory, eight hours. 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). Enrollment priority, if needed, given to those taking course 11C concurrently. Rates of reactions; quantitative volumetric analysis; qualitative inorganic analysis; inorganic synthesis; column chromatography; colorimetric analysis. (F,W,Sp)

15. Organic Chemistry and Biochemistry for Prenursing and Kinesiology. Prerequisite: course 11A with a grade of C – or better. Not open to students with credit for course 21. Recommended for students in certain areas of kinesiology and in the prenursing, prephysical therapy, and predental hygiene curricula. Does not meet requirements for admission to medical and dental schools nor does it satisfy the requirements of any major in Letters and Science other than certain areas of kinesiology. An introduction to the structures and reactions of organic compounds, particularly with respect to their roles and their transformations in living systems. Ms. Lamb (F,W)

15L. Chemistry Laboratory for Prenursing and Kinesiology (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. An introduction to quantitative work with aqueous solutions and to the preparation, isolation, and characterization of organic compounds, particularly some of those important in living systems. Ms. Lamb (F)

21. Organic Structure and Reactions. Lecture/discussion. Prerequisites: courses 11C, 11CL (may be taken concurrently), with grades of C – or better, or consent of instructor. Structure, reactivity, and properties of organic compounds. The theory of functional groups, chemical bonds, molecular structure, and stereochemistry of organic compounds.
Mr. Cram, Mr. Hersh (F,W,Sp)

23. Bioorganic Structure and Reactions. Lecture, three hours; discussion, one hour; laboratory, four hours. Prerequisites: courses 11CL and 21 with grades of C – or better or consent of instructor. Organic structures and reactions of biochemical interest. The classes of compounds most important to biological functions: amino acids, carbohydrates, etc. Sulfur, phosphorous, and anhydride chemistry. Methods of separation, purification, and analysis of organic compounds: extraction, crystallization, distillation, and chromatography.
Mr. Clarke, Mr. Jordan, Ms. Lamb (F,W,Sp)

25. Elementary Biochemistry. Lecture, three hours; discussion, one hour; laboratory, four hours. Prerequisite: course 23 with a grade of C – or better or consent of instructor. Protein structure and function; enzyme catalysis; intermediary metabolism; cell constituents; properties and biosynthesis of nucleic acids and proteins. Purification and characterization of biological macromolecules; spectrophotometry; catalysis; enzyme kinetics; gel filtration and paper chromatography; viscosity; utilization of radioisotopes.
Mr. Reisler, Mr. Weiss, Mr. West (F,W,Sp)

96. Special Courses in Chemistry (1 to 4 units). To be arranged. Prerequisite: consent of undergraduate adviser (Chemistry). (F,W,Sp)

Upper Division Courses

103. Environmental Chemistry. Prerequisites: courses 21, 23, and 25, 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 the effect of chemical processes on the environment.
Mr. Baur, Ms. Lamb (Sp)

110A. Physical Chemistry: Chemical Thermodynamics. Lecture, four hours; discussion, one hour. Prerequisites: course 11C, Physics 8B or 6C (may be taken concurrently), Mathematics 31A, 31B, 32A or, for life science majors, Mathematics 3C. An understanding of partial differentiation such as that obtained in Mathematics 3C or 32A is very desirable. Properties of gases; laws of thermodynamics; free energy; entropy; chemical potential and chemical equilibrium; thermodynamics of solutions.
Mr. Bernstein, Mr. McMillan, Mr. Trueblood (F,W,Sp)

110B. Physical Chemistry: Chemical Equilibrium, Electrochemistry, and Kinetics. Lecture, four hours; discussion, one hour. Prerequisites: course 110A, Physics 8C. Introduction to statistical thermodynamics, kinetic theory of gases, chemical kinetics, phase equilibria, chemical equilibria in solutions, electrochemistry.
Mr. Kivelson, Mr. McMillan, Mr. Reiss (W,Sp)

C110C. Physical Chemistry: Charges, Fields, and Matter. (Formerly numbered 110C.) Lecture, three hours; discussion, one hour. Prerequisite: course 110A. Topics include electromagnetic fields in matter — susceptibilities, molar polarization and refraction, multipoles, van der Waals forces; classical EM waves — propagation, refraction, scattering, absorption, optical rotation and rotatory dispersion, magnetic effects; radiation — multipoles, black-body, Einstein coefficients, lasers; scattering and diffraction — Rayleigh, Mie, Raman, X-ray, electron, neutron, nuclear — by particles, molecules, lattices; resonance phenomena — light, EPR, NMR, NQR, Mössbauer; electrolytes — ion activity, conductivity, rate effects. May be concurrently scheduled with course C210C.
Mr. McMillan (Sp)

113A. Physical Chemistry: Introduction to Quantum Chemistry. Lecture, four hours; discussion, one hour. Prerequisites: course 11C, Physics 6C or 8C, Mathematics 31A, 31B, 32A, 33A. An introduction to the principles and applications of quantum chemistry; atomic structure and spectra; harmonic oscillator; rigid rotor, molecular spectra.
Mr. Bayes, Mr. Gelbart, Mr. Scott (F,Sp)

C113B. Physical Chemistry: Introduction to Molecular Spectroscopy. Lecture/quiz, five hours. Prerequisite: course 113A or equivalent. Spectroscopic applications of basic quantum chemistry, including light-matter interaction, origin of selection rules, rotation-vibration spectra, anharmonic effects, electronic spectra, Franck-Condon principle, and topics from Raman, microwave, ESR, NMR, laser spectroscopy, and radiationless transitions. May be concurrently scheduled with course C213B.
Mr. Bayes, Mr. Williams (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. Trueblood, Mr. Williams (F,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 the instructor.
Mr. Bayes, Mr. Trueblood, Mr. Wiliams (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 quarter. Designed for chemistry students with a 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. Farrelly, Mr. Gelbart (W, C115A; Sp, C115B)

121. Special Topics in Physical Chemistry. Prerequisite: course 110B. Recommended: course 113A, Physics 8D. Topics of considerable research interest presented at a level suitable for students who have completed the junior-year courses in physical chemistry. (Sp)

C123A-C123B. Classical and Statistical Thermodynamics. Lecture, four hours; discussion, one hour. Prerequisite: course 110B or 156. Recommended: course 113A. Rigorous presentation of the 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 polyatomic gases, the 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. Reiss, Mr. Scott (F, C123A; W, C123B)

125. Computers in Chemistry. Lecture, three hours. Prerequisites: courses 110A, 110B, 113A, a 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. Levine (F)

133A. Intermediate Organic Chemistry. Prerequisites: courses 21, 23, 25 (may be taken concurrently), with grades of C or better, or consent of instructor. Structure, reactivity, and spectroscopic properties of organic compounds. Mr. Anet, Mr. Foote (F,Sp)

133B. Intermediate Organic Chemistry. Lecture, three hours; laboratory, four hours. Prerequisite: course 133A with a grade of C − or better. Lectures include reactions, mechanisms, and synthesis in organic chemistry; common classes of compounds and reactions. Laboratory includes methods of organic reactions, synthesis, isolation, and characterization.
Mr. Anet, Mr. Foote (F,W)

133BG. Intermediate Organic Chemistry (2 units). Lecture/quiz, three hours. Open only with consent of graduate adviser (Chemistry) to graduate students who have not taken course 133B at UCLA.
Mr. Anet, Mr. Foote (F,W)

133C. Intermediate Organic Chemistry. Lecture, two hours; laboratory, eight hours. Prerequisite: course 133B with a grade of C − or better. Lectures include reactions, mechanisms, and synthesis in organic chemistry; complex molecules and natural products; polymers. Laboratory includes methods of organic reactions, synthesis, isolation, and characterization. Mr. Anet, Mr. Foote (W,Sp)

133CG. Intermediate Organic Chemistry (2 units). Lecture/quiz, three hours. Open only with consent of graduate adviser (Chemistry) to graduate students who have not taken course 133C at UCLA.
Mr. Anet, Mr. Foote (W,Sp)

136. Organic Structural Methods. Lecture, two hours; laboratory, eight hours. Prerequisites: courses 133A, 133B, 133C, or equivalent, with grades of C − or better, or consent of instructor. A laboratory course in organic structure determination by chemical and spectroscopic methods; microtechniques.
Mr. Foote (F)

C143A. Structure and Mechanism in Organic Chemistry. Lecture, three hours; discussion, one hour. Prerequisites: courses 110B, 113A, 133C (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. Chapman

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. Mr. Chapman

144. Laboratory Methods in Organic Synthesis. Lecture, two hours; laboratory, eight hours. Prerequisite: course 133C or equivalent instruction, including spectroscopic methods of organic chemistry, with a grade of C − or better, or consent of instructor. Laboratory methods of synthetic organic chemistry, including reactions under inert atmosphere, semimicroscale reaction techniques, synthesis of natural products, and molecules of theoretical interest.
Mr. Jung (Sp)

144G. Laboratory Methods in Organic Synthesis (2 units). Consists of the lecture portion only of course 144. Open only with consent of graduate adviser to graduate students who have not taken course 144 at UCLA and who do not wish to take the laboratory portion of course 144. Mr. Jung

152. Biochemistry. Lecture, four hours; discussion, one hour. Prerequisite: course 25. Not open to students with credit for course 157A. Survey of biochemistry. May not be applied toward the chemistry or biochemistry major. Mr. Boyer, Mr. Smith (F)

154. Biochemical Methods. Lecture/quiz, two hours; laboratory, eight hours. Prerequisite: course 25. Recommended: course 152 or 157A. Applications of biochemical procedures to metabolic reactions; properties of living systems; enzymes; proteins; nucleic acids and other tissue constituents.
Mr. Clarke, Mr. Gralla, Mr. Martinson (F,W,Sp)

156. Biophysical Chemistry. Lecture, four hours; discussion, one hour. Prerequisite: course 110A. Solution thermodynamics of biochemical systems; biochemical kinetics; energy levels, spectroscopy, and bonding; topics from structural, hydrodynamic, statistical, and electrochemical methods of biochemistry.
Mr. Eisenberg, Mr. Rees, Mr. Schumaker (F,Sp)

157A. Biochemistry. Lecture, four hours; discussion, one hour. Prerequisites: courses 110A, 133B (may be taken concurrently). Enzymes; metabolic pathways and their integration and regulation; biological energetics.
Mr. Atkinson, Mr. Clarke, Mr. West (W)

157B. Biochemistry. Lecture, four hours; discussion, one hour. Prerequisite: course 157A. Biosynthetic metabolism; synthesis of nucleic acids and proteins and control of these processes.
Mr. Atkinson, Mr. Clarke, Mr. Jordan (Sp)

173. Structural Inorganic Chemistry. Lecture, three hours; discussion, one hour. Prerequisite or corequisite: course 110A. Recommended: courses 113A or 156, and 133B. Introductory survey of structure and bonding in inorganic compounds; molecular stereochemistry; donor-acceptor interactions; coordination compounds of the transition metals; elements of crystal-field and ligand-field theory.
Mr. Hawthorne, Mr. Kaesz, Mr. Zink (F,W,Sp)

174. Inorganic and Metalorganic Laboratory Methods. Lecture, two hours; laboratory, eight hours. Prerequisites: courses 133A, 133B, and 173, or consent of instructor. Synthesis of inorganic compounds, including air-sensitive materials; dry-box, vacuum line, and high-pressure techniques; Schlenck methods; chromatographic and ion exchange separations.
Mr. Hawthorne, Mr. Kaesz (W)

C175. Inorganic Reaction Mechanics. Lecture/discussion. 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. Strouse, Mr. Zink (F)

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, Mr. Williams (F,Sp)

190. Undergraduate Thesis Research. Prerequisites: two quarters of course 199 on related material, consent of undergraduate adviser and research director. Final quarter of an integrated one-year research project. May consist of experimental and/or theoretical research or, in some cases, a comprehensive review of a given area. A thesis embodying the totality of the year's work is to be submitted and an oral presentation made. The course is suggested, but not required, for those seeking departmental honors at graduation. (F,W,Sp)

196. Special Courses in Chemistry (1 to 4 units). Hours to be arranged. Prerequisite: consent of undergraduate adviser (Chemistry). (F,W,Sp)

199A-199ZZ. Directed Individual Study or Research for Undergraduate Students (2 to 8 units). To be arranged with faculty member who will direct the research. Prerequisites: advanced junior standing with a 3.0 GPA or senior standing in the major, consent of department chair. A proposal must be received one week prior to the first day of the quarter. Additional details on requirements and application may be obtained from the undergraduate counselor. P/NP grading. (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 the main group metals, the metalloids, and the transition metals, including olefin complexes and metal carbonyls; applications in catalysis and organic synthesis.
Mr. Hawthorne (Sp)

C210C. Physical Chemistry: Charges, Fields, and Matter. Lecture, three hours; discussion, one hour. Prerequisite: course 110A. Topics include electromagnetic fields in matter — susceptibilities, molar polarization and refraction, multipoles, van der Waals forces; classical EM waves — propagation, refraction, scattering, absorption, optical rotation and rotatory dispersion, magnetic effects; radiation — multipoles, black-body, Einstein coefficients, lasers; scattering and diffraction — Rayleigh, Mie, Raman, X-ray, electron, neutron, nuclear — by particles, molecules, lattices; resonance phenomena — light, EPR, NMR, NQR, Mössbauer; electrolytes — ion activity, conductivity, rate effects. May be concurrently scheduled with course C110C. S/U or letter grading.
Mr. McMillan (Sp)

C213B. Physical Chemistry: Molecular Spectroscopy. Lecture/quiz, five hours. Prerequisite: course 113A or equivalent. Spectroscopic applications of basic quantum chemistry, including light-matter interaction, origin of selection rules, rotation-vibration spectra, anharmonic effects, electronic spectra, Franck-Condon principle, and topics from Raman, microwave, ESR, NMR, laser spectroscopy, and radiationless transitions. May be concurrently scheduled with course C113B. Independent study project required of graduate students. Mr. Bayes, Mr. Williams (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 quarter. Designed for chemistry students with a 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. Farrelly, Mr. Gelbart (W, C215A; Sp, 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.
Mr. Bernstein (F)

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 (W)

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.

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.

C223A-C223B. Classical and Statistical Thermodynamics. Lecture, four hours; discussion, one hour. Prerequisite: course 110B or 156. Recommended: course 113A. Presentation of the 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 polyatomic gases, the 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. Reiss, Mr. Scott (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.

225. Chemical Kinetics. Lecture, three hours; discussion, one hour. Prerequisites: courses C215B, C223B. Classical experimental and theoretical approaches to the 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. Bernstein (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 grading.

M230A. Structural Molecular Biology (2 units). (Same as Biology M230A and Microbiology M230A.) Lecture, two hours; discussion, one hour. Prerequisite: consent of instructor based on a written research proposal. Fundamentals of electron microscopy of macromolecules and supramolecular structures, emphasizing quantitative microscopy, high resolution techniques, nucleic acid analysis, and studies on viruses and protein crystals.
Mr. Eiserling, Ms. Kasamatsu (F, alternate years)

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 the 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. Eiserling, Mr. Lake (W)

M230C. Structural Molecular Biology Laboratory. (Same as Biology M230C and Microbiology M230C.) Laboratory, 10 hours. Prerequisite: consent of instructor based on a written research proposal. Practical experience with electron microscopy of macromolecules and supramolecular structures, emphasizing quantitative microscopy, high resolution techniques, nucleic acid analysis, and studies on viruses and protein crystals.
Mr. Eiserling, Ms. Kasamatsu (F, alternate years)

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. Eiserling, 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

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. Mr. Hersh

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.

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, 133C (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. Chapman (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. Chapman (W)

244. Strategy and Design in Organic Synthesis. Lecture/discussion, three hours. Prerequisite or corequisite: course C243A or consent of instructor. The theory behind the planning of syntheses of complex molecules from simpler ones. Organic reactions and their use in the synthetic process. The reasoning and art involved in organic synthesis.

245. Applications of Electronic Theory in Organic Chemistry. Lecture, three hours; discussion, one hour. Prerequisite or corequisite: course C243A or consent of instructor. A 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; an introduction to photoelectron spectroscopy; frontier molecular orbital theory; related special topics.

246. Bioorganic Chemistry. Lecture/discussion, three hours. Prerequisite or corequisite: course C243A or consent of instructor. Organic chemical models for biological processes; synthetic models for enzymic complexation, catalysis, and inhibition; models for transport; solid support chemistry; mechanisms for differential complexation.

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 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 the Biochemistry and Molecular Biology of Animal Cells. Lecture, three hours. Prerequisites: courses 133A, 133B, 133C, or equivalent, 157A, 157B, 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.

Mr. Jordan and Invited Speakers

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.

M253. Macromolecular Structure (6 units). (Same as Biological Chemistry M253.) Lecture or recitation, five hours. Prerequisites: courses 110A, 156, 157A, and 157B, or Biological Chemistry 101A-101B or 201A-201B, or equivalent, or consent of instructor. Chemical and physical properties of proteins, nucleic acids, and other macromolecular complexes, with emphasis on theory and methodology; correlation of structure and biological properties; chemical synthesis and properties of polypeptides and polynucleotides. (F)

254. Advanced Biochemical Methods. Lecture/quiz, two hours; laboratory, eight hours. Prerequisite: course 156 or consent of instructor. Recommended corequisites: courses 157A, 157B. 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 (2 units). (Same as Biological Chemistry M255.) Prerequisites: course 110A, one course from 156, 157A, 157B or Biological Chemistry 101A or 101B, or equivalent, or consent of instructor. Reaction mechanisms in molecular biology; experimental approaches for the study of enzymes, including kinetics, isotopic labeling, stereochemistry, chemical modification, and spectroscopy; the design of pharmacologically active agents and artificial enzymes. Mr. Sigman (Sp)

M257. Physical Chemistry of Biological Macromolecules (2 units). (Same as Biological Chemistry M257.) Prerequisite: course 25 or 110A or consent of instructor. Theory of hydrodynamic, thermodynamic, and optical techniques used to study the 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 M253 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, the cell cycle; role of chromatin structure in mediating regulation.

Mr. Gralla, Mr. Martinson (Sp)

M261. Advanced Chemistry and Biochemistry of Lipids. (Same as Biological Chemistry M261.) Lecture, three hours; discussion, one hour. Prerequisites: courses 157A and 157B or Biological Chemistry 101A-101B or 201A-201B, or equivalent. Comprehensive treatment of lipid nutrition and metabolic-nutrient interactions . (W)

262. Biological Energy Transductions. Lecture, three hours. Prerequisite: course 157B or equivalent. 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. Mr. Boyer (W)

M263. Metabolism and Its Regulation. (Formerly numbered M255.) (Same as Biological Chemistry M263.) Lecture, three hours. Prerequisites: course 110A, one course from 156, 157A, 157B or Biological Chemistry 101A or 101B, 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). (Formerly numbered M264.) (Same as Biological Chemistry M264A-M264B-M264C.) Prerequisites: course M261 or equivalent, consent of instructor. The biochemistry, morphology, and physiology of atherosclerosis. Emphasis on the chemistry of lipoproteins and the role of plasma lipoproteins in the regulation of tissue lipid metabolism and the development of atherosclerosis. Each course may be taken independently for credit.

266. Seminar in Techniques for the Study of Gene Regulation (2 units). Prerequisite: course 259 or consent of instructor. A seminar to discuss specific experimental approaches being taken in the study of gene regulation. Emphasis on the 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 or recitation, five hours. Prerequisites: courses 157A and 157B or Biological Chemistry 101A-101B or 201A-201B, or equivalent. Recommended: course M253. Metabolism of nucleic acids and proteins; biosynthesis of complex lipids and polysaccharides; structure and properties of cellular organelles.

Mr. Herschman, Mr. Martinson (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 grading.

M269. Developmental Biochemistry (2 units). (Same as Biological Chemistry M269.) Prerequisite: course M267 or consent of instructor. Biochemical aspects of development, specific tissue and cell function, and differential gene expression. The biochemistry of cell division, macromolecular synthesis, chromatin function in gene expression, cell-cell interactions, membrane organization, and growth as they contribute to such topics as hormone induction, morphogenesis, and viral transformation. Emphasis on the use of differentiating *in vivo* systems and cell culture as models. Mr. Harary, Mr. Herschman

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.

C275. Inorganic Chemistry: Reaction Mechanisms. Lecture/discussion. 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. Strouse, 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 1R, Raman, visible, UV, NMR, ESR, and NQR, to the elucidation of structure and bonding in inorganic and organometallic compounds.
Mr. Strouse, Mr. Zink (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, Mr. Trueblood

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 grading.

279. Bioinorganic Chemistry. Lecture, three hours. Prerequisites: courses 110A and either 156 or 173. The role of metal ions in biology; introduction to metalloenzymes and metalloproteins; metal ion interactions with nucleic acids; metal ion metabolism.
Ms. Valentine (W)

M298. Seminar on 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. committee. 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. A teaching apprenticeship under the 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 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)

6532 Boelter Hall, (213) 825-5534

Professors

David L. Douglass, Ph.D. *(Materials Science and Engineering)*
Bruce S. Dunn, Ph.D. *(Materials Science and Engineering)*
M. Frederick Hawthorne, Ph.D. *(Chemistry)*
Herbert D. Kaesz, Ph.D. *(Chemistry)*
John D. Mackenzie, Ph.D. *(Materials Science and Engineering)*
Malcolm F. Nicol, Ph.D. *(Chemistry)*
Kanji Ono, Ph.D. *(Materials Science and Engineering)*
Howard Reiss, Ph.D. *(Chemistry)*

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: Mathematics 31A, 31B, 32A, 32B, 33A, Physics 8A, 8B, 8C/8CL, 8D/8DL, Program in Computing 10A, Materials Science and Engineering 14, Chemistry 11A or 11AH, 11B or 11BH, 11C or 11CH, 11BL or 11CL, 21 (may be replaced by 133A if offered as part of the major), English 3.

The Major

Required: Chemistry 110A, 110B, 113A, C113B or C115A-C115B, 114, 173, one or two courses from C123A, C123B, 133A, 133B, 133C, 174, C175, C176; Materials Science and Engineering 144A, 146A, 147A, three to four courses from 140D, 141, 142A, 143A, 145A, 145B, 146F, 147B, 147E, two courses from 142L, 144L, 146L.

For further information, contact Barbara Brooks, Materials Science and Engineering, 6532 Boelter Hall.

Chicano Studies (Interdepartmental)

3121 Campbell Hall, (213) 825-2363

Professors

Rosina Becerra, Ph.D. *(Social Welfare)*
John Garcia, Ph.D. *(Psychology)*
Juan Gómez-Quiñones, Ph.D. *(History)*
Manuel R. Miranda, Ph.D. *(Social Welfare)*
Amado M. Padilla, Ph.D. *(Psychology)*

Associate Professors

Leobardo Estrada, Ph.D. *(Architecture and Urban Planning)*
David E. López, Ph.D. *(Sociology)*
Raymund A. Paredes, Ph.D. *(English)*
Raymond A. Rocco, Ph.D. *(Political Science)*
Concepción Valadez, Ph.D. *(Education)*
Simon González, Ed.D., *Emeritus (Education)*

Assistant Professors

Felipe Castro, Ph.D. *(Psychology)*
Carlos V. Grijalva, Ph.D. *(Psychology)*
Guillermo Hernández, Ph.D. *(Spanish)*
Rebecca Morales, Ph.D. *(Architecture and Urban Planning)*
Sylvia Rodríguez, Ph.D. *(Anthropology)*

Adjunct Professor

Armando Morales, D.S.W. *(Psychiatry)*

Visiting Lecturers

Steven J. Loza, Ph.D. *(Music)*
Romulus E. Zamora, M.F.A. *(Theater, Film, and Television)*

Scope and Objectives

Today there is a demand for individuals with extensive knowledge of the Chicano community. Opportunities are developing 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 Mexican communities. The 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 through the Chicano Studies Research Center, is multidisciplinary and leads to the Bachelor of Arts degree. Special features include a field studies project, a Spring Quarter colloquium, and a guest speaker series.

Bachelor of Arts Degree

The B.A. program in Chicano Studies is designed to provide systematic instruction for liberal arts and preprofessional majors who wish concentrated study of the Chicano experience. Viewed as developmental, the program subjects the Chicano reality to critical investigation, including the social, economic, educational, historical, political, and psychological analysis of the Chicano.

The major is recommended for students preparing for graduate study as well as for public service careers. You are encouraged to spend up to one year in either (1) a service agency in the Chicano community or (2) a professional research project on the Chicano experience.

Preparation for the Major

Required: One course from each of the following departments: Anthropology 5, 6, or 22; Economics 1 or 2; History 6A, 6B, or 6C; Political Science 1; Sociology 1; Spanish 5 or equivalent. You must complete prerequisites for all courses selected.

The Major

This consists of three elements, one of which is optional (you must complete prerequisites for all courses in the major):

(1) **Major Core** (nine courses): Chicano Studies M102, M105, M145, M147, M159A, M159B, M172T; History 197; Sociology 124* or 155*.

(2) **Major Concentration:** Four courses in one discipline, selected from Anthropology 115P, 135A, 135B, 135Q, 136P, 138, M140, 150, 154, 166, 167, 185; Economics 110, 120, 121, 150, 151, 152, 172; English M104A, M104B, 106, 171, 172, 173, 174, 188, 189, 190; History 147B, 153, 154B, 160, 162, 163; Library and Information Science 111C, Political Science 115, 142, 149, 172B, 173, 174, 182A, 186, 190, 191; Psychology 127, 130, 134, 135, 136A, 137A, 137C, 143, 175; Sociology 109, 113, 120, 123, 125, 140, 142, M143, and 155* or 124*; Spanish 100A, 100B, 105A, 105B, 107, 115, M118A, M118B, 136A, 136B, 137, 139, 142, 143, 144, M149. You may petition the committee in charge of the major to include in the major concentration area a course not on the approved list. CED courses may be applied by petition.

*Course may not be used for both the major core and major concentration.

(3) **Optional Multidisciplinary Senior Thesis** — Prerequisite: senior standing. 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 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 quarter includes thesis conceptualization and formulation, along with preliminary data collection for the thesis. The second quarter 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 department chair and either the chair or adviser for the Chicano studies major. No more than two CED courses may be applied toward the major concentration.

Upper Division Courses

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 the development of Mexican-American and Chicano youth and communities.

M103C. The Origins and Evolution of Chicano Theater. (Same as Theater M103C.) Lecture, three hours. Prerequisite: upper division standing. An exploration of the development of Chicano theater from its beginnings in the legends and rituals of ancient Mexico to the work of Luis Valdez (late 1960s).
Mr. Zamora

M103D. Contemporary Chicano Theater. (Same as Theater M103D.) Lecture, three hours. Prerequisite: upper division standing. A study of recent trends in Chicano theater as reflected in the works of contemporary Chicano dramatists and theater artists.
Mr. Zamora

M105. The Chicano Experience in Literature. (Same as English M105.) Prerequisite: satisfaction of Subject A requirement. The study of literature in English by and about Chicanos. Survey of the depiction of the Chicano experience in American literature generally, with emphasis on the development of Chicano literature itself, its cultural backgrounds, and distinctive uses of language. Mr. Paredes

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. A 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 of the 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 the characteristics and development of the Chicano literary corpus.
Mr. Hernández

M147. Minority Group Politics. (Same as Political Science M147.) Lecture, three hours; discussion, one hour. Prerequisites: Political Science 1 plus one of the following: one additional 140-level political science course or one upper division course on race or ethnicity from history, psychology, or sociology, or consent of instructor. A systematic evaluation of the functioning of the American polity related to problems of race and ethnicity. Topics include leadership, organization, ideology, conventional versus unconventional political behavior, inter-minority relations, co-optation, symbolism, and repression. Mr. Rocco

M159A. History of the Chicano Peoples. (Same as History M159A.) Lecture, three hours. A survey lecture course on the 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 an integrated understanding of change over time in the Mexican community by inquiry into the 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 United States 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. A survey lecture course on the historical development of the Mexican (Chicano) community and people of Mexican descent in the United States through the 20th century, with special focus on labor and politics. Provides an integrated understanding of change over time in the Mexican community by inquiry into the 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 United States 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 5 or 22 or consent of instructor. An ethnography of the social and cultural adaptations of the 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. Ms. Rodríguez

Classics

7349 Bunche Hall, (213) 825-4171

Professors

Michael W. Haslam, Ph.D.
Philip Levine, Ph.D.
Bengt T. M. Löfstedt, Ph.D.
Jaan Puhvel, Ph.D.
Milton V. Anastos, Ph.D., *Emeritus*
Paul A. Clement, Ph.D., *Emeritus*
Albert H. Travis, Ph.D., *Emeritus*

Associate Professors

Ann L. T. Bergren, Ph.D.
Andrew R. Dyck, Ph.D.
Bernard D. Frischer, Ph.D., *Chair*
Katherine C. King, Ph.D.
Steven Lattimore, Ph.D.

Assistant Professors

David L. Blank, Ph.D.
Sander M. Goldberg, Ph.D.

Lecturers

Helen C. Caldwell, M.A., *Emeritus*
Barbara E. Killian, M.A., *Emeritus*
Evelyn Venable Mohr, M.A., *Emeritus*

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 the Classics (i.e., 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 purpose of the classical civilization major is to provide a balanced, yet focused, view of the ancient civilizations of Greece and Rome, both historically unique and universally typical human creations. The approach to the subject is accordingly both causal and comparative. The areas of study include the elements of culture — religion, mythology, philosophy, art, literature, language, the socioeconomic system, and politics. The requirements of the major encourage both breadth and depth: eight of the 14 required upper division courses (four from this department and four from other departments) must be taken in one of the four areas of concentration listed below; the remaining six upper division courses taken in this department may be selected to reflect your varied interests in the areas outside your concentration. The culmination of the program will be a senior paper, written during your senior year under professorial supervision. While this major is not designed to qualify you for graduate study in classics, it does not preclude a transition to advanced study in classics or related fields.

Preparation for the Major

Required: Classics 10 and 20.

The Major

Required: (1) Classics 195 and nine upper division courses in this department, of which no more than three may be selected from either Greek 100 through 130 or Latin 100 through 133 and of which four must be selected from the courses listed below under any one of the four areas of concentration; (2) any four related courses in other departments listed below in your chosen area of concentration. Total courses required: 14.

Areas of Concentration

(1) **Language and Society:** Classics 180, three courses from either Latin 100 through 133 or Greek 100 through 130. *Related courses:* Anthropology M140, Communication Studies 100, History 115A-115B-115C, 116A-116B, 117A-117B, 118, Linguistics 100, M150, 170, Philosophy 127A, 127B, 172.

(2) **Religion and Mythology:** Classics 145, 150A, 150B, 152, 161, 162, 165, 166A, 166B, 168. *Related courses:* Anthropology 133P, 156, English M111A, History 115A-115B-115C, 116A-116B, 117A-117B, 118, Ancient Near East (Near Eastern Languages) 170.

(3) **Literature and Society:** Classics 141, 142, 143, 144, 145, 150A, 150B, 152, 162, 165. *Related courses:* Anthropology 133R, 150, 152, 154, M163, 185, Communication Studies 100, 142, English 109, 190, History 115A-115B-115C, 116A-116B, 117A-117B, 118, Humanities 102, C105, C107, C111, Philosophy 101A, 101B, 102, Political Science 111A, Sociology 125, 159, Theater 102A, 102D.

(4) **Ancient Art, Architecture, and Urbanistics:** Classics 150A, 150B, 151A, 151B, 151C, 151D, 152. *Related courses:* Art History 103A, 103B, 103C, 103D, 105A, Geography 151, Sociology 125, same history and anthropology courses as above under item 3.

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 142 and either 141 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 151A, 151B, 151C, 151D), classical linguistics (Classics 180), classical mythology (Classics 161, 162, 168), Greek and Roman religion (Classics 166A, 166B), ancient philosophy (Classics 145, Philosophy 101A, 101B, 102, Greek 121, 122, 123, 124), Byzantine civilization (Classics M170A, M170B), 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 110; (2) one upper division course in Greek; (3) Classics 143 and either 141 or 142; (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 151A, 151B, 151C, 151D), classical linguistics (Classics 180), classical mythology (Classics 161, 162, 168), Greek and Roman religion (Classics 166A, 166B), ancient philosophy (Classics 145, Philosophy 101A, 101B, 102, Greek 121, 122, 123, 124), Byzantine civilization (Classics M170A, M170B), medieval Latin literature (Latin 131, 133). Total courses required: 16.

Bachelor of Arts in Classics (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 110; (2) one course from Classics 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 151A, 151B, 151C, 151D), classical linguistics (Classics 180), classical mythology (Classics 161, 162, 168), Greek and Roman religion (Classics 166A, 166B), ancient philosophy (Classics 145, Philosophy 101A, 101B, 102, Greek 121, 122, 123, 124), Byzantine civilization (Classics M170A, M170B), medieval Latin literature (Latin 131, 133). Total courses required: 16.

Note: Students in the classics, 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 and Latin majors and requirement 2 of the classics 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 105 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.

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 classics (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 the Graduate Admissions Office, which may be obtained from the Department of Classics (7349 Bunche Hall, UCLA, Los Angeles, CA 90024) or Graduate Admissions.

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 Educational Testing Service (ETS) reading examination (you need a minimum score of 500); for Italian, a written translation examination is administered by the department.

Course Requirements

For the Classics M.A., nine courses are required. These must include Greek 210 and Latin 210, one course each from the Greek 200A-200B-200C and Latin 200A-200B-200C series, and one course in the 201 through 229 series in each language. The three remaining courses are to be selected in consultation with the graduate adviser from the upper division and graduate courses offered by the department (or exceptionally by other UC departments or programs).

Nine courses are required for the Greek and Latin M.A. degrees. The University requires that at least five be graduate courses. For the Greek M.A., these must include Greek 210, two courses from the Greek 200A-200B-200C series, one course from the Greek 201 through 229 series, three additional upper division or graduate Greek courses, and two additional upper division or graduate courses to be selected in consultation with the graduate adviser. The Latin M.A. course requirements are identical except for the substitution of Latin for Greek courses.

No more than one 596 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 (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 examinations consist of three two-hour written tests on sight translations from Greek and prepared texts from the Greek reading list (for the Classics and Greek M.A.), sight translations from Latin and prepared passages from the Latin reading list (for the Classics and Latin M.A.), and the history of Greek and Latin literature (Greek or Latin for the Greek or Latin M.A.). The three examinations may be taken on three separate days, which need not be during the same quarter. The M.A. examinations are normally given at the beginning of each quarter. All examinations may be repeated once; in exceptional cases and with consent of the departmental faculty, more than once.

Ph.D. Degree

Admission

In addition to an M.A. degree (see below), 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 the Graduate Admissions Office, which may be obtained from the department or Graduate Admissions.

A UCLA M.A. degree in Classics (Greek and Latin), Greek, or Latin, with distinction, or an equivalent degree is required. In cases of doubtful equivalency to the UCLA M.A. degree, the department may allow provisional admission.

Major Fields or Subdisciplines

The department offers the Ph.D. degree in Classics with the following areas of specialization: classical literature and philology, classical linguistics, ancient history, ancient philosophy, classical archaeology, patristic and Byzantine studies, medieval Latin studies.

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.

Course Requirements

At least one full year of graduate study (normally eight to nine courses) is required as preparation for the qualifying examinations. You may choose any of the areas of specialization listed above and, if entering with a UCLA M.A. in Classics or the equivalent, may take courses entirely within the area of specialization; if you specialize in classical literature and philology, you may concentrate on Greek or Latin as research interests dictate. If you enter with a UCLA Greek M.A. or the equivalent, you must take, in addition, Latin 210, one course from the Latin 200A-200B-200C series, and one course from the Latin 201 through 229 series if you have not previously taken these courses. If you enter with a UCLA Latin M.A. or the equivalent, you must satisfy identical course requirements in Greek.

Qualifying Examinations

Before the qualifying examinations, you must complete the departmental Ph.D. reading list in either Greek or Latin authors, which is in addition to the M.A. reading lists and varies somewhat according to the area of specialization. In addition, students entering with the Greek M.A. must complete the Latin M.A. reading list; students entering with the Latin M.A. must complete the Greek M.A. reading list. Students are advanced to candidacy as a result of passing the qualifying examinations (which consist of written examinations covering translation, the reading lists, and your area of specialization) and the University Oral Qualifying Examination covering both the area of specialization and the general field of classical studies. Each examination may normally be repeated once.

Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

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 is not required. Lectures, many illustrated, on Greek life and culture from the age of Homer to the Roman Conquest. Discussion of art, literature, philosophy, and mythology.
Mr. Blank, Mr. Lattimore (F,W)

20. Survey of Roman Civilization. Knowledge of Latin is not required. A study of life and culture of Rome from the time of its foundation to the end of antiquity. A survey of art, literature, and political thought of the Romans. Selections from Latin authors are read in translation.
Mr. Blank, Mr. Frischer, Mr. Goldberg (W,Sp)

68F. Freshman Seminar on Comparative Mythology. Discussion, three hours. Prerequisite: freshman standing. 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)

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 the discovery of America). Mr. Dyck

71F. Power and Imagination in Byzantium. Discussion, three hours. Prerequisite: freshman standing. A study of the 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)

Upper Division Courses

141. A Survey of Greek Literature in English. A study of classical Greek literature, exclusive of the drama, with readings in English.
Mr. Haslam, Ms. King

142. Ancient Drama. A study of Greek and/or Latin drama in translation.
Mr. Dyck, Mr. Goldberg, Mr. Haslam, Ms. King

143. A Survey of Latin Literature in English. A study of classical Latin literature, exclusive of the drama, with readings in English.
Mr. Blank, Mr. Dyck, Mr. Frischer, Mr. Goldberg

144. A Survey of Greek and Roman Epic in Translation. Homer's *Iliad* and *Odyssey,* Vergil's *Aeneid,* and Ovid's *Metamorphoses,* studied in translation.
Ms. Bergren, Ms. King

145. Ancient Greek and Roman Philosophy. Lecture, two hours; discussion, one hour. A study of some of the major Greek and Roman philosophical texts, including those of the Pre-Socratics, Plato, Aristotle, and Hellenistic philosophers, with emphasis on the historical and cultural setting of the texts, their literary form, interrelations, and contribution to the discussion of basic philosophical issues. Mr. Blank

150A. Origins of the Western View of Women: The Female in Greek Thought. (Formerly numbered 150.) Lecture, three hours. An interdisciplinary study of the concept of the female in the 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. (Formerly numbered 150.) Lecture, three hours. Course 150A is not prerequisite to 150B. An interdisciplinary study of the concept of the female in Roman and early Christian thought. Special emphasis on the status of the female with regard to sexuality, procreation, and the sacred. Ms. Bergren

151A. Classical Archaeology: The Aegean Bronze Age. Knowledge of Greek is not required. A survey of the prehistoric art and archaeology of the Greek lands.

151B. Classical Archaeology: Greco-Roman Architecture. Knowledge of Greek and Latin is not required. A general introduction to the study of Aegean, Greek, and Roman architecture. Mr. Lattimore

151C. Classical Archaeology: Greco-Roman Sculpture. Knowledge of Greek and Latin is not required. A general introduction to the study of Aegean, Greek, and Roman sculpture. Mr. Lattimore

151D. Classical Archaeology: Greco-Roman Painting. Knowledge of Greek and Latin is not required. A general introduction to the study of Aegean, Greek, and Roman painting. Mr. Lattimore

152. The Ancient City. A study of urban planning in the ancient world, with particular attention to the 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 the form, design, and function of the major municipal areas and buildings, and of the provision of public amenities by detailed reference to significant archaeological sites and contemporary sources. Mr. Frischer, Mr. Lattimore

161. Introduction to Classical Mythology. The origins of classical myth; the substance of divine myth and heroic saga; the place of myth in religion; a survey of the study of classical mythology.
Mr. Lattimore, Mr. Puhvel

162. Classical Myth in Literature. The use of myth in the principal authors and genres of Greek and Roman literature, with examples of its influence in later literatures.

165. Ancient Athletics. A study of ancient Greek and Roman athletics and their connections with religion, politics, literature, and art. Mr. Lattimore

166A. Greek Religion. A study of the religion of the ancient Greeks. Mr. Blank, Mr. Dyck

166B. Roman Religion. A study of the religion of the ancient Romans. Mr. Frischer

168. Introduction to Comparative Mythology. Prerequisite: course 161 or consent of instructor. The 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

M170A. Byzantine Civilization. (Same as History M122A.) Emphasis on Byzantine theology.
Mr. Dyck

M170B. Byzantine Civilization. (Same as History M122B.) Literature, relations with Rome, and the Renaissance. Mr. Dyck

180. Introduction to Classical Linguistics. Prerequisites: Greek 3, Latin 3. Basics of the comparative grammar of Greek and Latin in relation to one another and in the frame of Indo-European linguistics.
Mr. Puhvel

195. Senior Paper. Limited to seniors in classical civilization. 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.

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 the 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. A survey of scholarly research on Etruscan language and culture, with analysis of epigraphic material.
Mr. Puhvel

244. Textual Criticism: Studies in the Preparation of a Critical Edition of Greek and/or Latin Texts. Seminar, three hours. The different steps required in the preparation of a critical edition of an ancient text: localizing the manuscripts; collation; establishing the stemma; selecting the right reading on the basis of knowledge of the context, of the language of the author, and of the sources; emendations; formulation of the *apparatus criticus* and the *apparatus fontium.*
Mr. Haslam, Mr. Levine, Mr. Löfstedt

246. Greek and Latin Meter. Prerequisite: consent of instructor. A comprehensive study of meter as it functions in classical poetry. Mr. Haslam

251A. Seminar in Classical Archaeology. The Aegean Bronze Age.

251B. Seminar in Classical Archaeology. Greco-Roman architecture. Mr. Frischer, Mr. Lattimore

251C. Seminar in Classical Archaeology. Greco-Roman sculpture. Mr. Lattimore

251D. Seminar in Classical Archaeology. Greco-Roman painting. Mr. Lattimore

252. Topography and Monuments of Athens. Detailed studies in the topography and monuments of Athens, combining the evidence of literature, inscriptions, and actual remains. Mr. Lattimore

253. Topography and Monuments of Rome. Detailed studies in the topography and monuments of ancient Rome, combining the 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 in 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. (Formerly numbered M287.) A survey of the 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. A teaching apprenticeship under the 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).

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)

40. The Greek Element in English. Knowledge of Greek is not required. A study of the derivation and usage of English words of Greek origin: analysis into their component elements directed toward understanding of form and meaning. Mr. Blank

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

101A. Homer: *Odyssey.* Mr. Haslam, Ms. King, Mr. Puhvel

101B. Homer: *Iliad.* Mr. Haslam, Ms. King, Mr. Puhvel

102. Lyric Poets. Selections from Archilochus to Bacchylides. Ms. Bergren, Mr. Haslam

103. Aeschylus. Ms. Bergren, Mr. Blank, Mr. Haslam

104. Sophocles. Ms. Bergren, Mr. Haslam, Ms. King

105. Euripides. Mr. Frischer, Mr. Haslam, Ms. King

106. Aristophanes. Ms. Bergren, Mr. Haslam

110. The Study of Greek Prose. Work in sight reading and grammatical analysis of Attic prose texts; writing Attic prose. Mr. Blank, Mr. Haslam

111. Herodotus. Mr. Blank, Mr. Lattimore

112. Thucydides. Mr. Haslam, Ms. King, Mr. Lattimore

113. Attic Orators. Mr. Dyck, Mr. Haslam, Mr. Lattimore

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

124. Artistotle: *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. Haslam

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.

200A-200B-200C. History of Greek Literature. Prerequisite: consent of instructor. Lectures on the history of Greek literature, supplemented on the part of the student by independent reading of Greek texts in the original. Ms. Bergren, Mr. Haslam, Ms. King

201A-201B. Homer: *Iliad.* Ms. Bergren, Mr. Haslam, Ms. King

202A-202B. Homer: *Odyssey and the Epic Cycle.* Ms. Bergren, Mr. Haslam, Ms. King

203. Hesiod. Ms. Bergren, Mr. Frischer

204. Homeric Hymns. Ms. Bergren

205. Seminar in Aeschylus. Ms. Bergren, Mr. Blank, Mr. Haslam

206A-206B. Sophocles. Mr. Haslam, Mr. Lattimore

207A-207B. Euripides. Mr. Frischer, Mr. Haslam, Ms. King

208A-208B. Aristophanes. Ms. Bergren

209. Seminar in Hellenistic Poetry. Mr. Frischer, Mr. Haslam

210. Advanced Greek Prose Composition. Prerequisite: course 110 or equivalent. Mr. Haslam

211A-211B. Herodotus. Mr. Blank

212A-212B. Thucydides. Mr. Haslam, Mr. Lattimore

213. Seminar in Greek Historiography. Mr. Haslam

214. Demosthenes. Mr. Dyck

215. Early Greek Orators. Studies in the works of Antiphon, Andocides, and Lysias. Mr. Dyck

216. Menander. Prerequisite: reading knowledge of classical Greek. Mr. Frischer, Mr. Goldberg

217A. Greek Lyric Poetry: Archaic Lyric. Prerequisite: consent of instructor. A study of lyric poetry of the Archaic period, both choral and monodic, with elegiac and iambic included. Ms. Bergren, Mr. Haslam

217B. Greek Lyric Poetry: Pindar and Bacchylides. Prerequisite: consent of instructor. A study of the choral odes of Pindar and Bacchylides, with special attention to the conventions of the epinician. Ms. Bergren, Mr. Haslam

221. Seminar in the Pre-Socratic Philosophers. Mr. Blank, Mr. Frischer

222A-222B. Plato. Ms. Bergren, Mr. Blank

223A-223B. Aristotle. Mr. Blank, Mr. Dyck, Mr. Frischer

224. Seminar in Post-Aristotelian Philosophy. Mr. Blank, Mr. Frischer

231A-231B-231C. Seminar in Later Greek and Byzantine Literature. 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. Mr. Blank, Mr. Dyck

233. Byzantine Poetry. A study of the main representatives of both religious and secular poetry. Mr. Dyck

240A-240B. History of the Greek Language. Prerequisite: consent of instructor. **240A.** The linguistic history of classical Greek. **240B.** Postclassical, medieval, and modern Greek. Mr. Dyck

241. Greek Epigraphy. A survey of Greek historical inscriptions, chiefly Attic. Mr. Dyck

242. Greek Dialects and Historical Grammar. Prerequisite: consent of instructor. The linguistic situation in early Greece. Readings in classical Greek dialectal texts. Greek grammar in the context of common Greek and Indo-European linguistics. 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. Puhvel

244. Greek Papyrology. Prerequisites: reading knowledge of Greek, consent of instructor. An introduction to Greek papyri, considered both as historical documents and as carriers of literature. Mr. Haslam

245. Greek Palaeography. Studies in the development of the 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 the declensions of nouns and adjectives, all conjugations in the indicative mood, and the primary uses of the subjunctive mood. Emphasis on the development of the ability to read easy selections of classical prose.

40. The Latin Element in English. Knowledge of Latin is not required. A study of the derivation and usage of English words of Latin origin; analysis into their component elements directed toward understanding of form and meaning. Mr. Lattimore

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. Blank, Mr. Levine

101. Plautus. Mr. Goldberg, Mr. Löfstedt

102. Terence. Mr. Goldberg, Mr. Löfstedt

103. Lucretius. Mr. Blank, Mr. Frischer, Mr. Levine

104. Ovid. Ms. Bergren

105. Vergil: Selections from *Aeneid I-VI.* (Formerly numbered 105A). Mr. Haslam, Ms. King, Mr. Levine

106. Catullus. Mr. Haslam, Mr. Levine

107. Horace. Mr. Frischer, Mr. Levine

108. Roman Elegy. Selections from Catullus, Tibullus, and Propertius. Mr. Frischer, Mr. Levine

109. Roman Satire. Selections from the *Epistles* of Horace, the *Satires* of Juvenal, and the *Epigrams* of Martial. Mr. Levine

110. The Study of Latin Prose. Work in sight reading and grammatical analysis of classical prose texts; writing of classical prose. Mr. Blank, Mr. Levine

111. Livy. Mr. Frischer, Mr. Löfstedt

112. Tacitus. Mr. Frischer, Mr. Löfstedt

113. Cicero: The Orations. Mr. Dyck, Mr. Frischer

114. Roman Epistolography: Cicero and Pliny. Mr. Blank, Mr. Dyck, Mr. Frischer

115. Caesar. Mr. Dyck

116. Petronius. Mr. Frischer, Mr. Löfstedt

117. Sallust.

118. Seneca. A selection of Seneca's works is read in Latin. Mr. Blank, Mr. Löfstedt

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

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 the idiosyncrasies of medieval Latin. Mr. Löfstedt

133. Medieval Latin Poetry. Prerequisite: one upper division language course in Latin 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.

200A-200B-200C. History of Latin Literature. Prerequisite: consent of instructor. Lectures on the history of Latin literature, supplemented on the part of the student by independent reading of Latin texts in the original. Mr. Frischer, Mr. Goldberg, Mr. Levine

201. The Roman Epic Tradition. 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.

202. Seminar in Catullus. A detailed consideration of the entire Catullan corpus. Mr. Levine

203A. Elegiac Poetry. Mr. Frischer, Mr. Levine

203B. Propertius. Mr. Frischer, Mr. Levine

204A-204B. Vergil's *Aeneid*. Mr. Haslam, Ms. King

205. Seminar in Vergil's Bucolics. Mr. Frischer, Ms. King

206. Horace. Mr. Frischer

207. Roman Comedy. Prerequisite: consent of instructor. Survey of the history of Roman comedy. Reading of one comedy by Plautus or Terence, with emphasis on language and meter. Mr. Goldberg, Mr. Löfstedt

208. Ovid. Prerequisite: reading knowledge of classical Latin. A detailed study of the poetic works of Ovid. Readings in the original with discussion of the secondary literature and scholarship. May be repeated for credit with topic change. Ms. Bergren

209. Seminar in Roman Satire. A detailed study of an individual satirist, with attention to his position in the development of the satirical genre in Roman literature. Choice of author varies from year to year. Close study of the text, of the characteristics of the writer as a social critic and artist, and of the contemporary literary and social environment.

210. Advanced Latin Prose Composition. Prerequisite: course 110 or equivalent. Mr. Levine

211A-211B-211C. Seminar in the Roman Historians. A study of considerable portions of the writings of:

211A. Sallust.

211B. Livy. Mr. Frischer

211C. Tacitus. Mr. Frischer

215. Seminar in the Roman Novel. Works such as Petronius' *Satyricon* and Apuleius' *Metamorphoses:* a study of the literary problems. May be repeated for credit with topic change. Mr. Blank, Mr. Frischer

216. Roman Rhetoric. 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 the rhetorical tradition. May be repeated with topic change. Mr. Dyck, Mr. Frischer

220. Cicero's Orations. (Formerly numbered 220B.) Seminar, three hours. Mr. Dyck, Mr. Frischer

221A. Cicero's Philosophical Works. Mr. Dyck, Mr. Frischer, Mr. Levine

221B. Cicero: De Natura Deorum. Mr. Dyck, Mr. Frischer, Mr. Levine

222. Seminar in Roman Stoicism. Prerequisite: reading knowledge of Greek and Latin. Mr. Blank, Mr. Dyck, Mr. Frischer

223. Lucretius. Mr. Blank, Mr. Frischer

224. Seneca. 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. Mr. Goldberg

231A-231B. Seminar in Medieval Latin. Prerequisite: at least one upper division course in Latin 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. Mr. Löfstedt

232. Vulgar Latin. Prerequisite: consent of instructor. History and characteristics of popular Latin; its development into the early forms of the Romance languages. Mr. Löfstedt

240. History of the Latin Language. Prerequisite: consent of instructor. The 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. The linguistic situation in early Italy. Readings in Oscan, Umbrian, and early Latin texts. Latin grammar in the context of Italic and Indo-European linguistics. Mr. Puhvel

243. Seminar in Latin Palaeography. Studies in the development of the book hand in Latin manuscripts earlier than the invention of printing. Mr. Levine

370. The Teaching of Latin. Prerequisite: graduate standing or consent of instructor. Techniques for teaching; organization of courses; review of the content of the 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 (Art, Design, and Art History) 103A. Greek Art

103B. Hellenistic Art

103C. Roman Art

223. Classical Art

History 115A-115B-115C. History of the Ancient Mediterranean World

116A-116B. History of Ancient Greece

117A-117B. History of Rome

121A-121B. Medieval Europe

123A-123B. Byzantine History

215A-215B. Seminar in Ancient History

216A-216B. Seminar in Byzantine History

222A-222B. Seminar in Medieval Intellectual History and History of Science

Indo-European Studies 132. European Archaeology: The Bronze Age

M150. Introduction to Indo-European Linguistics

210. Indo-European Linguistics: Advanced Course

280A-280B. Seminar in Indo-European Linguistics

Philosophy 101A. Plato — Earlier Dialogues

101B. Plato — Later Dialogues

102. Aristotle

Courses on Other Campuses

Exchange and resource-sharing programs make it possible for UCLA students to take classics and classics-related courses at other schools in the Southern California area (i.e., University of Southern California and the Irvine, Riverside, and Santa Barbara campuses of the University of California). The graduate and undergraduate advisers should be consulted for specific details.

Communication Studies
(Interdepartmental)

232 Royce Hall, (213) 825-3303

Professors

Patricia M. Greenfield, Ph.D. *(Psychology)*
Steven H. Shiffrin, J.D. *(Law)*
Donald E. Hargis, Ph.D., *Emeritus*

Associate Professors

Patrice French, Ph.D.
Neil M. Malamuth, Ph.D., *Chair*
Paul I. Rosenthal, Ph.D.

Assistant Professor

Donald O. Case, Ph.D. *(Library and Information Science)*

Lecturers

Jeffrey I. Cole, Ph.D.
L. Geoffrey Cowan, LL.B.
Diana M. Meehan, Ph.D.
Janet Weathers, Ph.D.

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 16 upper division courses as set forth below. Enrollment in the major is limited. Admission to the major will be by application to the committee in charge. Applications are available in the program office.

Preparation for the Major

Required: Communication Studies 10, Linguistics 1, Psychology 10, Sociology 1. Linguistics 2 is required for students who specialize in interpersonal communication.

The Major

Required Core Courses: Communication Studies 100 and 101 and one course from Anthropology M140, Communication Studies 102, or Linguistics 100.

Specializations

Mass Communication: (1) Theory and method — Communication Studies 140, 152, and either Communication Studies 147 or Sociology 122, and one course from Political Science 141, Psychology 137B, or Sociology 150; (2) modes of mass communication — two courses from Communication Studies 160, 165, 170; (3) media and media history — two courses from Communication Studies 187, Motion Picture/Television 106A, 108, 110A, and either Motion Picture/Television 116 or Communication Studies 175; (4) electives (five courses) — two courses from Communication Studies 115, 120, 130, Psychology 135 or Sociology 154, Psychology 137A or Sociology 152, Sociology 155; three courses from one of the following groups: (a) language theory — Communication Studies 142, 150, Linguistics 100, 170, Philosophy 172, Psychology 123; (b) American studies — English 115A, History 148A, 148B, 148C, 150A, 150B, 156A, 156B, Political Science 114A, 114B; (c) social systematics — Anthropology 133P, 133R, 135A, 135B, 142A, 142B, Sociology C144A, C144B, and either Sociology 151 or Anthropology 134.

Interpersonal Communication: (1) Theory — Psychology 135 or Sociology 154, Psychology 137A or Sociology 152; (2) methods — three courses from Communication Studies 115, 120, Management 182, Psychology 174; (3) heterogeneous groups communication — three courses from Anthropology 166, Communication Studies 130, Sociology 124, 155; (4) electives (five courses) — two courses from Communication Studies 147 or Sociology 122, Communication Studies 140, 152, 160, 165, 170; three courses from one of the following groups: (a) language theory — Communication Studies 142, 150, Linguistics 100, 170, Philosophy 172, Psychology 123; (b) media and media history — Communication Studies 187, Motion Picture/Television 106A, 108, 110A, and either Communication Studies 175 or Motion Picture/Television 116; (c) social systematics — Anthropology 133P, 133R, 135A, 135B, 142A, 142B, Sociology C144A, C144B, and either Anthropology 134 or Sociology 151.

Lower Division Course

10. Introduction to Communication Studies. An introduction to the 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)

Upper Division Courses

100. Communication Theory. Prerequisite: course 10, Linguistics 1, Sociology 1, Psychology 10, or consent of instructor. Analysis of the 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.
Ms. French, Ms. Weathers

101. Freedom of Communication. Analysis of legal, political, and philosophical issues entailed in the rights of free expression, access to an audience, and access to information. Study of court decisions governing freedom of communication in the United States. Mr. Cowan, Mr. Rosenthal (F,Sp)

102. The Code of Human Communication. Prerequisite: course 10, Sociology 1, Psychology 10, Linguistics 1, or consent of instructor. The structural analysis and description of human communication codes; the development of language; characteristics of the source, channels, and destination in human communication. Ms. French, Ms. Weathers

115. Dyadic Communication and Interpersonal Relationships. Prerequisite: course 100. The developmental approach to the 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. Weathers

120. Principles and Types of Group Communication. Prerequisite: course 100 or consent of instructor. Analysis of the purposes, principles, and types of small group communication. Particular emphasis on the organization of and participation in problem-solving discussion. Ms. Weathers

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 the participation, analysis, and criticism of interethnic and interracial communications in the small group configuration. Ms. Weathers

140. Theory of Persuasive Communication. Prerequisite: course 100 or consent of instructor. The dynamics of communication designed to influence human conduct; analysis of the structure of persuasive discourse; integration of theoretical materials drawn from relevant disciplines of the humanities and social sciences. Mr. Rosenthal

142. Rhetorical Theory. Prerequisite: course 100 or consent of instructor. Survey of the major classical and neoclassical treatises on rhetoric. Analysis of the theories of Plato, Aristotle, Cicero, Quintilian, St. Augustine, Blair, Whately, Campbell, and other leading works in the theory of rhetoric.

147. Mass Communication and Social Systems. Prerequisite: course 100 or consent of instructor. Comparative analysis of major theories about relationships between mass media and social systems from the interpersonal to the international level; emphasis on empirical research. Ms. Meehan

150. Analysis of Communication Content. Prerequisite: course 100 or consent of instructor. Study of methodologies for the 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 the 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 the relationship between the mass media and aggression against women. Consideration of both the 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 the 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. An introduction to modern communication technology and policy, with special attention to current policy issues, the institutions which make policy decisions, and the 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

160. Political Communication. Prerequisites: courses 100 and 101, or consent of instructor. Study of the 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. Ms. Meehan

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 the trial and appellate processes as systems of communication. Analysis of the elements of the juridical process as they affect the quality of communication content. Study of the rules of evidence, jury behavior, and the structure of legal discourse. Mr. Rosenthal

171. Seminar in the Theories of Freedom of Speech and Press. Prerequisites: course 101, consent of instructor. An exploration of the relationship between the 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 the media, and the control of commercial, corporate, and government speech. Mr. Shiffrin

175. Criticism and the Public Arts. Prerequisite: course 10 or consent of instructor. An 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 the definition of art and criticism, the aesthetic media, genre and resources of film, television, theater, and public discourse, the varieties of critical method, the problems of critical judgment.

185. Field Studies in Communication (2 to 4 units). (Formerly numbered 199F.) Discussion, two hours; fieldwork, seven to 14 hours (depending on unit value). Prerequisites: senior standing in communication studies, 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 six units. P/NP grading. Ms. Gregory

187. Ethical and Policy Issues in the Institutions of Mass Communication. Prerequisites: courses 10, 101. An intensive examination of the ethical and policy issues arising from the interaction of media institutions (print, film, broadcasting, and the new technologies) and societal institutions (Congress, federal agencies, courts, the Presidency, schools, churches, political action groups, advertisers, and audiences). Mr. Cole

197. 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.

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 study for seniors who desire an 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 study for honors undergraduates who desire an intensive or specialized investigation of selected research topics.

Comparative Literature
(Interdepartmental)

334D Royce Hall, (213) 825-7650

Professors

Michael J. B. Allen, Ph.D. *(English)*
Arnold J. Band, Ph.D. *(Hebrew and Comparative Literature)*
A. R. Braunmuller, Ph.D. *(English)*
Daniel G. Calder, Ph.D. *(English)*
Margherita Cottino-Jones, Ph.D. *(Italian)*
Hassan el Nouty, Docteur ès Lettres *(French)*
Eric Gans, Ph.D. *(French)*
Peter Haidu, Ph.D. *(French)*
Carroll B. Johnson, Ph.D. *(Spanish)*
Henry A. Kelly, Ph.D. *(English)*
Richard D. Lehan, Ph.D. *(English)*
Maximillian E. Novak, D.Phil., Ph.D. *(English)*
Joseph N. Riddel, Ph.D. *(English)*
Ross P. Shideler, Ph.D. *(Scandinavian and Comparative Literature), Chair*
Stephen I. Yenser, Ph.D. *(English)*
Pier-Maria Pasinetti, Ph.D., *Emeritus (Italian and Comparative Literature)*

Associate Professors

Frederick L. Burwick, Ph.D. *(English)*
Edward I. Condren, Ph.D. *(English)*
Michael Heim, Ph.D. *(Czech and Russian Literature)*
Albert D. Hutter, Ph.D. *(English)*
Shuhsi Kao, Ph.D. *(French)*
Katherine C. King, Ph.D. *(Classics and Comparative Literature)*
Kathleen L. Komar, Ph.D. *(German and Comparative Literature)*
Robert M. Maniquis, Ph.D. *(English)*

Assistant Professor

Lucia Re, Ph.D. *(Italian and Comparative Literature)*

Visiting Professor

Hans Robert Jauss, Ph.D.

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). Applicants should have literary proficiency in one foreign language and at least an 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 a 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 a 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 Educational Testing Service (ETS) foreign language examination with a score of 600 or better. Translation examinations may be administered by departmental members in languages for which no ETS examination 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 201, 202, 203, or 204; the comparative study of one genre (e.g., the novel, the epic, the lyric, the drama); the comparative study of one period or movement (e.g., baroque, Romanticism).

(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 and the works of at least 10 authors in the minor literature. 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 the 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.

Foreign Language Requirement

You must have literary proficiency in at least two foreign languages before taking the qualifying examination. A 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. The language requirements for the Ph.D. are to be fulfilled in the same way as those for the M.A. degree.

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 will have to take three of the required six courses in comparative literature and one from each of the major and minor literatures. 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, two of the required graduate courses should be comparative literature courses and one of the two should have a theoretical orientation (such as Comparative Literature 202, 203, 204). Three courses in the second minor are normally recommended.

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 quarters. The written examinations are based on reading lists for the major and two minor literatures.

For the major literature, you may select one of the following examination formats:

(1) A written examination divided into two parts, each based on a reading list of at least 25 to 30 items and three to four hours in length. The first part evaluates your broad historical knowledge of the major field; the second part tests specific knowledge of your particular period or critical problem.

(2) A written examination and a prospectus (25 to 30 pages) to be discussed during the University Oral Qualifying Examination. The written examination evaluates your broad historical knowledge of the major field and is based on a reading list of 25 to 30 items. The prospectus must be submitted at least two weeks before the oral qualifying examination and should identify the proposed dissertation topic, give an example of the problem and method of the dissertation, outline the dissertation as a whole, and present a bibliography of relevant material.

If you select the second format, you must pass three courses given by your major department in your period or area of specialization before you can take the oral qualifying examination. Coursework taken for the M.A. degree may not be applied.

A three- to four-hour written examination is taken in each of the minor literatures. These examinations are based on approved reading lists of 25 to 30 items.

The University Oral Qualifying Examination must be taken within 60 days after you pass the last written examination and covers three areas:

(1) Competence as determined by the reading lists and the written examinations.

(2) Both a familiarity with major critical texts pertaining to the reading lists and competence in general literary theory.

(3) The proposed dissertation topic. If you select the first format for your major literature written examination, this section of the oral examination is a minor part and focuses on a brief dissertation prospectus of six to 10 pages. If you select the second format, this section of the oral examination is a major part and focuses on the dissertation prospectus (25 to 30 pages) prepared as part of the written examination.

The program allows a maximum of two attempts to pass the Ph.D. examinations.

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.

Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

Graduate Courses

200. The Methodology of Comparative Literature (6 units). Seminar, four hours. Prerequisite: consent of instructor. A study of the methodology of comparative literature and the theory of literature.

201. Contemporary Theories of Criticism. Prerequisite: course 200 or equivalent. An advanced course in the theory of literature focusing on structuralist, psychoanalytic, and Marxist approaches.

202. Problems in the Theory of Literature. Prerequisites: reading knowledge of French or German, course 201 or equivalent. A study of specific topics in the theory of literature for advanced students in criticism and literary theory. May be repeated for credit.

203. Problems of the Sign in Literature. An inquiry into the 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 the "sciences" envisioned by Saussure (semiology) and Peirce (semiotics) and propounded by contemporary theorists such as Barthes, Hjelmslev, and Greimas. Ms. Kao

204. Psychoanalytic Approaches to Literature. Prerequisite: course 200 or the equivalent criticism course in English. A study of the development of modern psychoanalytic approaches to literature, with particular stress on affective theories of criticism. Readings include Freud and the early psychoanalytic critics, contemporary psychoanalytic critics of literature, and modern British and American psychoanalytic theorists (Winnicott, Schafer) whose work is applicable to literary theory. Mr. Hutter

C205. The Comic Spirit. Prerequisite: reading knowledge of one appropriate foreign language. Literary masterpieces, both dramatic and nondramatic, selected to demonstrate the varieties of comic expression. May be concurrently scheduled with Humanities C105. Graduate students are required to prepare papers based on texts read in the original languages and to meet as a group one additional hour each week. Mr. Band

206. Reception Theory and Literary Hermeneutics. The major premises of reception theory and literary hermeneutics presented and analyzed in a seminar by one of the foremost proponents in the field. Students read some of the professor's major published texts as well as parts of works in progress and discuss them within the context of modern literary theory. Seminar paper required. Mr. Jauss

C207. The Classical Tradition: Epic. Seminar, three hours. Prerequisite: reading knowledge of Greek, Latin, or Italian. Analysis of the *Iliad,* the *Odyssey,* the *Aeneid,* the *Gerusalemme Liberata,* and *Paradise Lost* both in relation to their contemporary societies and to the literary traditions. Emphasis on how poets build on the work of their predecessors. May be concurrently scheduled with Humanities C107. Graduate students are required to prepare papers based on texts read in the original languages and may meet as a group one additional hour each week. Ms. King

C209. The Crisis of Consciousness in Modern Literature. 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 the works of Kafka, Rilke, Woolf, Sartre, and Stevens. May be concurrently scheduled with Humanities C109. Graduate students are required to prepare papers based on texts read in the original languages and to meet as a group one additional hour each week. Ms. Komar

C211. The Classical Tradition: Tragedy. 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. May be concurrently scheduled with Humanities C111. Graduate students are required to prepare papers based on texts read in the original languages and may meet as a group one additional hour each week. Ms. King

C229. Archetypal Heroes in Literature. Lecture, three hours. Prerequisite: reading knowledge of one appropriate foreign language. Survey and analysis of the function and appearance of such archetypal heroes as Achilles, Ulysses, Prometheus, Oedipus, and Orpheus in literature from antiquity to the modern period. Concurrently scheduled with Humanities C129. Graduate students are required to prepare papers based on texts read in the original language and to meet as a group one additional hour each week. Ms. King

230. Translation Workshop. Prerequisites: solid reading knowledge of at least one foreign language, consent of instructor. Open to qualified undergraduates with proper language preparation. The 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 the discretion of the participants. Mr. Heim

C239. Early Medieval Literature. Prerequisite: reading knowledge of one appropriate foreign language. A survey of the Latin and Germanic literatures from the fall of Rome to the beginning of the 12th century. May be concurrently scheduled with Humanities C139. Graduate students are required to write papers based on texts read in the original languages and may meet as a group one additional hour each week. Mr. Calder

C240. Medieval Epics. Prerequisite: reading knowledge of one appropriate foreign language. Consideration of five medieval epics *(Beowulf, El Cid, Chanson de Roland, Nibelungenlied,* and *Njalssaga),* with two objectives: first, a critical understanding of each work, and second, an understanding of the nature of epic literature. Assignments consist of an extended seminar paper and short oral reports. May be concurrently scheduled with Humanities C140. Graduate students are required to prepare papers based on texts read in the original languages. Mr. Condren

C241. The Literary Mediation of History in the Renaissance. Seminar, three hours. Prerequisite: reading knowledge of one appropriate foreign language. An analysis of the presence and the treatment of history in the rhetoric of Renaissance authors ranging from the Italian humanists to Machiavelli and Shakespeare. Other authors include Poliziano and Lorenzo de' Medici. May be concurrently scheduled with Humanities C141. Graduate students are required to prepare papers based on texts read in the original languages and may meet as a group one additional hour each week. Ms. Re

C245. Renaissance Drama. Prerequisite: reading knowledge of one appropriate foreign language. A broad introduction to the 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 C145. Graduate students are required to prepare papers based on texts read in the original languages and to meet as a group one additional hour each week. Mr. Braunmuller

C265. The French Revolution and European Literature. Seminar, three hours. Prerequisite: reading knowledge of one appropriate foreign language. Part of the UCLA French Revolution Bicentennial Program. A course in cultural criticism using plays, poetry, popular tracts, etc., to explore the context and connections of the French Revolution to European culture. Authors range from Voltaire and Rousseau to Tom Paine, Coleridge, Wordsworth, Goethe, and Kant. Concurrently scheduled with Humanities C165. Graduate students are required to prepare papers based on texts read in the original languages and may meet as a group one additional hour each week. Mr. Maniquis

C268. Romantic Autobiography. Discussion, three hours. The evolution of the autobiography from spiritual (Augustine) and secular (Cellini) sources to the transition in the 18th century which blended features of the epic poem and the quest-romance. Wordsworth's *Prelude* came to represent the best example of this mixture. Major examples of the Romantic autobiography to be studied include Rousseau's *Confessions,* Wordsworth's *Prelude,* and Goethe's *Wilhelm Meister's Apprenticeship.* Later novels that develop and extend the genre include Joyce's *Portrait of the Artist as a Young Man* and Proust's *Swann's Way.* May be concurrently scheduled with Humanities C168. Ms. Packer

C270. The Dream in English and German Romantic Literature. Lecture, three hours; discussion, one hour. Prerequisite: reading knowledge of one appropriate foreign language. A study of the use of the dream as a standard narrative technique in English and German Romantic literature. May be concurrently scheduled with Humanities C170. Graduate students may be required to prepare papers based on texts read in the original languages and to meet as a group one additional hour each week. Mr. Burwick

C271. Dramatic Theory and Criticism in German and English Romanticism. (Formerly numbered 271.) Seminar, three hours. Prerequisite: reading knowledge of German. The generic conception of drama in the critical essays of the Schlegels, Tieck, Jean Paul, Coleridge, De Quincey, and Hazlitt, with emphasis on the role of the actor and the idea of dramatic action as discussed by the critics. May be concurrently scheduled with Humanities C171. Mr. Burwick

C272. The Grotesque in Romantic Literature and Art. Prerequisite: reading knowledge of one appropriate foreign language. A study of the grotesque in the visual and verbal arts of the Romantic period; the aesthetics of tragic-comic interaction, the demonic vision, and the satirical sketches of man's abnormality and perversity. May be concurrently scheduled with Humanities C172. Graduate students are required to prepare papers based on texts read in the original languages and to meet as a group one additional hour each week. Mr. Burwick

C273. Theory and Texts of the Fantastic. Seminar, three hours. Prerequisite: reading knowledge of one appropriate foreign language. An 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 Hoffman, Nerval, James, Poe, Borges, Casares, Cortazar, Landolfi, and Calvino. May be concurrently scheduled with Humanities C173. Graduate students are required to prepare papers based on texts read in the original languages and may meet as a group one additional hour each week. Ms. Re

274. The Search for Organic Forms. Prerequisite: reading knowledge of French or German. A seminar devoted to theories of the "organic" in the 18th and 19th centuries, with special emphasis on Rousseau and Goethe. Studies of the transition made between theories of nature and theories of state.
Mr. Maniquis

C275. The 19th-Century Novel. Seminar, three hours. Prerequisite: reading knowledge of French or German. A comparative study of the 19th-century novel in England and on the continent. Novels are selected so as to allow the seminar to concentrate on a particular tradition or critical problem. May be concurrently scheduled with Humanities C175.
Mr. Lehan

C276. Fiction and History. Seminar, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. Analysis of the use of historical events, situations, and characters in literary works of the Renaissance and/or the modern period. Texts and individual assignments range from Renaissance historical narratives (the Italian humanists, Machiavelli) to 19th- and 20th-century novels by authors such as Stendahl, Verga, Tomasi di Lampedusa, Carpentier, and Kundera. Use of fictional methods by historians. Emphasis on how aesthetic, ideological, and political factors influence the authors' choice and use of historical material. May be concurrently scheduled with Humanities C176. Graduate students are required to prepare papers based on texts read in the original languages. Mr. Pasinetti, Ms. Re

C278. Darwinism and Literature. Seminar, three hours. Prerequisites: graduate standing or consent of instructor, reading knowledge of one appropriate foreign language. The impact of Darwin's theories on European and American literature. While texts include major works in the development of naturalism, such as novels by Zola, Hardy, Crane, or Dreiser and plays by Strindberg and Ibsen, the course moves forward into the continuing influence of other "determinist" and behaviorally oriented theories in works by authors such as Mann, Sartre, Camus, Stevens, and Skinner. May be concurrently scheduled with Humanities C178. Graduate students are required to prepare papers based on texts read in the original languages and may meet as a group one additional hour each week. Mr. Shideler

C280. The Symbolist Tradition in Poetry. Prerequisite: reading knowledge of either French or German. A study of the symbolist tradition in 19th- and 20th-century English, French, and German poetry. May be concurrently scheduled with Humanities C180. Graduate students are required to prepare papers based on texts read in the original languages and may meet as a group one additional hour each week.
Mr. Shideler

C281. Poetry and Poetics of the Post-Symbolist Period. Prerequisite: reading knowledge of French or German. A study of some of the dominant poetic trends and figures in American and European poetry in the first half of the 20th century, including such surrealists as Apollinaire and Breton, imagists, and major individual poets such as Pound, Eliot, Valery, Rilke, George, and Stevens. May be concurrently scheduled with Humanities C181. Graduate students are required to prepare papers based on texts read in the original languages and may meet as a group one additional hour each week.
Ms. Komar, Mr. Shideler

C283. Novel, Crime, Ritual. Discussion, three hours. Prerequisite: reading knowledge of one appropriate foreign language. An investigation of a range of novels dealing with ritual and crime and their relation to the novel form. Readings include such texts as de Ayala's *Belarmino and Apolonio,* Singer's *The Magician of Lublin,* selected stories from Babel's *Red Cavalry,* a Dickens' novel, and Laclos' *Liasions Dangereuses.* Concurrently scheduled with Humanities C183. Graduate students are required to prepare papers based on texts read in the original language.
Mr. Baumgarten

C284. The Alternate Tradition: In Search of a Female Voice in Contemporary Literature. 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 C184. Graduate students are required to prepare papers based on texts read in the original languages whenever possible. Ms. King, Ms. Komar

C285. The Modern Continental Novel. Lecture, 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. Authors such as Gide, Proust, Mann, Joyce, Nabokov, and Grass are used to focus on the development of themes such as primitivism vs. authority, change vs. stability, and the self-conscious narrative. Concurrently scheduled with Humanities C185. Graduate students are required to prepare papers based on texts read in the original languages and to meet as a group one additional hour each week. Mr. Lehan

292. The Psychological Novel. Prerequisites: major in literature, reading knowledge of French. A comparative study of French and English novels which both precede and follow the development of psychoanalysis. Selected readings of Freud, in addition to the required fiction. Mr. Hutter

C297. The Mystery Novel. Prerequisite: reading knowledge of French. A study of mystery and detective fiction in England, France, and the United States. Development of the origin, form, and historical significance of mystery fiction through close readings of selected works. May be concurrently scheduled with Humanities C117. Graduate students are required to prepare papers based on texts read in the original languages and to meet as a group one additional hour each week. Mr. Hutter

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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 the Teaching of 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 the 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)

4731 Boelter Hall, (213) 825-7482

Professors

Jack W. Carlyle, Ph.D. *(Computer Science)*
Edward C. Carterette, Ph.D. *(Psychology)*
Joseph J. DiStefano III, Ph.D. *(Computer Science and Medicine), Chair*
John Hanley, M.D., *in Residence (Psychiatry)*
Stephen E. Jacobsen, Ph.D. *(Electrical Engineering)*
Peter Ladefoged, Ph.D. *(Linguistics)*
Jacques J. Vidal, Ph.D. *(Computer Science)*
Donald M. Wiberg, Ph.D. *(Electrical Engineering)*

Associate Professor

Peter M. Narins, Ph.D. *(Biology)*

Assistant Professor

Elliot M. Landaw, M.D., Ph.D. *(Biomathematics)*

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 three options for in-depth studies: life sciences, behavioral sciences, or engineering and applied mathematical sciences. 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

Pre-Cybernetics Major

You may apply for the pre-cybernetics 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. Transfer students must meet the same academic requirements, based on all courses transferred from another institution which satisfy premajor requirements.

Preparation for the Major

Required: A minimum of 72 units (18 full courses), including Chemistry 11A, 11B/11BL, 11C/11CL, 21, 23; Biology 5, 7; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 6A, 6B, and 6C, or 8A, 8B, and 8C; Psychology 10; Program in Computing 10A. Additional recommended course lists are available in the program office and/or the College Counseling Service in the College of Letters and Science.

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 completed 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) Mathematics 152A and 152B, or (b) Mathematics 150A or Electrical Engineering 131A and either Mathematics 150B or 152B, or (c) Public Health 101A and 101B.

(3) Two courses in signals and control systems (one from each group): (a) Computer Science 170 or 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, or engineering and applied mathematics. 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, linguistics, and economics. 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 Computer Science 141 are required, in addition to six courses selected from an approved list. You will 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 the direction of a faculty sponsor on the Cybernetics Interdepartmental Committee. P/NP grading.

Diversified Liberal Arts (Interdepartmental)

A316 Murphy Hall, (213) 825-1965

Undergraduate Certificate Program

The Diversified Liberal Arts Program (DLAP) is not a major, but a special certificate program through which you may receive credit toward a credential to teach in California elementary schools. To earn the credential, you must complete the Teacher Credential Program in the Graduate School of Education. In addition, you must either earn a satisfactory score on the Commons Section of the National Teachers Examination or complete the DLAP in the College of Letters and Science.

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) English, (2) mathematics and the physical and/or life sciences, (3) social sciences, (4) humanities, fine arts, and foreign language.

Requirements for one of these areas will normally be satisfied by courses taken for your major; in addition, you must complete seven courses (28 units) in each of two other areas and eight courses (32 units) in a fourth area. A grade of C or better must be earned in all courses specifically required for the program (i.e., English 120A, Mathematics 38A, 38B, 104, History 7A, 7B). A C – or a Passed grade is not acceptable in these courses. A minimum C (2.0) grade-point average is required in each of the four areas.

Courses in divisions outside the major, which are required as preparation for or as part of the major, may be applied toward the area course requirements. However, no course may be applied toward more than one area. You are expected to satisfy the general education requirements of the College of Letters and Science; courses used to satisfy these requirements may also be applied toward the Diversified Liberal Arts Program.

If you plan to pursue the program, you should begin to take courses in your freshman year that will fulfill these requirements. 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 will certify 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, contact a counselor in the College of Letters and Science Counseling Service, A316 Murphy Hall (825-3382). For information regarding the Teacher Credential Program in the Graduate School of Education, see a counselor in 201 Moore Hall (825-8326).

Area 1. English

Composition and Grammar (Required): Two courses: English 120A plus one course in satisfaction of the English Composition requirement. If you wish to complete the Area 1 requirements with additional composition and grammar, the courses must be selected from English 130, Linguistics 1, 100.

Literature (Required): One course from English 10A, 10B, 10C, 70, 75, 80, 85, 90, 112, 113, Humanities 1A, 1B, 1C, or any other upper division courses in English literature for which you have satisfied the prerequisites. You may complete more than one course from this list to satisfy the Area 1 course requirement.

Speech (Required): One course from Communication Studies 10, 100, Speech 1, 2, 107. You may complete more than one course from this list to fulfill the Area 1 course requirement.

Area 2. Mathematics and the Physical or Life Sciences

Mathematics (Required): Mathematics 38A, 38B, 104. Substitutions of other courses in mathematics may be made with the written consent of the College of Letters and Science.

Physical or Life Sciences (Required): A minimum of 12 units in physical sciences and/or life sciences, apart from mathematics.

The remaining courses for Area 2 may be selected from any courses in the physical or life sciences that satisfy the general education requirements (mathematics courses may be included).

Area 3. Social Sciences

History (Required): One course from History 7A, 7B. Other courses which may satisfy the Area 3 requirement are those listed as fulfilling the social science general education requirements.

Area 4. Humanities, Fine Arts, and Foreign Language

Although there are no specific course requirements, courses applied toward this area must be selected from those courses listed as fulfilling the humanities general education requirements. The following may also be applied toward Area 4: any courses in foreign language; Dance 1A, 1B, 1C; English 4, 30; Music 1A, 1B, 113A, 113B; Theater 118A, 118B, 119A.

Earth and Space Sciences

3806 Geology, (213) 825-3880

Professors

Orson L. Anderson, Ph.D. *(Geophysics)*
Peter Bird, Ph.D. *(Geophysics and Geology)*
Arthur L. Boettcher, Ph.D. *(Geochemistry and Geophysics)*
Donald Carlisle, Ph.D. *(Geology and Mineral Resources)*
John M. Christie, Ph.D. *(Geology)*
Paul J. Coleman, Jr., Ph.D. *(Geophysics and Space Physics)*
Donald J. DePaolo, Ph.D. *(Geochemistry and Geology)*
Wayne A. Dollase, Ph.D. *(Geology), Vice Chair*
W. Gary Ernst, Ph.D. *(Geology and Geophysics)*
Clarence A. Hall, Jr., Ph.D. *(Geology)*
Raymond V. Ingersoll, Ph.D. *(Geology)*
David D. Jackson, Ph.D. *(Geophysics), Vice Chair*
Isaac R. Kaplan, Ph.D. *(Geology and Geochemistry), Vice Chair*
William M. Kaula, M.S. *(Geophysics)*
Margaret G. Kivelson, Ph.D. *(Space Physics), Chair*
Robert L. McPherron, Ph.D. *(Space Physics and Geophysics)*
Clemens A. Nelson, Ph.D. *(Geology)*
Gerhard Oertel, Dr.rer.nat. *(Geology)*
John L. Rosenfeld, Ph.D. *(Geology)*
Christopher T. Russell, Ph.D. *(Space Physics)*
J. William Schopf, Ph.D. *(Paleobiology)*
Gerald Schubert, Ph.D. *(Geophysics and Planetary Physics)*
Ronald L. Shreve, Ph.D. *(Geology and Geophysics)*
John T. Wasson, Ph.D. *(Geochemistry and Chemistry)*
Robert E. Holzer, Ph.D., *Emeritus*
Helen Tappan Loeblich, Ph.D., *Emeritus*

Associate Professors

Paul M. Davis, Ph.D. *(Geophysics)*
Michael J. DeNiro, Ph.D. *(Geochemistry)*
William I. Newman, Ph.D. *(Planetary Physics)*
Walter E. Reed, Ph.D. *(Geology)*

Assistant Professor

Mark D. Barton, Ph.D. *(Geochemistry and Geology)*

Lecturers

Lawrence C. Bonham, Ph.D. *(Petroleum Geology)*
Robert E. Jones, B.S. *(Geology)*
Paul M. Merifield, Ph.D. *(Environmental Geology)*
Floyd F. Sabins, Jr., Ph.D. *(Geology)*
Gerhard Stummer, B.S. *(Geology)*
Takeo Susuki, D.Sc. *(Geology)*

Scope and Objectives

The disciplines of geology, geochemistry, and geophysics are concerned with the structure and evolution of the solar system, the 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, the earth's interior, planetary physics, space plasmas, and economic geology.

The variety of techniques applied lead to several specializations within the three main disciplines. Students completing their studies with a B.S. or M.S. degree usually are employed by industry. The greatest number go to oil companies, but many are also employed in other types of mineral exploitation, construction, and environment-related activities.

Bachelor of Science in Geology

Engineering Geology Specialty

Preparation for the Major: Earth and Space Sciences 1 or 1H, 51A, 51B, 51C, 61; Biology 2; Chemistry 11A, 11B/11BL; Mathematics 31A, 31B, 32A, 33A; Physics 8A, 8B/8BL, 8C/8CL; 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: Earth and Space Sciences 103A, 103B, 111, 112, 121A-121B, 135, M139; Civil Engineering 108, 184A, 185A, 185B, 185L; one course from Earth and Space Sciences 136C, 137, 141, 150, Geography 100, Civil Engineering 184B, 184D.

Geochemistry Specialty

Preparation for the Major: Earth and Space Sciences 1 or 1H, 51A, 51B, 51C, 61; Biology 2; Chemistry 11A, 11B/11BL, 11C/11CL, 21; Mathematics 31A, 31B, 32A, 33A (32B, 33B recommended); Physics 8A, 8B/8BL, 8C/8CL (8D recommended); 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: Earth and Space Sciences 103A, 103B, 111, 130, 131; Chemistry 110A, 110B, 114 (or Chemistry 23 and 25 or 184 or Earth and Space Sciences 132); three courses from Chemistry 23, Earth and Space Sciences 112, 119, 121A-121B, 128A, 128B; two earth and space sciences or chemistry courses with consent of adviser.

Geology Specialty

Preparation for the Major: Earth and Space Sciences 1 or 1H, 2, 51A, 51B, 51C, 61; Biology 2; Chemistry 11A, 11B/11BL, 11C; Mathematics 31A, 31B, 32A; Physics 8A, 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: Earth and Space Sciences 103A, 103B, 103C, 111, 112, 115, 121A-121B, 135, and four additional courses from 114, 119, 122, 128A, 128B, 130, 131, 132, 133, 136C, 137, M139, 141, 144, 150.

Nonrenewable Natural Resources Specialty

Preparation for the Major: Earth and Space Sciences 1 or 1H, 2, 51A, 51B, 51C, 61; Biology 2; Chemistry 11A, 11B/11BL, 11C; Mathematics 31A, 31B, 32A; Physics 8A, 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: Earth and Space Sciences 103A, 103B, 103C, 111, 112, 121A-121B, 128A or 128B, 135, 136C, 137, and two additional courses from 128A or 128B, 138, M139, 141, 150.

Paleobiology Specialty

Preparation for the Major: Earth and Space Sciences 1 or 1H, 2, 51A, 51B, 51C, 61; Biology 5, 5L, 6; Chemistry 11A, 11B/11BL, 11C/11CL, 21, 23; Mathematics 31A, 31B, and 32A, or 3A, 3B, and 32A; 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: Earth and Space Sciences 103A, 103B, 111, 112, 115, 132; seven courses from Chemistry 25, Public Health 101A, 101B, Biology 100, 101, 102, 103, 105, 110, 111, 117, 120, 122, 123, 164, 165, Earth and Space Sciences M118, 119, 121A, 121B, 133, 141, 144.

Bachelor of Science in Geophysics

Applied Geophysics Specialty

Preparation for the Major: Earth and Space Sciences 1 or 1H, 51A, 51B, 51C, 61; Chemistry 11A; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A, 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: Earth and Space Sciences 111, 112, 122, 136A, 136B, 136C; Physics 105A, 105B, 110A, 110B, 114; three courses from Earth and Space Sciences 101, 103A, 103B, 131, 137, M139, M154, 205, 265, Mathematics 140A, 140B, 140C, 152A, 152B, Physics 112, 115A, 116, 131, 132, or other courses with consent of adviser.

Geophysics and Space Physics Specialty

Preparation for the Major: Earth and Space Sciences 1 or 1H, 9; Chemistry 11A, 11B/11BL, 11C; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A, 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: Earth and Space Sciences 122, M140, M154; Physics 105A, 105B, 110A, 110B, 112; Physics 131 or Mathematics 145; three courses from Earth and Space Sciences 101, 119, 131, 136A, 136B, 150, 205, 233, Atmospheric Sciences 200B, one of Mathematics 140A, 140B, or 140C; three science electives with consent of adviser.

Students planning to do graduate work in specialized careers in earth science 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 250.

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 Program 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 quarters (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 quarter. 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. 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 biogeochemistry, crystal chemistry, experimental petrology, isotopic studies of stable and radioactive elements, marine geochemistry, meteorite research, planetology, and lunar geochemistry. The program in geology offers study in geomorphology, glaciology, micropaleontology, mineral deposits, mineralogy, nonrenewable natural resources, organic geochemistry, paleobiology, 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) Advanced 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, 51C, 130, 131, 234A or 234B, and Chemistry 110A, as well as more advanced courses in particular fields, and some familiarity with the methods of field geology. You must take course 235A, 235B, or 235C each quarter.

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 will prepare and administer 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 111 during your first year in residence. Depending on performance in course 195G, you may subsequently be required to take either 111 or 61 and 111.

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.

Specialization in Nonrenewable Natural Resources

The objective of this program is to prepare students for professional careers in the geology of metallic, nonmetallic, and fossil energy resources. Individual courses of study are arranged in consultation with the committee for graduate study in nonrenewable natural resources. Relevant subjects include mineral deposits, mining and exploration geology, geophysical exploration, petroleum and coal geology, depositional systems, and basin analysis. Particularly relevant courses include Earth and Space Sciences 128A, 128B, 130, 131, 132, 136A, 136B, 136C, 137, 138, 144, 150, 227, 241, 254, 258, and 268, as well as selected courses in chemistry, engineering, the social sciences, law, and management.

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. Graduate Record Examination (GRE) Advanced Test scores are preferable 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 from the 500 series and courses graded on an S/U basis may not be applied toward the minimum requirement; 500-series courses also may not be applied toward any other degree requirements.

Thesis Plan

This plan is an optional alternative to the comprehensive examination plan. At least two members of the thesis committee must be from the department.

Comprehensive Examination Plan

The examination is the comprehensive part of the written qualifying examination taken by doctoral students, but the passing level for the master's degree is less rigorous. The examination is on the level of the introductory courses (200A, 200B, 200C). It lasts six hours and is given every June and December. It must be first attempted by the end of the fourth quarter of enrollment. If failed, it must be retaken the next time it is given. Permission to take it a third time may be granted by the graduate adviser in extenuating circumstances.

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 in petroleum exploration. Undergraduate preparation for admission is equivalent to a B.S. in Geophysics (applied geophysics specialty), including a common mastery of the subject matter of Earth and Space Sciences 111, 112, 122, 136A, 136B, 136C, 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.

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 quarter 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, 51C, 130, 131, 234A or 234B, and Chemistry 110A, as well as more advanced courses in particular fields, and some familiarity with the methods of field geology. You must take course 235A, 235B, or 235C each quarter.

Qualifying Examinations

The departmental written qualifying examination must be taken before the end of the first year of the doctoral program if you have a master's degree; otherwise, it must be taken before the end of the 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 111 during your first year in residence. Depending on performance in course 195G, you may subsequently be required to take either 111 or 61 and 111. You also are expected to complete at least the minimum number of courses which are required for the M.S. in Geology and must take a geology seminar each year.

Qualifying Examinations

The departmental written qualifying examination must be taken before the end of the first year of the doctoral program if you have a master's degree; otherwise, it must be taken before the end of the 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 discretion 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

There are no specific requirements.

Qualifying Examinations

In this program the written qualifying examination is divided into three stages: (1) the fundamental physics examinations, (2) the comprehensive examination, and (3) the field examination. Examinations 1 and 2 must be passed before undertaking examination 3. Students not passing these examinations within three years, two years, and four years, respectively, after entering the program are subject to dismissal. Contact the department for details on each of the three stages.

You must nominate the doctoral committee and arrange a time for the University Oral Qualifying Examination as soon as possible after passing the field 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 five 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; the nature and interpretation of geologic evidence; study of geologic processes; historical aspects of geology.
Mr. DeNiro, Mr. Farmer, Mr. Nelson (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 science 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. Rosenfeld (F)

2. Earth History. Lecture, three hours; laboratory, three hours; fieldwork. Prerequisite: course 1 or 1H. Methods of historical science; consideration of special problems relating to the physical and biological evolution of the earth from earliest time to the present. Mr. Ingersoll, Mr. Nelson (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. Reed (Sp)

8. Earthquakes. Lecture, three hours. The causes and effects of earthquakes, with special emphasis on the problems of living with earthquakes in Southern California. Topics include the 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. Mr. Coleman (Sp)

9. Origin and Evolution of the Solar System. Lecture, three hours. Properties of the 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 the earliest history of the solar system. Chemical models of the solar nebula. Space exploration and its planning. Mr. Russell (W)

10. Geology of California. Lecture, two hours; laboratory, two hours (alternate weeks); 10 field days. Prerequisite: course 1 or 1H. General survey of major geologic features and geologic history of California; its relationship to large-scale crustal motions of Western North America and the Eastern Pacific. Environmental geology; study of geologic hazards such as earthquakes, landslides; aspects of urban geology.
Mr. Carlisle

15. Introduction to Oceanography. Lecture, three hours; discussion, one hour. Not open for credit to students with credit for Biology 25. Processes responsible for the chemical composition of the ocean and current circulation patterns. Seafloor spreading and morphology of the ocean floor. Biological productivity, marine ecology, and minerals forming in the ocean. Mr. Farmer, Mr. Kaplan (F,Sp)

20. Natural History of Southern California. Lecture, one hour; laboratory, three hours; seven 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. Mr. Hall

51A. Mineralogy-Petrology. 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 the main rock-forming minerals. Laboratory study of crystallography and identification of minerals in igneous, sedimentary, and metamorphic rocks. Mr. Dollase (F)

51B. Mineralogy-Petrology. Lecture, three hours; laboratory, six hours. Prerequisites: course 51A and an introductory course in high school or college physics, or consent of instructor. Principles of optical crystallography. Utilization of optical properties to identify nonopaque minerals in immersion media and in thin section. Presentation of sufficient theory to understand the operations performed in the laboratory.
Mr. Dollase (W)

51C. Mineralogy-Petrology. Lecture, three hours; laboratory, six hours. Prerequisite: course 51B. Composition, occurrence, and origin of igneous, sedimentary, and metamorphic rocks; megascopic and microscopic study of rocks. Mr. Barton (Sp)

61. Elements of Field Geology. (Formerly numbered 111A.) 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 51C. 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. Bird, Mr. Shreve (F,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 the earth; physical and biological evolution. Mr. Carlisle (W)

101. Introduction to Geophysics and Space Physics. Lecture, three hours. Prerequisites: Physics 8A, 8B, 8C, Mathematics 31A, 31B, 32A. Designed primarily for students majoring in a physical science or mathematics. A survey of geophysics, the physics of the planets, their atmospheres, and the interplanetary medium, with emphasis on topics of current research interest. Mr. Schubert (Sp)

103A. Igneous Petrology. Lecture, two to three hours; laboratory, six hours; field trips. Prerequisites: courses 51A, 51B, 51C, 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 the earth. Introduction to thermodynamics as applied to petrology. The formation of magma, its movement, eruption, crystallization, and chemical evolution. Petrologic structure of the crust and mantle and its relation to seismology. Overview of the petrological and chemical evolution of the earth, moon, and other planets from their origin to the present. Mr. Ernst (F)

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 the characteristics of sedimentary particles and the 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 (W)

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 the application of physical and chemical principles. Mr. Rosenfeld (Sp)

105. Nonrenewable Resources and Society. Lecture, three hours; discussion, two hours. Prerequisite: course 1 or 1H or consent of instructor. Topics include geological and economic characteristics of mineral resources, exploration, recovery, risks, exhaustibility, mineral law, land-use conflicts, taxation, and environmental concerns. Mr. Carlisle (F)

111. Stratigraphic and Field Geology (6 units). (Formerly numbered 111B.) 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, Mr. Reed (W)

111G. Field Geology (2 to 4 units). (Formerly numbered 111AG-111BG.) Prerequisite: graduate standing or consent of instructor. Geologic mapping, principles of stratigraphy, structural geology, and map interpretation.

112. Structural Geology. Lecture, three hours; laboratory, six hours. Prerequisite: course 1 or consent of instructor. Recommended: course 51C. 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. Christie (F)

114. Introduction to Stress and Deformation. Lecture, three hours; discussion, three hours. Prerequisite: course 112 or consent of instructor. An introduction to the quantitative treatment of strain in geological bodies, the stresses that cause them, and their rheological behavior. Stress and strain fields in folds, near faults, and in and near intruding magma bodies. Mr. Oertel

115. Principles of Paleontology. Lecture, three hours; laboratory, two hours; field trips. Principles governing the evolution and distribution of fossils; the geologic history of plants, invertebrates, and vertebrates. Mr. Farmer (F,Sp)

M118. Paleobotany. (Same as Biology M118.) Lecture, three hours; laboratory, three hours. Prerequisite: one course in biological sciences or consent of instructor. Recommended: course 2 or equivalent. Survey of morphology, paleobiology, and evolution of vascular and nonvascular plants during geologic time, with particular emphasis on major evolutionary events. Mr. Schopf

119. Continental Drift and Plate Tectonics. Lecture, three hours. Prerequisites: upper division standing and an introductory course in geology (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 the nature of the ocean floor. Magnetic stratigraphy. Seafloor spreading. The plate tectonic model and its driving mechanisms. Tectonic, igneous, and metamorphic processes at plate boundaries. Mr. Christie (W)

120. Rubey Colloquium: Major Advances in Earth Science. (Formerly numbered 120A, 120B.) 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. (W)

121A-121B. Advanced Field Geology (6 units each). Fieldwork, eight weeks. Prerequisites: courses 61, 103B, 111. Courses 121A and 121B must be taken concurrently. 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. Ernst, Mr. Nelson (Sum)

122. Physics of the Earth. Lecture, three hours; discussion, one hour. Prerequisites: Physics 8A, 8B, 8C, Mathematics 31A, 31B, and 32A, or consent of instructor. Application of physics to the structure and evolution of the solid earth. Seismology, convection and heat flow, gravity, geomagnetism, rock magnetism, and the relation of these topics to plate tectonics and other problems of current geophysical interest. Mr. Anderson (W)

128A. Mineral Deposits. Lecture, three hours; laboratory, three hours. Prerequisite: course 51C. Origin and occurrence of important mineral deposits, with emphasis on chalcophile elements and sulfide ores. (Alternates yearly with course 128B.) Mr. Barton (Sp)

128B. Mineral Deposits. Lecture, three hours; laboratory, three hours. Prerequisite: course 51C. Origin and occurrence of important mineral deposits, with emphasis on siderophile and lithophile elements and their minerals. (Alternates yearly with course 128A.) Mr. Barton, Mr. Carlisle

130. Isotope Geochemistry. Lecture, three hours; discussion, one hour. Prerequisites: junior or senior standing in physical or biological science, consent of instructor. Theoretical aspects of geochronology, particularly carbon 14 dating. Application of radioisotopes to the hydrologic cycle and to atmospheric circulation. Stable isotope distribution in nature. Exchange mechanisms and their applications to paleotemperatures, hydrology, mineral formation, and origin of biological deposits. (Alternates yearly with course 131.) Mr. Kaplan

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 the earth, oceans, and atmosphere; chemistry of the earth's interior, phase transformations at high pressure and temperature. (Alternates yearly with course 130.) Mr. Boettcher (Sp)

132. Principles of Biogeochemistry. Lecture, three hours; laboratory, four hours. Prerequisite: Chemistry 21. Organic substances as evidence for origin and biochemical evolution of life; origin and development of petroleum; comparative properties of recent and ancient sediments and application of molecular stratigraphy to modern and ancient sediments. Mr. DeNiro (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. Mr. Ernst, Mr. Nelson (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 (F)

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. Mr. Davis (F)

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. Mr. Jackson (W)

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 (weeklong field trip). Mr. Jackson

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. Bonham (F)

138. Exploration and Mining Geology. Lecture, three hours; discussion, two hours; laboratory, four hours; field trip. Prerequisite: course 51C. Geological principles applied to the exploration for and evaluation of mineral deposits; geological techniques at operating mines; mine economics; exploration geology and mineral resource economics. Mr. Carlisle (F)

M139. Engineering and Environmental Geology. (Same as Architecture and Urban Planning M195.) Lecture, two and one-half hours. Prerequisite: course 1 or 100. Recommended: course 111A. 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. Merifield (W)

M140. Introduction to Fluid Dynamics. (Formerly numbered M149.) (Same as Atmospheric Sciences M140.) Lecture, three hours; discussion, one hour. Corequisite: Physics 131. Equations of fluid motion. Circulation theorems. Irrotational flow. Vortex motion. Surface and internal gravity waves. Rotating frame. Viscous flow. Mr. Schubert, Mr. Wurtele (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)

144. Marine Geology. Lecture, three hours; field trips. Prerequisite: senior standing. Recent marine sedimentology and geochemistry; oceanography morphology, structure and geologic history of the ocean basins.

150. Remote Sensing for Earth Sciences. Lecture, three hours. Open to upper division and graduate students. Remote sensing related to the development of natural resources. Characteristics of the 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)

M154. Solar Terrestrial Physics. (Same as Atmospheric Sciences 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. The solar wind. The magnetospheres and the ionospheres of the earth and other planets. Geomagnetic phenomena. Aurora and airglow. Mr. Venkateswaren (F)

M180. Nonlinear Waves. (Same as Atmospheric Sciences M180.) Lecture, three hours; discussion, one hour. Prerequisite: course M140 or consent of instructor. Basic concepts and examples of nonlinear wave behavior: limit cycles, attractors, bifurcations, relaxation, subharmonics, solitons, periodic versus chaotic behavior, Lorenz masks and Rossler bands. Mr. Newman

190. Earth and Space Sciences Colloquium (1 unit). Lecture, 90 minutes. Prerequisite: consent of instructor. Current topics of research in the department. May be repeated for credit. P/NP grading. Mr. Farmer (W)

195G. Field Geology for Graduate Students (2 units). Field mapping; preparation of a geologic report. P/NP grading. Mr. Nelson (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 the student's 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; the core and geomagnetism; lunar and planetary interiors. Mr. Davis (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 (W)

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 the earth, magnetospheric phenomena. Mr. McPherron (Sp)

201. Classical Mechanics. Lecture, three hours. Kinematics, variational principles and Lagrange's equations, rotational dynamics. Hamilton equations of motion, linear and nonlinear perturbation theory, applications to the solar system. Mr. Newman (Sp, alternate years)

202. Continuum Mechanics. Lecture, three hours. Kinematics and dynamics of continuous media. Properties of stress, strain, and rate-of-strain tensors. Conservation laws. Rotating systems, boundary layers, and dynamical similarity. Mr. Schubert (F)

203. Electrodynamics. Prerequisite: upper division electromagnetic theory course or consent of instructor. Maxwell's equations and boundary conditions; momentum, angular momentum, and energy of electromagnetic fields; plane electromagnetic and magnetohydrodynamic waves; wave guides, simple radiating systems, and diffraction. Mr. Coleman (W)

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. Mr. Newman

205. Inverse Theory and Data Interpretation. Lecture, three hours. Prerequisites: Mathematics 115A and 150A-150B-150C, or consent of instructor. The inverse modeling problem — determination of model parameters consistent with experimental data, considering the effects of random errors and nonuniqueness. Emphasis on linear and quasi-linear problems; nonlinear problems also discussed. Tools used include matrix theory, quadratic forms, orthogonal rotations, statistics, the principal axis transformation for rectangular matrices, Backus-Gilbert resolving kernels, and Lagrange multipliers. Examples taken from a broad range of physical sciences. Mr. Jackson (F)

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 the 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

210. Advanced Paleontology. Lecture, two hours; laboratory, six hours; field trips. Prerequisite: course 115 or advanced standing in biological science. Lectures emphasize evolutionary, ecological, stratigraphic, and taxonomic aspects of fossil invertebrates. Fieldwork and laboratory are devoted to a research project and written report. Content varies from year to year. May be repeated for credit.

M211. Hydrodynamic Instabilities and Turbulence. (Same as Mathematics M263.) Lecture, three hours. An introduction to the theories of hydrodynamic instability and the nonstatistical description of turbulence; stability bounds by the energy method; linear theory of instability; finite amplitude theories of post-instability flows; bounds on properties of turbulent flows by variational techniques. (Alternate years)

212. Paleoecology. Lecture, two hours; laboratory, six hours; field trips. Prerequisite: course 115 or advanced standing in biological science. How and where animals and plants lived in the past; study of habits and habitats of animals, changes in habits and habitats, and the distribution of animals through time and space. Content varies from year to year. May be repeated for credit. Mr. Hall

M213. Archaeological and Paleontological Applications of Stable Isotopes (6 units). (Same as Archaeology M213.) Lecture, three hours. Application of natural variations in stable isotope ratios in fossilized biological and nonbiological materials to a variety of archaeological and paleontological problems. Topics include the basis for isotope distributions in archaeological and paleontological materials; analytical procedures for measuring isotope ratios; dietary reconstruction; paleoclimatic analysis; determination of provenience of archaeological materials; analysis of aspects of the biochemistry and physiology of fossil animals. Mr. DeNiro (F)

214. Geophysical Fluid Dynamics. Lecture, three hours. Prerequisite: consent of instructor. Dynamics of stationary and transient motions in rotating systems; Ekman boundary layer theory; inertial oscillations; B-plane approximation; Rossby waves; theory of thermally induced motions; applications to flow phenomena in planetary atmospheres, in the oceans, and in the earth's core. (Sp, alternate years)

215. Paleobiology of Plant Microorganisms. Lecture, two hours; laboratory, six hours. Prerequisite: course 115 or advanced standing in biological science. Survey of morphology, evolution, and diversification, environmental interactions, and stratigraphic value of bacteria, algae, and fungi, with emphasis on dinoflagellates and acritarchs, chrysomonads, silicoflagellates, ebridians and diatoms, discoasters, and coccolithophorids. (Alternates yearly with course 216.) (W)

216. Micropaleontology. Lecture, two hours; laboratory, six hours. Prerequisite: course 115 or advanced standing in biological science. Survey of microfossils of the animal kingdom, their systematics, morphology, ecology, evolutionary history, and stratigraphic use, with emphasis on foraminiferans, radiolarians, chitinozoans, tintinnids, ostracods, scolecodonts, and conodonts. (Alternates yearly with course 215.)

219. Planetary and Orbital Dynamics. Solar system dynamical evolution; figure and gravitational field of a planet; satellite orbits; earth-moon system evolution; rotational dynamics, including effects of nonrigidity and energy dissipation. Mr. Kaula

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. Schopf (W)

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. Elastic Wave Propagation I. (Same as Mechanical, Aerospace, and Nuclear Engineering M257A.) Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 158A or 166A or consent of instructor. Review of elasticity theory; elastic waves in unbounded media; reflection and refraction of plane elastic waves; surface waves and guided waves in multilayered media; waves generated by concentrated loads; radiation from dislocations; attenuation; representative applications in engineering and seismology. Mr. Mal (F)

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 the vibration of finite elastic bodies; dynamic theories of fracture; representative applications in engineering and seismology. Mr. Knopoff (W)

225A. Physics and Chemistry of Planetary Interiors I. Chemical compositions of the 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, Mr. Boettcher

225B. Physics and Chemistry of Planetary Interiors II. Lateral inhomogeneities in the 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

226. Theoretical Geomorphology. Lecture, three hours. Prerequisites: Mathematics 33A and one course in elementary probability theory, or consent of instructor. Analysis of the intellectual foundations and objectives of modern geomorphology, illuminated by selected past and present theories of river profiles, slope processes, and channel networks. Reading and discussion of original sources. Preparation of term paper.
Mr. Shreve (Sp, approximately every third year)

227. Resource Evaluation Field Methods. Lecture, one hour; laboratory, three hours; field trips. Prerequisites: courses 111B and 128A or 128B or 138, or consent of instructor. Techniques of mapping, sampling, appropriate laboratory studies, economic or socioeconomic evaluation of a variety of nonrenewable natural sources; preparation of reports. Mr. Carlisle

228. Planetary Magnetism. Prerequisite: consent of instructor. Description and analysis of the magnetic fields of the earth and planets. Origin and history of the earth's magnetic field: core dynamics, dynamo theory, paleomagnetism.

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

230. X-Ray Crystallography. Lecture, three hours; laboratory, three hours. Prerequisite: course 51C. 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.) Mr. Dollase (Sp)

231. Crystal Chemistry and Structure of Minerals. Lecture, three hours; laboratory, three hours. Prerequisite: course 51C. Bonding, interatomic configurations, polymorphic transformations, isotypism, thermal and positional disorder; survey of the structures of the common minerals, and relation of physical and chemical properties to crystal structure. (Alternates yearly with course 230.) Mr. Dollase

233. Mineral Physics and Equation of State. Lecture, three hours. Prerequisite: consent of instructor. Interrelationship of the 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. Mr. Anderson

234A. Thermodynamic and Geometric Principles of Phase Equilibria. Prerequisites: course 51C 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 the fugacity of oxygen, water, and other volatile components as variable parameters. Mr. Boettcher (W)

234B. Petrologic Phase Equilibria. Lecture, three hours; discussion, three hours. Prerequisites: course 51C 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). Mr. Ernst

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.

236. Igneous Petrology. (Formerly numbered 236A, 236B.) Lecture, two hours; laboratory, six hours. Prerequisites: an introductory course in petrology and petrography, knowledge of differential equations. Understanding the genesis of igneous rocks based on geochemical, tectonophysical, and other geological evidence and principles. Mr. DePaolo (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. Mr. Barton (F)

238. Metamorphic Petrology. Lecture, three hours; laboratory, six hours. Prerequisite: an introductory course in petrology and petrography or consent of instructor. Interpretation of metamorphic rocks in the 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. Mr. Rosenfeld (F)

239. Structural Petrology of Deformed Rocks. Discussion, three hours; laboratory, three hours. Prerequisites: courses 51C, 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 the interpretation of microfabrics. (Alternates yearly with course 249.) Mr. Christie

240. Space Plasma Physics. Lecture, three hours. Prerequisite: course 203 or Physics 210A. The 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. Russell (F)

241. Sedimentary Petrology. Lecture, two hours; laboratory, six hours. Prerequisites: courses 51C, 103B. Texture, composition, structure, and modes or origin of the sedimentary rocks. Content varies from year to year. Mr. Reed (F)

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. Mr. Ingersoll (Sp)

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 the 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

246. Stress in the Lithosphere. Lecture, three hours. Prerequisite: course 202 or 245A or Civil Engineering 108 or consent of instructor. Overcoring, 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. Mr. Bird (Sp)

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 (Sp, every third year)

248. Advanced Structural Geology. Lecture, three hours; discussion, two hours. Prerequisites: courses 111A, 111B. Principles governing fracture, folding, and flow of rocks; solutions of structural problems at various scales; regional tectonic problems. Mr. Christie, Mr. Oertel

249. Structural Analysis of Deformed Rocks. Discussion, three hours; laboratory, three hours. Prerequisites: courses 111A, 111B, 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.) Mr. Christie

250. Dynamics of the Solar Wind. Parker's hydrodynamic solution and spiral magnetic field model; effects of magnetic field and solar rotation; shock waves, discontinuities, small amplitude wave propagation, large-scale structure; interaction with the moon, planets, and interstellar medium, stellar winds and stellar spindown. Mr. Coleman

251. Seminar in 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 (Sp)

252. Seminar in Geochemistry. Lecture, two hours; discussion, two hours. Phase equilibria under crustal conditions, chemistry of ocean waters, recent and ancient sediments, structure and chemistry of the upper mantle, geochronology, cosmochronology, and cosmochemistry. Mr. Kaplan, Mr. Wasson (F,W)

253. Seminar in 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. Rosenfeld

254. Seminar in 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. Mr. Reed

255. Seminar in Structural Geology and Tectonics. Lecture, three hours. Flow and fracture in the 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 the oceanic basins; processes leading to segregation of continental-type rocks.
Mr. Oertel (Sp)

256. Seminar in Glaciology and Geomorphology. Lecture, three hours. Glacier physics, theoretical geomorphology, river mechanics, statistical models.
Mr. Shreve (W)

257. Seminar in Paleontology. Lecture, three hours. Current biogeologic literature and research on evolution of selected groups of animals and plants, numerical taxonomy, organism-environmental relationships, origin and development of life, biostratigraphy, paleoecology, biogeography, and biostatistics.

258. Seminar in 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. Mr. Barton, Mr. Carlisle (F)

259. Seminar in Paleotectonics. (Not the same as course 259 prior to Fall Quarter 1986.) 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 United States. Mr. Ingersoll (Sp)

260. Seminar in Advanced Topics in Geology (2 to 4 units). (Formerly numbered 259.) 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 the earth's radiation belts.

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. McPherron

268. Seminar in 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. Mr. Carlisle (Sp)

M270A-M270B-M270C. Seminar in Climate Dynamics (2 to 4 units). (Same as Atmospheric Sciences M270A-M270B-M270C and Geography M270A-M270B-M270C.) Lecture, two hours. Prerequisite: consent of instructor. The 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 mantel. The climate of other planets. The modeling, simulation, and prediction of modern climate on the monthly, seasonal, and interannual time scale. May be repeated for credit. S/U or letter grading. Mr. Berger, Mr. Ghil, Mr. Schubert

282. Seminar in 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.

284. Seminar in Mineral Physics and Rock Physics (2 to 4 units). Prerequisite: course 233 or 234A. Seminar for students interested in rock physics, mineral physics, and aspects of seismology and petrology. Students present seminars in their research topics. Topics include equations of state, acoustic properties of minerals under pressure, dielectric properties of minerals, properties of the earth's deep mantle and core, compression of porous aggregates, fracture dynamics, lattice dynamics of low symmetry crystals, laboratory analogs of earthquakes.
Mr. Anderson

M285. Origin and Evolution of the Solar System. (Same as Astronomy M285.) Dynamical problems of the solar system; chemical evidences from geochemistry, meteorites, and the solar atmosphere; nucleosynthesis; solar origin, evolution, and termination; solar nebula, hydromagnetic processes, formation of the planets and satellite systems. Content varies from year to year. May be repeated for credit. S/U grading.
Mr. Kaula

286A-286B-286C. Seminar in Planetology (2 units each). Problems of current interest concerning the moon, planets, and meteorites. May be repeated for credit. S/U grading.

287A-287B-287C. Seminar in Seismology and the Earth's Interior (2 units each). Problems of current interest in seismology and the earth's interior. May be repeated for credit. S/U grading.

288A-288B-288C. Seminar in Space Physics (2 units each). Problems of current interest concerning particles and fields in space. May be repeated for credit. S/U grading.

289A-289B-289C. Seminar in 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 in 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

295. Earth and Space Sciences Colloquium (1 to 2 units). Reading and discussion in the frontiers of earth and space sciences.

297. Advanced Techniques in Geological Research (2 to 4 units). S/U grading.

298. Advanced Topics in Earth and Space Sciences (2 to 4 units).

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. 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, (213) 206-8235

Professors

Robert C. Epp, Ph.D. *(Japanese)*
William R. LaFleur, Ph.D. *(Japanese), Chair*
E. Perry Link, Jr., Ph.D. *(Chinese)*
Hartmut E. F. Scharfe, Ph.D. *(Sanskrit)*
Kenneth K. S. Chen, Ph.D., *Emeritus*
Kan Lao, B.A., *Emeritus*
Richard C. Rudolph, Ph.D., *Emeritus*

Associate Professors

Noriko Akatsuka, Ph.D. *(Japanese)*
Ben Befu, Ph.D. *(Japanese)*
Hung-hsiang Chou, Ph.D. *(Chinese)*
Herbert E. Plutschow, Ph.D. *(Japanese)*
Richard E. Strassberg, Ph.D. *(Chinese)*
Shirleen S. Wong, Ph.D. *(Chinese)*

Assistant Professor

Robert E. Buswell, Ph.D. *(Chinese)*

Lecturers

Y. C. Chu, M.A. *(Chinese)*
Kuo-yi Pao (Unensečen), M.A., M.S., *Emeritus*

Visiting Lecturers

Lisa Chang Ahnert, M.A. *(Chinese)*
Ikuyo Nishide, B.A. *(Japanese)*
Tomi Suzuki, M.A. *(Japanese)*

Scope and Objectives

The Department of East Asian Languages and Cultures aims to provide students with an exposure to the rich cultural heritage of East Asia. This is accomplished through courses in language, literature, thought, religion, 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.

Bachelor of Arts in Chinese

Preparation for the Major

Required: East Asian Languages and Cultures 1A-1B-1C, 11A-11B-11C, 40A, History 9B-9C. Anthropology 22, East Asian Languages and Cultures 113A, and English 4 are recommended.

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 East Asian Languages and Cultures 121A, 121B, 121C, 124A, 124B, 124C, 151A, 151B, and at least four classical language courses from 113A, 113B, 113C, 152A, 152B, 163A, 163B, 163C.

The remaining four and one-half required courses must include East Asian Languages and Cultures 140A or 140B or 140C; one course from 170A, 170B, 173, or 183; 199 (at least two units in the senior year); Art History 114B; and either History 182A, 182B, 182C, or 183.

English 100A, 100B, 100C, 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. 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: East Asian Languages and Cultures 9A-9B-9C, 19A-19B-19C, 40B, History 9B-9C. Anthropology 22 and English 4 are recommended.

The Major

Required: A total of 11½ courses, of which seven must be upper division language courses selected from East Asian Languages and Cultures 119A, 119B, 129, 134A, 134B, 137, 139, 145, C166, CM176, C178, 179A, 179B, C181, C182. The seven courses must include 119B, 129, and 134A or 134B or C166 or C178.

The remaining four and one-half required courses must include East Asian Languages and Cultures 141A or 141B; one course from 174 or 184; 199 (at least two units in the senior year); Art History 114C; and either History 187A, 187B, or 187C.

English 100A, 100B, 100C, 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. 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, (2) have taken a minimum of three quarter courses or the equivalent in classical Chinese or Japanese, and (3) present a B.A. degree from a Department of East Asian Languages and Cultures similar to UCLA's. Applicants with the B.A. in another field or from departments whose requirements are less rigorous will be admitted to the Department of East Asian Languages and Cultures (290 Royce Hall, UCLA, Los Angeles, CA 90024) 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) Aptitude Test, and (4) strength and suitability of purpose.

International students are also required to take the Test of English as a Foreign Language administered by the Educational Testing Service (ETS), unless this test is not offered in their country of residence. International students must also take a test in translation from Chinese or Japanese into English, either with the comprehensive examinations or earlier.

Major Fields or Subdisciplines

M.A. students may specialize in either Chinese language and culture or Japanese language and culture.

Language Requirements

Students majoring in Chinese must have completed at least one year of modern Japanese with a grade of B or better; those majoring in Japanese must have completed one year of classical or modern Chinese with a grade of B or better. This requirement may be fulfilled before admission to the M.A. program.

International students may also be required to take English (ESL) 33A, 33B, 33C, 34, 36, or other ESL courses.

Course Requirements

Nine courses are required for the degree, of which five must be graduate courses. East Asian Languages and Cultures 295 is required for the Chinese major, and course 296 is required for the Japanese major. In unusual cases and with departmental consent, courses taken outside the department that are appropriate to your program may be applied toward the nine courses but not toward the five graduate courses. Courses in the 500 series and those taken to meet admission standards and language requirements may not be applied toward the total course requirement.

Comprehensive Examination Plan

All students take comprehensive examinations in the literature and cultural history of either China or Japan. In addition, you are required to present two seminar research papers. The results of the examinations and the quality of the papers determine whether you will be 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 the four criteria listed under admission to the M.A. degree, plus a recent research paper by the applicant. Students with an M.A. in the department are judged on their M.A. record, plus three letters of recommendation. Those with an M.A. from other institutions must also take a translation examination.

International students must meet the same requirements specified for such students in the M.A. program, including a translation examination at the time of the qualifying examinations or earlier.

Major Fields or Subdisciplines

The department emphasizes three 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) Buddhism with the subdisciplines of Chinese and Japanese Buddhism. In addition, a program in ancient Chinese civilization or Japanese linguistics may be arranged by petition. Departmental faculty will also participate in the design of individual Ph.D. programs.

Foreign Language Requirement

You must demonstrate a reading knowledge of French or German by passing the Graduate School Foreign Language Test administered by the Educational Testing Service (minimum score of 500) or by passing a level five course with a grade of B or better. 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 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 three years of modern Japanese or the equivalent (i.e., one course beyond East Asian Languages and Cultures 119B); those major-

ing in Japanese must take two years of classical Chinese or the equivalent (i.e., three courses beyond East Asian Languages and Cultures 113C). Those majoring in Buddhist studies must also take appropriate courses in Sanskrit or Pali. A grade of B or better is required in courses taken to fulfill the language requirements.

Qualifying Examinations

You must take three written examinations, as follows:

(1) For students in Chinese literature:

(a) A general examination in Chinese literature.

(b) Examinations in two of the following approved fields (which cannot be from the same group): (1) Chinese poetry, Chinese drama, Chinese fiction, modern Chinese literature; (2) ancient Chinese civilization, Chinese Buddhism or another field of Chinese thought or religion; (3) Japanese literature; (4) a field offered in another department or interdepartmental program.

(2) For students in Japanese literature:

(a) A general examination in Japanese literature.

(b) Examinations in two of the following approved fields (which cannot be from the same group): (1) ancient, medieval, early modern, or modern Japanese literature; (2) Japanese Buddhism or another field of Japanese thought or religion; (3) Chinese literature; (4) a field offered in another department or interdepartmental program.

(3) For students in Buddhism, ancient Chinese civilization, or Japanese linguistics:

(a) An examination in your major language area.

(b) A general examination in your major field.

(c) An examination in an approved subfield within your major field.

(d) A general examination in another approved field inside or outside the department.

The 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 examinations once only.

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 proposed dissertation topic and in appropriate related areas of study. With department consent, you may repeat the examination once.

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 may be required to take the written qualifying examinations again.

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 at the discretion of the doctoral committee.

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.

1A-1B-1C. Elementary Modern Chinese. Lecture, five hours. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Students whose knowledge of Chinese disqualifies them for these courses should take courses 2A-2B-2C or more advanced courses. An introduction to standard spoken Chinese and Chinese characters, with emphasis on conversation. Ms. Ahnert, Mr. Chu

2A-2B-2C. Elementary Mandarin for Speakers of Chinese Dialects. Lecture, five hours. Beginning courses specially designed for students who speak, or have some familiarity with, a non-Mandarin dialect of Chinese. All aspects of Mandarin, with emphasis on Mandarin pronunciation and usage. Mr. Chu

7A-7B-7C. Elementary Modern Korean. Lecture, three hours; discussion, two hours. Not open to students who, from whatever source, already know the language. An introduction to standard spoken Korean and Korean writing, with emphasis on conversation.

9A-9B-9C. 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 the written forms. Conversation drill based on material covered in class. Ms. Akatsuka

11A-11B-11C. Intermediate Modern Chinese. Lecture, three hours; laboratory, one hour. Students with credit for courses 2A-2B-2C, or whose background and experience are equivalent to course 2C, should take courses 12A-12B-12C rather than these courses. A continuation of courses 1A-1B-1C, with balanced instruction in reading, writing, and conversation. Ms. Ahnert

12A-12B-12C. Intermediate Mandarin for Speakers of Chinese Dialects. Lecture, three hours; laboratory, one hour. A continuation of courses 2A-2B-2C, covering all aspects of Mandarin but emphasizing those that differ from other dialects of Chinese.

15A-15B-15C. Intermediate Spoken Japanese (2 units each). Lecture, three hours. Prerequisites: course 9C, consent of department. Limited to students with credit for courses 9A-9B-9C. May be taken concurrently with courses 19A-19B-19C. Conversational Japanese. Ms. Nishide

19A-19B-19C. Intermediate Modern Japanese. Lecture, three hours; laboratory, two hours. Prerequisite: course 9C or equivalent. A continuation of courses 9A-9B-9C. Readings in modern Japanese, with emphasis on comprehension and structural analysis. Mr. Epp

40A. Chinese Civilization. Knowledge of Chinese is not required. A survey of the development of the outstanding aspects of Chinese culture from prehistoric to modern times. Mr. Chou

40B. Japanese Civilization. Knowledge of Japanese is not required. A survey of the development of Japanese culture and its relationship to the Asiatic mainland. Mr. Plutschow

42. The Tea Ceremony: An Introduction to the History of Japanese Culture in Theory and Practice. Lecture, three hours; demonstration. The history and culture of Japan as revealed through study and practice of the Tea Ceremony. Topics include Buddhism, aesthetics, calligraphy, painting, architecture, gardens, ceramics, and politics. Mr. Plutschow

Upper Division Courses

113A-113B-113C. Introduction to Classical Chinese. (Formerly numbered 13A-13B-13C and 113A-113B.) Lecture, three hours. Prerequisite: course 1C or consent of instructor. Grammar and readings in selected texts. Ms. Wong

119A-119B. Advanced Modern Japanese. Lecture, three hours; laboratory, one hour. A continuation of courses 19A-19B-19C. Emphasis on comprehension, grammar, and proficiency in reading, composition, and conversation in modern Japanese.

121A-121B-121C. Advanced Modern Chinese. Prerequisite: course 11C. Readings in modern prose and newspaper style. Mr. Chu

122A-122B. Readings in Modern Chinese Literature. Lecture, three hours. Prerequisite: course 121B or consent of instructor. Readings and discussion of works of modern Chinese literature. **122A.** Poetry and Prose; **122B.** Drama and Fiction. Mr. Link

124A-124B-124C. Readings in Modern Expository Chinese. Lecture, three hours. Prerequisite: course 121B or consent of instructor. Readings in the social sciences, including Chinese Communist materials. **124A.** Nationalist Chinese Materials (including the May 4th Movement); **124B.** Political and Military Materials of Communist China; **124C.** Economic and Educational Materials of Communist China. Mr. Chu

126. Post-1949 Chinese Literature. Prerequisite: course 121B or consent of instructor. Reading and discussion of selected works in contemporary poetry, drama, and fiction, with emphasis on the People's Republic of China. Mr. Link

128. Readings in Modern Korean Literature. Prerequisite: reading knowledge of modern Korean. Reading and discussion of selected works in modern Korean literature. P/NP or letter grading.

129. Introduction to Classical Japanese. Lecture, three hours. Prerequisite: course 119B or consent of instructor. Introduction to literary Japanese, with readings and discussions in the prose and poetry of the Heian period. Mr. Befu

134A. Introduction to Kawabata Yasunari. Lecture, three hours. Prerequisite: course 19C. Reading and analysis of the Nobel Laureate's short stories, with particular emphasis on their emotional structure. Mr. Epp

134B. Introduction to Mushakoji Saneatsu. Lecture, three hours. Prerequisite: course 19C. Reading and discussion of Mushakoji's prose, fiction, and poetry. Mr. Epp

135. Buddhist Themes in Asian Literature. Knowledge of Asian languages is not required. A survey of selected works of Buddhist literature of India, China, and Japan. Includes canonical works such as the *Lotus Sutra* and noncanonical works of poetry, prose, and drama containing Buddhist themes. Mr. LaFleur

137. Introduction to Kambun and Other Literary Styles. Lecture, three hours. Prerequisite: course 119B or consent of instructor. Introduction to Kambun, the Japanese literary rendering of classical Chinese, and Sorobun, the epistolary style. Mr. Befu, Mr. Plutschow

139. Introduction to Buddhist Texts. Lecture, three hours. Prerequisite: course 113C, 119A, or 121A. Studies in Buddhist terminology.

140A-140B-140C. Chinese Literature in Translation. Knowledge of Chinese is not required. Open to freshmen and sophomores, as well as all other students. Lectures and collateral reading of representative works in English translation. **140A.** Poetry from Earliest Times to the 19th Century; **140B.** Drama and Fiction from the 13th Century to the End of the Ch'ing Period; **140C.** 20th-Century Poetry, Drama, Fiction.
Mr. Link, Mr. Strassberg, Ms. Wong

141A-141B. Japanese Literature in Translation. Knowledge of Japanese is not required. Open to freshmen and sophomores, as well as all other students. A survey of Japanese literature from the beginning to modern times, emphasizing Chinese, Buddhist, and Western influences. **141A.** Beginning to 1600; **141B.** 1600 to Modern Times.
Mr. Plutschow

145. Readings in Modern Expository Japanese. Prerequisite: course 119A. Readings in contemporary affairs, including politics, economics, trade, and social issues, taken from current Japanese newspapers and journals. Mr. Plutschow

151A-151B. Readings in Traditional Chinese Fiction. Prerequisite: course 11C or equivalent or consent of instructor. Selected readings from the classic Chinese novels. Designed primarily as a language course; emphasis on translation and obtaining a command of the various literary styles, as well as on critical interpretation of the texts. Mr. Strassberg

152A-152B. Readings in Classical Chinese Poetry. Lecture, three hours. Prerequisite: course 113C or consent of instructor. Discussion and collateral reading of representative works selected on the basis of such critical concerns as thematic patterns, image clusters, genres, and the characteristics of major poets. Ms. Wong

154A-154B. Mongolian. Lecture, three hours; laboratory, one hour. To be offered when requested by a sufficient number of students.

160. Elementary Sanskrit. Introduction to script and grammar, with reading exercises and attention to the significance of Sanskrit for the understanding of other Indo-European languages. Mr. Scharfe

161. Intermediate Sanskrit. Prerequisite: course 160 or equivalent. Advanced aspects of grammar and the reading of literary texts. Mr. Scharfe

162. Advanced Sanskrit. Prerequisite: course 161 or equivalent. Reading of the entire Bhagavadgita or a comparable amount of other Sanskrit literature.
Mr. Scharfe

163A-163B-163C. Readings in Chinese Literary Texts. Lecture, three hours. Prerequisite: course 113C.

165. Readings in Sanskrit. Prerequisite: course 162 or equivalent. Extensive reading in such texts as best serve the students' needs. Mr. Scharfe

C166. Kawabata's Contemporaries. (Formerly numbered 153A.) Lecture, three hours. Prerequisite: course 119A or 134A or 134B. Readings in the fiction and poetry of such writers as Ibuse Masuji, Maruyama Kaoru, Ozaki Kazuo, Tsuboi Sakae, and Yokomitsu Riichi. Concurrently scheduled with course C266.
Mr. Epp (W, odd years)

167. Introduction to Indic Philosophy. A survey of the main trends in Indian philosophy from ancient to modern times. Mr. Scharfe

170A-170B. Archaeology in Early and Modern China:

170A. Introduction to Chinese Archaeology. Early Chinese study of their own past, types of artifacts, antiquarianism, and the beginnings of scientific archaeology in China before 1949. Mr. Chou

170B. Archaeology in the People's Republic of China. Survey of major excavations of sites of all periods, carried out under the intensive archaeological program of the PRC, and the interpretation of the archaeological findings. Mr. Chou

172. Introduction to Buddhism. Knowledge of Asian languages is not required. Life of the Buddha and fundamental doctrines of Buddhism; Buddhist writings; the monastic order; early sects. The popular cult. The rise and development of Mahayana Buddhism: writings and doctrines. The Tantric doctrines and the end of Indian Buddhism. Mr. Buswell

173. Chinese Buddhism. Knowledge of Asian languages is not required. The introduction and development of Buddhism in China, interaction between Buddhism and Chinese culture, rise of the Chinese schools of Buddhism such as Pure Land and Zen, contributions to Chinese culture. Mr. Buswell

174. Japanese Buddhism. Knowledge of Asian languages is not required. The development of Buddhism in Japan and its influence on Japanese culture, with emphasis on the arts. Mr. LaFleur

CM176. Introduction to the Structure of Japanese. (Formerly numbered 175.) (Same as Linguistics M176.) Lecture, three hours. Prerequisite: two years of Japanese. Knowledge of linguistics is not required. Discussion of many seemingly idiosyncratic characteristics of Japanese syntax and semantics in light of word-order typology and universal grammar, often in the form of a contrastive analysis of Japanese and English. Concurrently scheduled with course C276. Ms. Akatsuka

177. Kyoto through Classical Japanese Literature. Lecture, three hours. Recommended prerequisite: course 40B. Knowledge of Japanese is not required. An investigation of the history and life of the city as seen through Japanese literature. P/NP or letter grading. Mr. Plutschow

C178. Introduction to Shiga Naoya. (Formerly numbered 153B.) Lecture, three hours. Prerequisite: course 119A or 134A or 134B. Reading and discussion of Shiga's short stories, with special emphasis on his I-novel technique until 1918. Concurrently scheduled with course C278.
Mr. Epp (W, even years)

179A. Readings in Medieval Japanese Literature. Lecture, three hours. Prerequisite: course 129 or consent of instructor. Readings and discussion in the prose, poetry, and drama to 1600. Mr. Plutschow

179B. Readings in Edo Literature. Lecture, three hours. Prerequisite: course 129. Readings and discussion in the prose, poetry, and drama from 1600 to 1868. Mr. Befu

C181. Readings in the Japanese Family System. (Formerly numbered 142A.) Lecture, three hours. Prerequisite: course 119B or equivalent. Analysis and discussion of post-World War II articles criticizing the family system and the way it has functioned in the past. Concurrently scheduled with course C281.
Mr. Epp (Sp)

C182. Human Problems in the Modernization of Japan. (Formerly numbered 142B.) Lecture, three hours. Prerequisite: course 119B. Analysis and discussion of articles dealing with the definition of modernization in Japanese society and the relation of modernization to traditional values, self-awareness, and the role of the intellectual. Concurrently scheduled with course C282. Mr. Epp (Sp)

183. Introduction to Chinese Thought. Lecture, three hours. Knowledge of Asian languages is not required. A general survey of indigenous Chinese thought from the Chou period to circa 1800, covering Confucianism, Taoism, Mo-tzu, the legalists, the influence of Buddhism, the development of neo-Taoism and neo-Confucianism.

184. Introduction to Japanese Thought. Lecture, three hours. Knowledge of Asian languages is not required. A general survey of Japanese thought from early to modern times, including analyses of Shinto mythology, forms of Confucianism, the ethic of bushido, the 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. Mr. LaFleur

185. Introduction to Korean Thought. Lecture, three hours. A 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.
Ms. Kim

188. Chinese Etymology and Calligraphy. Prerequisite: one year of classical Chinese or consent of instructor. Covers (1) the development of the Chinese writing system from the "Pottery Inscriptions" 6,000 years ago to the modern "Simplified Forms" and the studies of the Six Scripts principles which were used to form Chinese characters and (2) the aesthetic training of calligraphic art and its appreciation, with focus on the ways of recognizing and interpreting the "Cursive Style," a common form of handwriting.
Mr. Chou

189. Chinese Brush Painting. Lecture, two hours; studio, two hours. A combination studio-lecture course surveying the aesthetics and techniques of Chinese literati painting. Emphasis on realizing the philosophical ideals of critical treatises through mastery of the traditional materials and elements of landscape. Mr. Strassberg

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 study. May be repeated once with consent of instructor.

Graduate Courses

203A-203B. Chinese Philosophical Texts. May be repeated for credit with consent of instructor.
Mr. Strassberg

213. Chinese Buddhist Texts. May be repeated for credit with consent of instructor.

214A-214B. Pali and Prakrits. Prerequisites: knowledge of Sanskrit equivalent to course 161, consent of instructor. Grammatical studies and reading of texts. Comparative considerations. Mr. Scharfe

221A-221B. Introduction to Panini's Grammar. Prerequisite: course 162 or equivalent. Reading of selected passages of the text, with an introduction to Panini's technique. Mr. Scharfe

M222A-M222B. Vedic. (Same as Iranian M222A-M222B.) Prerequisites: knowledge of Sanskrit equivalent to course 162, consent of instructor. Characteristics of the Vedic dialect and readings in the Rig-Vedic hymns. Only course M222B may be repeated for credit. Mr. Schmidt

223. Seminar: Linguistic Analysis of Japanese Narratives. Prerequisite: course CM176 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. Ms. Akatsuka

229A-229B. Japanese Buddhist Texts. May be repeated for credit with consent of instructor.
Mr. LaFleur

240. Advanced Chinese Classics. Reading and discussion of selected works in classical Chinese, including various types of literary prose and historical narratives, with attention to stylistic features and historical development. May be repeated for credit with consent of instructor. Ms. Wong

242A-242B. Japanese Classics:

242A. Prose and Poetry to 1600.

242B. Prose and Poetry from 1600 to 1868. May be repeated for credit with consent of instructor.
Mr. Befu

243. Seminar in No and Kyogen. Lecture, three to four hours. Prerequisite: knowledge of classical Japanese. Readings of selected No and Kyogen texts from the Muromachi and Edo periods, as well as readings of critical writings and discussion of theories. May be repeated for credit with consent of instructor. S/U or letter grading. Mr. LaFleur

244. Seminar in Traditional Chinese Fiction and Drama. Prerequisite: reading knowledge of colloquial and literary Chinese. Seminar topics alternate yearly between traditional fiction and drama, with emphasis on generic, hermeneutical, and historical approaches. Topics in fiction selected from narrative genres from the Chou through the Ch'ing periods. Topics in drama selected from *tsa-chü* and *ch'uan-ch'i*. May be repeated for credit with consent of instructor. *Mr. Strassberg*

245. Seminar in Modern Japanese Fiction. Lecture, three hours. May be repeated for credit with consent of instructor. Ms. Suzuki (F)

246. Modern Japanese Poetry. Lecture, three hours. Studies of individual poets who became established between World War I and World War II and who consequently illustrate the transitional artists trying to modernize their tradition. May be repeated for credit. S/U or letter grading. Mr. Epp

247. Selected Readings in Sanskrit Texts. May be repeated for credit with consent of instructor. Mr. Scharfe

250. Seminar in Medieval Japanese Literature. Prerequisite: one year of classical Japanese. Selected readings in travel poetry, travel diaries, and other genres of Japanese travel literature of the Heian, Kamakura, Nambokucho, and Muromachi periods. May be repeated for credit with consent of instructor. Mr. Plutschow

251. Seminar: Selected Topics in Modern Chinese Literature. Prerequisite: consent of instructor. Selected readings in 20th-century Chinese literature, emphasizing fiction. Discussion of individual research projects. May be repeated for credit. Mr. Link

252. Seminar: Selected Topics in Japanese Literature. May be repeated for credit. Mr. Befu

253. Seminar: Selected Topics in Japanese Buddhism. May be repeated for credit. Mr. LaFleur

255. Seminar: Selected Topics in Chinese or Indian Buddhism. May be repeated for credit.

261A-261B. Seminar in Classical Chinese Poetry. Prerequisites: courses 152A and/or 152B, or consent of instructor. **261A.** Chinese poetry from the *Shih-ching* phase to the 6th century, with emphasis on the evolution of the lyric form during the Southern Dynasties (ca. 400-600). **261B.** The development of *shih* and *tz'u* from the T'ang period (ca. 600-900) and onward; traditional and modern critical approaches to classical Chinese poetry. Ms. Wong

C266. Kawabata's Contemporaries. Lecture, three hours. Prerequisite: course 119A or 134A or 134B. Not open for credit to students with credit for course C166 or former course 153A. Readings in the fiction and poetry of such writers as Ibuse Masuji, Maruyama Kaoru, Ozaki Kazuo, Tsuboi Sakae, and Yokomitsu Riichi. Concurrently scheduled with course C166. Graduate students write a research paper and present written or oral reports on outside readings. Mr. Epp (W, odd years)

270. Seminar: Selected Topics in Chinese Archaeology. Prerequisite: course 170A or 170B or consent of instructor. Discussion and research on major problems about Chinese archaeology and the different interpretations to the most important archaeological finds, with emphasis on the studies of the Xia and Shang cultures and the Xia and Shang dynasties. May be repeated for credit. Mr. Chou

275. Seminar: Selected Topics in Chinese Cultural History. Prerequisite: consent of instructor. Discussion and research on the major problems related to Chinese culture, such as beginnings of the Chinese civilization and the Chinese dynastic history. Other topics include the cultural developments of ancient and medieval China. May be repeated for credit. Mr. Chou

C276. Structure of Japanese. Lecture, three hours. Prerequisite: two years of Japanese. Knowledge of linguistics is not required. Discussion of many seemingly idiosyncratic characteristics of Japanese syntax and semantics in light of word-order typology and universal grammar, often in the form of a contrastive analysis of Japanese and English. Concurrently scheduled with course CM176. S/U or letter grading. Ms. Akatsuka

C278. Introduction to Shiga Naoya. Lecture, three hours. Prerequisite: course 119A or 134A or 134B. Not open for credit to students with credit for course C178 or former course 153B. Reading and discussion of Shiga's short stories, with special emphasis on his I-novel technique until 1918. Concurrently scheduled with course C178. Graduate students write a research paper and present written or oral reports on outside readings. Mr. Epp (W, even years)

C281. Readings in the Japanese Family System. Lecture, three hours. Prerequisite: course 119B or equivalent. Not open for credit to students with credit for course C181 or former course 142A. Analysis and discussion of post-World War II articles criticizing the family system and the way it has functioned in the past. Concurrently scheduled with course C181. Graduate students write a research paper and present written or oral reports on outside readings. Mr. Epp (Sp)

C282. Human Problems in the Modernization of Japan. Lecture, three hours. Prerequisite: course 119B. Not open for credit to students with credit for course C182 or former course 142B. Analysis and discussion of articles dealing with the definition of modernization in Japanese society and the relation of modernization to traditional values, self-awareness, and the role of the intellectual. Concurrently scheduled with course C182. Graduate students write a research paper and present written or oral reports on outside readings. Mr. Epp (Sp)

285. Selected Topics in Buddhist Culture. May be repeated for credit with consent of instructor. Mr. LaFleur

295. Bibliography and Methods of Research in Chinese. Required of all graduate students in Chinese. Lectures and discussion on the research methodology dealing with traditional Chinese materials, with emphasis on bibliography training (including the most up-to-date indexes in Chinese studies), punctuation practice, knowledge of textual criticism, and rare book editions. Mr. Chou

296. Bibliography and Methods of Research in Japanese. Required of all graduate students in Japanese. Mr. Befu

299. Independent Study. Prerequisite: graduate standing. Guided research and writing of a research paper. May be repeated, but only four units may be applied toward the M.A. degree. May not be applied toward the Ph.D. degree. (F,W,Sp)

301. Teaching an Oriental Language as a Foreign Language.

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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.

You may repeat the courses below with consent of instructor; however, none may be applied toward the minimum course requirement for the M.A.

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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. S/U grading.

596. Directed Individual Studies (4 to 12 units). S/U grading.

597. Preparation for M.A. Comprehensive Examination or Ph.D. Qualifying Examinations. S/U grading.

599. Research for and Preparation of Ph.D. Dissertation (4 to 12 units). S/U grading.

Related Courses in Other Departments

Anthropology 166. Comparative Minority Relations
175S. Japan
261. Comparative Minority Relations

Art History (Art, Design, and Art History) 114A. The Early Art of India
114B. Chinese Art
114C. Japanese Art
C115A. Advanced Indian Art
C115B. Advanced Chinese Art
C115C. Advanced Japanese Art
260. Asian Art

Education 253C. Seminar: Asian Education

English 100A. Introduction to Poetry
140A. Criticism: History and Theory
140B. Criticism: Special Topics
201. The History of Literary Criticism

Geography 186. Contemporary China
286. Eastern Asia

History 182A-182B-182C. History of China
183. Modern China, 1840-1920
184. The Chinese Revolution
186. Diplomatic History of the Far East
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-282C. Seminar in Chinese History
285A-285B. Seminar in Modern Japanese History
293A-293B. Seminar in the History of Religions

Law 278. Comparative Law: Chinese Law

Linguistics 103. Introduction to General Phonetics
120A. Linguistic Analysis: Phonology
120B. Linguistic Analysis: Grammar
220. Linguistic Areas
225H. Linguistic Structures: Japanese
225P. Linguistic Structures: Chinese

Music 81D. Music and Dance of China
81G. Music and Dance of Japan
81J. Music of Korea
141. Survey of Music in Japan
145. History of Chinese Opera
146A-146B-146C. Studies in Chinese Instrumental Music
147A-147B. Music of China

Political Science 135. International Relations of China
136. International Relations of Japan
159. Chinese Government and Politics
160. Japanese Government and Politics
C250C. Seminars in Regional and Area Political Studies: Chinese and East Asian Studies
C250D. Seminars in Regional and Area Political Studies: Japanese and Western Pacific Studies

Sociology 134. Comparative Social Institutions of East Asia
276. Selected Topics in the Sociology of East Asia

East Asian Studies
(Interdepartmental)

290 Royce Hall, (213) 206-8235

Professors

Hans H. Baerwald, Ph.D. *(Political Science)*
Richard D. Baum, Ph.D. *(Political Science)*
Phillip C. Huang, Ph.D. *(History)*

Associate Professors

Herbert E. Plutschow, Ph.D. *(East Asian Languages and Cultures), Chair*
Richard E. Strassberg, Ph.D. *(East Asian Languages and Cultures)*

Scope and Objectives

This undergraduate major is designed for those who wish to study the Chinese- and Japanese-speaking areas of East Asia and/or engage in business there. It offers a social science approach, combined with language study and work in the humanities.

Bachelor of Arts Degree

Preparation for the Major

Required: History 9B-9C; East Asian Languages and Cultures 1A-1B-1C or 9A-9B-9C or a parallel Cantonese sequence; East Asian Languages and Cultures 11A-11B-11C or 19A-19B-19C. Students planning to pursue classical Chinese in the major will need East Asian Languages and Cultures 113A-113B-113C in addition to the above courses.

The Major

This consists of three parts:

(1) Four courses from Anthropology 175S, Asian American Studies 100A, 100B, Geography 186, History 161, 182A, 182B, 182C, 183, 184, 186, 187A, 187B, 187C, Political Science 135, 136, 159, 160, Sociology 134.

(2) Five courses from the following: any upper division courses in the social sciences listed above not being used to satisfy that requirement; any upper division courses in the Department of East Asian Languages and Cultures not being used to satisfy other parts of the major requirements; any new upper division courses relevant to East Asian or Asian American studies (including no more than three CED courses) which may be approved by the Executive Committee of the college on the recommendation of the advisory committee; Art History 114B, 114C, C115B, C115C; Music 140C, 141, 145, 146A, 146B, 146C, 147A, 147B*.

(3) The prescribed courses in one of the following areas (courses offered to satisfy this requirement may not be applied toward other parts of the major requirements): (a) *archaeology:* any four courses from East Asian Languages and Cultures 170A, 170B, Anthropology 112*, 115Q*, 115R*; (b) *geography:* Geography 133, 186, and two additional upper division geography courses; (c) *history:* four upper division or graduate courses in East Asian or Southeast Asian history (History 182A, 182B, 182C, 183, 184, 186, 187A, 187B, 187C, 190A, 190B, 197 when in the East Asian field); (d) *political science:* Political Science 115* and three courses from 135, 136, C137A, 137B, 159, 160, 161, C197 when in the East Asian field; (e) *sociology:* Sociology 124* and three courses from 113*, 126*, 134*, 151*, 154.

*Courses so marked have prerequisites which are not included among the courses mentioned here.

Economics

2263 Bunche Hall, (213) 825-1011

Professors

William R. Allen, Ph.D.
Robert W. Clower, D.Litt.
Michael R. Darby, Ph.D.
Harold Demsetz, Ph.D.
Bryan C. Ellickson, Ph.D.
Arnold C. Harberger, Ph.D.
George W. Hilton, Ph.D.
Werner Z. Hirsch, Ph.D.
Jack Hirshleifer, Ph.D.
Michael D. Intriligator, Ph.D.
Benjamin Klein, Ph.D.
Edward E. Leamer, Ph.D.
Axel Leijonhufvud, Ph.D.
John J. McCall, Ph.D.
Joseph M. Ostroy, Ph.D.
John G. Riley, Ph.D.
Lloyd S. Shapley, Ph.D.
Harold M. Somers, Ph.D., LL.B.
Earl A. Thompson, Ph.D.
Finis R. Welch, Ph.D.
Armen A. Alchian, Ph.D., *Emeritus*
John F. Barron, Ph.D., *Emeritus*
Paul A. Dodd, Ph.D., LL.D., *Emeritus*
Earl J. Miller, Ph.D., LL.D., *Emeritus*
Dudley F. Pegrum, Ph.D., *Emeritus*

Associate Professors

Sebastian Edwards, Ph.D.
George G. S. Murphy, Ph.D.
Robert Topel, Ph.D.

Assistant Professors

Sean R. Becketti, Ph.D.
Trudy Cameron, Ph.D.
David Dollar, Ph.D.
John C. Haltiwanger, Ph.D.
David K. Levine, Ph.D.
Sule Ozler, Ph.D.
Mark W. Plant, Ph.D.
Marc S. Robinson, Ph.D.
Sunil Sharma, Ph.D.
Carol Simon, Ph.D.
Kenneth Sokoloff, Ph.D.
Michael Waldman, 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

Pre-Economics Major

While you are completing the lower division preparation courses for the major, you may be classified as a pre-economics 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 30 or two 100W courses; Economics 1, 2, 40 (or Mathematics 50 as a substitute for course 40); two courses in calculus (i.e., Mathematics 3A and 3B, or 3A and 3E, or 31A and 31B. Mathematics 3E is specifically designed for economics). All courses must be completed 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 will result 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: Ten upper division courses in economics which must include Economics 101A, 101B, 102, and at least one course in three different fields in economics selected from the list below (all courses must be completed for a letter grade). Economics 100, 110, and 190 may not be included among the 10 upper division courses. One or two of the 10 courses may include Management 120 and/or 130 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 101A, 101B, and 102. In addition, you must have a 2.0 grade-point average (computed separately) for both upper division economics and management courses (i.e., a grade-point deficiency in economics courses cannot be offset by grade points earned in management courses and vice versa). 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 101A, 101B, 102, 103A-103Z, 104, 107); economic 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); economic institutions (courses 180, 181A, 181B, 182, 183); international economics (courses 191, 192).

Bachelor of Arts in Economics/Business

This program offers students a business orientation in their undergraduate studies. Designed to prepare students for careers in business and for professional business education at the graduate level, the program requires students to include specific courses offered by the department and the Graduate School of Management (see "The Major").

Admission

Resources for the program are limited, and only 250 students per year are admitted. Applications for admission are handled exclusively by the Department of Economics and are available only once or twice a year. To apply you must have completed at least 72 quarter units (but no more than 135 quarter units), one 12-unit quarter of residence in regular session at UCLA, and all courses listed under "Preparation for the Major." In addition, you must be enrolled in UCLA regular session at the time of application and have an overall UCLA grade-point average of 3.0 (B), an average of 3.0 in the economics courses, and a 3.0 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.

Preparation for the Major

Required: Economics 1, 2, 40 (or Mathematics 50); English 4 or 30 or two 100W courses; Management 1A, 1B; Mathematics 3A and 3B, or 3A and 3E, or 31A and 31B (Mathematics 3E is specifically designed for economics). All courses must be completed for a letter grade.

Repetition of more than one preparation course or of any preparation course more than once will result 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: Economics 101A, 101B, 102, and at least two courses from 104, 173, 174; four other upper division courses in economics in at least two different fields; four upper division courses from Management 120, 122, 124, 130, 133, 140, and tax accounting (currently Management 197A). Learning Center courses or courses transferred from other institutions, including UCLA Extension, may not be applied toward the management part of the major. All major courses must be completed for a letter grade. Transfer credit for any of the major courses is subject to department approval; consult the undergraduate counselor before enrolling in any courses for the major.

You must maintain a UCLA 3.0 grade-point average throughout your program and must have a 3.0 GPA (computed separately) for both management and economics courses in order to remain in the major (i.e., a grade-point deficiency in economics courses cannot be offset by grade points earned in management courses and vice versa when computing the upper division grade-point minimum).

Bachelor of Arts in Economics/International Area Studies

This program is for students who wish to attain a 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

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 quarter of residence in regular session at UCLA, and all courses listed under "Preparation for the Major." 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 199. Your program as a whole must be approved by the Economics faculty adviser before you are admitted to the major; you must apply before you reach 135 quarter units.

Preparation for the Major

Required: Economics 1, 2, 40 (or Mathematics 50 as a substitute for course 40); two courses in calculus (i.e., Mathematics 3A and 3B, or 3A and 3E, or 31A and 31B. Mathematics 3E is specifically designed for economics). You also must complete the sixth quarter course (or equivalent) of any modern language (e.g., French 6, German 6, Russian 6, Spanish 25; these are most frequently offered in fulfillment of this requirement, but also see the offerings under Portuguese, Italian, Germanic Languages, Near Eastern Languages, African Languages, and East Asian Languages and Cultures).

Repetition of more than one preparation course or of any preparation course more than once will result 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 15 upper division courses selected from economics and the list of "Approved Noneconomics Courses" below. Eleven must be from economics, including Economics 101A, 101B, 102 (with a grade of C or better in each), 191, 192, 199, and five courses from at least two different fields in economics (selected from the "Major Fields" listed under the regular economics major). Four of the remaining upper division courses must be chosen from the approved list below and must include selections from at least two different departments. Economics 199 must be completed in your last quarter before graduation and includes the preparation of a research paper on the economy of the country or region of your specialization, sponsored and supervised by an Economics faculty member. 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 of the five upper division economics electives may include Management 120 and/or 130 and/or 133 (Learning Center courses or courses transferred from other institutions may not be applied toward this option). A 2.5 GPA (computed separately from the economics courses) is also required in the management courses applied to this option.

Transfer credit for any courses to be applied toward the upper division requirements is subject to department approval; consult the undergraduate counselor before enrolling in any courses for the major.

To remain in the major you must maintain a 2.5 GPA for both economics and noneconomics courses, computed separately (i.e., a grade-point deficiency in economics courses cannot be offset by grade points earned in noneconomics courses and vice versa).

Approved Noneconomics Courses

Anthropology 171, 175P, 175Q, 175R, 175S, 176, 177; Geography 181, 182A, 182B, 183, 184, 185, 186, 187, 188, 189, 190; History 106C, 107B, 108A, 109B, 110B, 111B, 112C, 113, 125E, 126E, 128D, 129C, 131C, 131D, 132B, 133B, 134B, 141B, 142A, 142B, 143, 144, 167A, 167B, 167C, 171, 173, 176B, 177, 178A, 178B, 179B, 184, 187C, 188B, 190B; Political Science 152 through 165, 166A, 166B, 166C; Sociology 130, 131, 132, 133, 134; others by department approval.

Specialization in Computing

Majors in economics, economics/business, 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, 30, 60, and Mathematics 61, (3) completing at least two courses from Economics 104, 145, 146, 147A, 147B, 199 (course 199 must be approved as relevant to both the specialization in computing and economics by the vice chair for Undergraduate Affairs). A grade of C or better is required in each course.

Bachelor of Science in Economics/System Science

The degree is described following the Economics Department courses.

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) Aptitude and Advanced Economics Tests.

The Department of Economics (2263 Bunche Hall, UCLA, Los Angeles, CA 90024) admits students only for the Fall Quarter of each academic year. The deadline for submitting the admission/fellowship application is December 31.

Major Fields or Subdisciplines

Economic theory; economic development; urban and regional economics; public finance; mathematical economics; statistics and econometrics; labor economics; money and banking; industrial organization; economic institutions; international economics; uncertainty and information.

Master of Arts Degree

Course Requirements

Candidates for the Master of Arts degree in Economics should have completed the equivalent of an undergraduate major in economics. The department requires nine upper division and graduate-level courses in economics completed in graduate standing at UCLA. These courses must include Economics 101A, 101B, and 102 with a grade of B or better and 107 with a grade of C or better.

Graduate-level courses in economic theory and history of economic thought may be substituted for these undergraduate courses. At least five of the nine courses must be strictly graduate economics courses.

You must also have completed, if not previously taken, two courses in calculus and one in statistics. Economics 144 may be used as one of the calculus courses and Economics 40 as the statistics course.

With consent of the graduate chair, you may offer a maximum of two courses in other social sciences such as history, management, mathematics, psychology, education, or philosophy in partial satisfaction of the degree requirements; 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.

Comprehensive Examination Plan

The comprehensive examination requirement for the master's degree may be met in one of the following three ways:

(1) A master's pass (M) or better in each of two full doctoral comprehensive examinations.

(2) Two master's passes (M) or better in each of two doctoral examinations, with one of the examinations being either the micro or macro half of the theory comprehensive.

(3) Three grades of master's pass (M) or better in the quantitative methods examination and in each half of the theory comprehensive. If you achieve a B+ average in Economics 246B and 246C, you automatically receive a pass (P) grade in the quantitative methods examination.

The macro and micro parts of the theory examination may be taken or repeated either separately or together, and the grades on each part will be recorded separately for meeting the requirements for the M.A. and Ph.D. degrees.

Ph.D. Degree

Foreign Language Requirement

Ph.D. candidates must offer one foreign language or a substitute program in mathematics prior to sitting for the University Oral Qualifying Examination. If the language option is selected, you are required to show a proficiency in one language — French, German, Russian, or Spanish — by passing the Educational Testing Service (ETS) examination with a grade of 500 or better. Students whose native language is not English may substitute English for the language requirement by petitioning the dean of the Graduate Division. If the mathematics substitute is selected, you must show proficiency in mathematics above that ordinarily required of Ph.D. candidates. Since elementary calculus is, as noted above, considered basic for all economists, the three required language-substitute courses must be at a level above first-year calculus. Specifically, Mathematics 32 and 110 or above fulfill the requirement.

Course Requirements

The specific course requirements which must be fulfilled prior to taking the University Oral Qualifying Examination are the following:

(1) *Quantitative Methods:* The requirement may be satisfied in any of the following ways: (a) achieving a B+ average in Economics 246B and 246C; (b) achieving a B average in at least two quarters of the advanced econometrics sequence (courses 247, 248, 249); (c) passing the quantitative methods waiver examination administered at the beginning of Fall Quarter.

(2) *U.S. or European Economic History:* You must take one upper division undergraduate course in either United States or European economic history with a grade of B or better. Economics 181A, 181B, or 183 may be taken to satisfy this requirement.

(3) *History of Economic Theory:* You must take one upper division undergraduate course in the history of economic theory with a grade of C or better. Economics 107 may be taken to satisfy this requirement.

You may petition the graduate committee to substitute any one of the above requirements with comparable coursework taken at a previous institution.

Qualifying Examinations

You are responsible for contacting the graduate adviser for additional regulations covering these examinations.

You are expected to take the theory comprehensive at the end of the Spring Quarter of your first year or in the beginning of the Fall Quarter of your second year. During the second and third years, you will have to pass further written examinations in three elective fields.

Written examinations are graded H (honors pass), P (pass at the Ph.D. level), M (pass at the M.A. level), and F (fail). You are considered to have completed your theory and elective field examinations when you have earned at least four P grades.

The macro and micro parts of the theory examination may be taken or repeated separately or together, and the grades on each part are recorded separately for meeting the requirements for the M.A. and Ph.D. degrees. For the Ph.D. degree, the overall theory grade will be the lower of the grades on each of the macro and micro parts.

In order to be advanced to candidacy, you are required to present a paper in a departmental workshop. It is recommended that this be done by the end of your third year.

The University Oral Qualifying Examination, administered by your doctoral committee, is scheduled after successful completion of all the written examinations, other course requirements, and the foreign language requirement, and after the 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. An introduction to the 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. An introduction to the principles of economic analysis, economic institutions, and issues of economic policy. Emphasis on aggregative economics, including national income, monetary and fiscal policy, and international trade.

3. Lower Division Research Seminar in Microeconomics. Prerequisite: course 1. Limited to freshmen and sophomores. Seminar in which students do an intensive research project under guidance of regular faculty. Students select topics in consultation with instructor (topics limited to materials covered in course 1), write papers, and present them at the seminar.

4. Lower Division Research Seminar in Macroeconomics. Prerequisite: course 2. Limited to freshmen and sophomores. Seminar in which students do an 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.

40. Introduction to Statistical Methods. Lecture, three hours; discussion, one hour. Not open to students with credit for Mathematics 50, 150A-150B-150C, 152A-152B, or Management 115. 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.

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. Not open to students with credit for course 1 or 2. The principles of economics with application to current economic problems. May not be used to fulfill entrance requirements for any Economics Department major. Mr. Murphy (F,W,Sp)

101A. Microeconomic Theory. Lecture, three hours; discussion, one hour. Prerequisites: two courses in calculus or consent of instructor. The laws of demand, supply, returns, and costs; price and output determination in different market situations.
Mr. Hirshleifer, Mr. Ostroy, Mr. Riley

101B. Microeconomic Theory. Lecture, three hours; discussion, one hour. Prerequisite: course 101A. Theory of factor pricing and income distribution; general equilibrium; implications of the pricing process for the optimum allocation of resources; interest and capital. Mr. Hirshleifer, Mr. Ostroy

102. Macroeconomic Theory. Lecture, three hours; discussion, one hour. Prerequisites: two courses in calculus or consent of instructor. Theory of income, employment, and the price level. Analysis of secular growth and business fluctuations; introduction to monetary and fiscal policy.
Mr. Clower, Mr. Darby, Mr. Thompson

103A-103Z. Upper Division Research Seminar: 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.) An interdisciplinary approach to the problem of nuclear proliferation. Economic aspects of the 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 the balance of payments, energy conservation, and future technologies.
Mr. Robinson

104. Managerial Economics. Lecture, three hours. Prerequisite: course 101A. Enrollment priority to economics/business students. Application of economic principles to business decisions. Allocating joint costs. Implicit costs of capacity constraints. Problems in capital budgeting, financing, and pricing. The role of interest rates in business decisions. Mr. Riley

107. History of Economic Theory. Lecture, three hours. A 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, the Mercantilists, the Physiocrats, Hume, Smith, Malthus, Ricardo, Marx, Marginalists, and Marshall.
Mr. Allen, Mr. Hilton

110. Economic Problems of Underdeveloped Countries. Lecture, three hours. Limited to non-Economics Department majors. Not open for credit to students with credit for course 111 or 112. A survey of the 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.
Mr. Edwards

111. Theories of Economic Growth and Development. Lecture, three hours. Prerequisite: course 101A. 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. Edwards

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. Edwards

120. Introduction to Urban and Regional Economics. Lecture, three hours. Prerequisite: course 101A or consent of instructor. A survey of the 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 the local public sector. Mr. Ellickson, Mr. Hirsch

121. Urban Economic Analysis. Lecture, three hours. Prerequisites: courses 101A, 101B, and 120, or consent of instructor. Urban economic analysis requires the development of analytical tools that are different in some respects from the standard methodology presented in course 101A or 101B. The construction and implementation of these tools, with applications to urban location decisions, housing, transportation, labor markets, and the local public sector.
Mr. Ellickson, Mr. Hirsch

130. Public Finance. Lecture, three hours. Prerequisites: courses 101A and 101B, or consent of instructor. Contrast between organization of economic activity by government and the private sector. Analysis of alternative norms for governmental activity. Methods of assessing benefits of alternative public expenditure projects and burdens of alternative forms of taxations. The use of fiscal policy to achieve economic targets. Techniques of debt management and their interaction with monetary policy.
Mr. Haltiwanger, Mr. Plant, Mr. Robinson

133. State and Local Finance. Lecture, three hours. Prerequisite: course 130. The division of functions and revenues between state and local governments; the revenues, expenditures, and indebtedness of these governments. Analyses of state and local tax systems. Mr. Hirsch

M135. Economic Models of Public Choice. (Formerly numbered M135A.) (Same as Political Science M105.) Prerequisites: course 101A, any lower division political science course other than Political Science 1, and junior/senior standing, or consent of instructor. Analysis of the methods and consequences of arriving at collective decisions through political mechanisms. Topics include the free-rider problem, voting and majority choice, demand revelation, and political bargaining. Mr. Hirshleifer, Mr. Rogowski, Mr. Stein, Mr. Wallerstein

M136. Economic Models of Political Conflict and Conflict Resolution. (Formerly numbered M135B.) (Same as Political Science M106.) Prerequisites: course 101A, 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. The role of threats, promises, commitments. Models of the onset and termination of conflict. The conduct of war: strategy and tactics.
Mr. Hirshleifer, Mr. Stein

141. Principles of Statistical Decision. Lecture, three hours. Prerequisite: course 40 or equivalent. Errors of the first and second kind; economic loss functions; prior probabilities and Bayes' theorem. Analysis of classical and Bayesian approaches. Application to inventory and production problems. The value of information and implications for sampling design.
Mr. Ellickson, Mr. Hirshleifer, Mr. McCall, Mr. Ostroy

142. Probabilistic Microeconomics. Lecture, three hours. Prerequisites: courses 40 (or 41), 101A, 101B. Combination of the basic probability introduced in course 40 (or 41) with the microeconomic models presented in courses 101A and 101B in order to explain phenomena such as insurance, job search, and stock market behavior. Optimal production and consumption under uncertainty. A review of probability and an 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; the assumptions of the classical linear regression model; multiple regression, estimation, and inference; violations of the assumptions of the classical model (multicollinearity, heteroscedasticity, autocorrelation); autoregressive models, dummy variables. Emphasis on practical experience with regression analysis and interpretation; matrix algebra not required. Ms. Cameron, Mr. Plant (F,W)

144. Introduction to Mathematical Methods in Economics. Lecture, three hours. Prerequisites: courses 101A, 101B, two courses in calculus. An introduction to the 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 the role for market intervention.
Mr. Ellickson, Mr. Ostroy

146. Linear Models in Economics. Lecture, three hours. Prerequisite: a course in linear or matrix algebra. Not open for credit to students with credit for Mathematics 144, Electrical Engineering 136, or former Electrical Engineering 129A. Possible topics include the duality theory of linear programming and the simplex algorithm, input-output analysis, and two-person zero-sum games.
Mr. McCall, Mr. Ostroy (Sp)

147A. Introduction to Econometrics. Lecture, three hours. Prerequisites: two courses in calculus and course 41 (or Mathematics 150A-150B or 152A-152B), or consent of instructor. An introduction to econometrics, including a review of matrix algebra and statistical theory; the linear regression model; model specification; data collection; estimation and hypothesis testing; and an 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

150. Wage Theory. Lecture, three hours. Prerequisites: courses 101A and 101B, or consent of instructor. The supply and demand for labor. Analysis of government, union, and other constraints on the competitive system of wage determination. Wage level and structure. Wages and human capital theory.
Mr. Haltiwanger, Mr. Plant, Mr. Waldman

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.

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.
Mr. Hilton

160. Money and Banking. Lecture, three hours. Recommended prerequisite: course 102. Principles of money and banking in the United States; legal and institutional framework; money supply process; instruments, effects, and practice of monetary policy.
Mr. Darby

161. Monetary Theory. Lecture, three hours. Prerequisite: course 160. The 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. Mr. Clower, Mr. Darby

170. Monopoly and Competition. Lecture, three hours. Prerequisite: course 101A. A 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. The general problem of the relationship between private rights of action and competitive entry. Mr. Demsetz, Mr. Klein

171. Industrial Organization: Theory and Tactics. Lecture, three hours. Prerequisite: course 101A. 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 101A. Application of economic theory to legal rule formulation: study of the 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 the legal process.
Mr. Demsetz, Mr. Hirsch

173. Centralized Markets. Lecture, three hours. Prerequisite: course 101A. Enrollment priority to economics/business students. Organization and function of stock, bond, commodity, and foreign exchange markets. Theory and evidence relating to the efficiency of these markets in evaluating information , to their role in facilitating risk-bearing and capital allocation. The interrelationship between business finance and organized capital markets.
Mr. Demsetz, Mr. Klein, Ms. Simon

174. The Organization of the Firm. Lecture, three hours. Prerequisite: course 101A. Enrollment priority to economics/business students. The role of the firm in traditional economic theory and modern developments in the theory of the firm. The functions of ownership and management in the face of risk and opportunism. The internal organization of the firm. The problem of separation of ownership from control in the modern corporation. Determinates of firm size, vertical integration, and degree of specialization of the activities of firms. Decision making within the firm in a democratic setting. Mr. Demsetz, Mr. Klein

175. Economics of Transportation. Lecture, three hours. Recommended prerequisite: course 101A. The economic characteristics of transport; the functions of the different agencies; pricing and resource allocation in transport; public regulation of transport; urban transport; the modern transport problem. Mr. Hilton

176. Business and Government. Lecture, three hours. Prerequisites: courses 101A, 101B. Several aspects of the interaction between business and government, including the regulation of prices, entry, working conditions, natural resource use, policies of taxation, and subsidy of business. Mr. Demsetz

180. Comparative Economic Systems. Lecture, three hours. Prerequisites: courses 101A, 101B. A comparative analysis of capitalist and socialist economies. Pure models; attention to actual economies selected in the light of those models and the march of events. Mr. Murphy

181A. Development of Economic Institutions in Western Europe. (Formerly numbered C181.) 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. The open field village and enclosures. Crafts manufacturing and guild organization. Development of banking. Public finances and the role of government. (Offered approximately every third year.) Mr. Leijonhufvud

181B. Development of Economic Institutions in Western Europe. (Formerly numbered C181.) Lecture, three hours. Prerequisite: upper division standing. European economic history, 1700-1914. The industrial revolution in Britain and its spread to the continent. The rise of factories, industrial firms, and unions. Changes in the standard of living and demographic consequences. Imperial expansion and the decline of Britain. Worldwide diffusion of economic growth and the Gerschenkron hypothesis. (Offered approximately every other year.) Mr. Sokoloff

182. Centralized Economics Systems. Lecture, three hours. Prerequisites: courses 101A, 101B. Introduction to the theory of centralized systems and an examination of some centralized economies. Considerable attention to the economy of the U.S.S.R.; some attention to other economies selected in light of the centralized model and with a view to the march of current events. Mr. Murphy

183. Development of Economic Institutions in the United States. Lecture, three hours. A study of the changing economic conditions in the U.S. from Colonial times to the early 20th century and the effects of these changes on American society. Mr. Sokoloff

190. International Economics. Lecture, three hours. Limited to non-Economics Department majors. Not open to students with credit for course 191 or 192. A general introduction to international economics, based on an examination of the 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. Mr. Becketti

191. International Trade Theory. Lecture, three hours. Prerequisite: course 101B. Not open to students with credit for course 190. The theory of international trade: the bases, direction, terms, volume, and gains of trade. The effects of tariffs, quantitative restrictions, and international integration. The effects of free and restricted trade on economic welfare and political stability. Mr. Dollar

192. International Finance. Lecture, three hours. Prerequisite: course 102. Not open to students with credit for course 190. Emphasis on the interpretation of the balance of payments and the 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

199. Special Studies in Economics (2 or 4 units). Prerequisites: courses 101A, 101B, junior/senior standing, consent of instructor. May be repeated but may be applied only once toward the major requirements.

Graduate Courses

201A. Theory of Consumption and Exchange. Preferences, demand, exchange, pricing, and markets in an exchange economy. Emphasis on derivation and interpretation of theorems, illustrated by applications. Mr. Hirshleifer

201B. Theory of Production and Distribution. Theory of the firm, with particular attention to the demand for factors of production in the short and long runs. May cover an introduction to general equilibrium theory and welfare economics. Mr. Welch

201C. Theory of Interest and Capital. Intertemporal choice and equilibrium, interest, and accumulation of capital, decisions under uncertainty, and the allocation of risk.

202A. Macroeconomics I (Macrostatics). The Keynesian income-expenditure approach. Expenditures functions. Money demand and supply functions. The IS-LM model and its extensions. Large-scale macroeconometric models. Mr. Darby, Mr. Leijonhufvud

202B. Macroeconomics II (Macrodynamics). The neoclassical growth model. Money and growth. Adjustment dynamics. Rational expectations. Unemployment and inflation. The Keynesianmonetarist controversy. International macroeconomics. Stabilization policy. Mr. Darby, Mr. Leijonhufvud

202C. Macroeconomics III (Disequilibrium Approaches and Critiques). Microfoundations. The Wicksellian theme. Keynes and the classics. Theory of effective demand failures. Critiques and critics of mainstream macroeconomics. Mr. Darby, Mr. Leijonhufvud

M203A. Economics of Decision. (Same as Management M203A.) Prerequisites: rudiments of economic theory, calculus, probability, and statistics. Norms and facts of decision making in the household, business, and government. Consistent behavior in terms of personal utilities and probabilities. Multiattribute value theory. Departures from consistency: descriptive theories of behavior and resulting models. Mr. Erlenkotter, Mr. Sarin

M203B. Economics of Information. (Same as Management M203B.) Discussion, three hours. Prerequisites: rudiments of economic theory of the firm, calculus, probability, and statistics; course M203A or consent of instructor. Optimal decision and information rules. Risk aversion, stochastic dominance, and their impact on economic decisions in a stochastic environment. Mr. Lippman

M203C. Economics of Organization. (Same as Management M203C.) Prerequisites: courses M203A, M203B. Rational models of teams. Relation to the theory of games.

204A-204Z. Applications of Economic Theory. (Formerly numbered 204A-204H.) Lecture, three hours.

M205. Topics in Applied Game Theory. (Formerly numbered M204C.) (Same as Political Science M241.) Lecture, three hours. Prerequisites: calculus or introductory probability, and graduate standing in economics or consent of instructor. Survey and application of the major solution concepts to models of bargaining, oligopoly, cost allocation, voting power, etc. Course paper consists of a substantial game-theoretic model on a topic in the student's particular field of interest. Mr. Shapley

207. History of Economic Theory. Mr. Allen

211. Economic Development. Prerequisite: graduate standing in economics or consent of instructor. General survey of current literature, emphasizing empirical tests of development theories. Mr. Edwards

212. Applied Topics in Economic Development. Prerequisite: course 211 or consent of instructor. Applications of theories of development to case studies, including project analysis, policy-making at the national level, and economic planning, occasionally with emphasis on a single applied research area for the entire quarter. Mr. Edwards, Mr. Harberger

213A-213B. Selected Problems of Underdeveloped Areas. Seminars for graduate students.

221. Urban and Regional Economic Analysis I. Development of theoretical and empirical analysis of the major urban markets, including land and housing, transportation, labor, and the local public sector. Particular emphasis on interdependencies within and between these markets. Mr. Ellickson, Mr. Hirsch

222. Urban and Regional Economic Analysis II. Prerequisite: course 221. Development of theoretical and empirical analysis of the major urban markets, including land and housing, transportation, labor, and the local public sector. Particular emphasis on interdependencies within and between these markets. Mr. Ellickson, Mr. Hirsch

231. Public Finance. Criteria for organization of economic activity by government and the private sector. Use of cost-benefit analysis in selection of proposed public projects. Effects of various taxes. Use of tax policy in influencing level of economic activity and distribution of wealth. Debt management and its interaction with monetary and fiscal policy. Mr. Harberger, Mr. Somers

232. Economics of Government Expenditures. Evaluation of various areas of government expenditure on basis of efficiency and other criteria. Selection of appropriate discount rate. Use of program budgeting techniques to control expenditure. Areas covered include education, judicial system, prison reform reclamation, health insurance, child care, energy conservation, regulatory activity, defense. Mr. Somers

233. Topics in Public Finance. Lecture, three hours. Discussion of tax incidence and optimal taxation; analysis of various taxes: personal income, corporate income, property, capital gains, consumption, and windfall profits. The excess burden and the incidence of these tax policies, with emphasis on the different types of models economists have used to consider these questions. Other topics of current interest may be covered from year to year.

234. Economics of Federalism. Theories of perfect games and social organization. Collective goods, collective defense, and the role of government. Local public goods, spillovers, and intergovernmental relations. Mr. Thompson

M240. 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.

241A-241B-241C. The Economics of Uncertainty and Information. Prerequisites: calculus, introductory probability. Examination of how individuals adapt to the fact of uncertainty, with special emphasis on topics such as private versus social risk, adverse selection and moral hazard, and asset pricing under uncertainty. The ways in which individuals overcome uncertainty by engaging in informational activities. Topics include speculation, innovation, market signaling, and rational expectations. Emphasis switch from event uncertainty to market uncertainty, with focus on price searching, queueing, Brownian motion, and auction design. Mr. Hirshleifer, Mr. McCall, Mr. Riley

M242A-M242B. Game Theory. (Formerly numbered 242A-242B.) (Same as Political Science M242A-M242B.) Lecture, three hours. Prerequisites: course 245A or suitable mathematics courses. Elements of the theory of cooperative and noncooperative games, with applications to economic models. Strategic and coalitional games, minimax, Nash-Cournot equilibrium, bargaining theory, the core, value, and other solution concepts; applications to oligopoly, general exchange and production economies, allocation of joint costs. Mr. Shapley

243A-243B-243C. Workshop in Mathematical Economic Theory. Prerequisite: consent of instructor. Workshop for dissertation writers 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. Intriligator, Mr. Ostroy, Mr. Riley

244. Economic Modeling. Designed to help students learn to switch back and forth from the precise language of mathematics, as they analyze economic phenomena. Emphasis on the techniques of multivariate constrained optimization. Development of modeling skills by considering a sequence of economic issues (e.g., peak load pricing, regulation monopoly, capital asset pricing, Pareto efficiency). Mr. McCall, Mr. Riley

245A-245B-245C. Advanced Theory and Mathematical Economics. Prerequisite: course 201C or equivalent or consent of instructor. Selected advanced theoretical topics of current interest and an introduction to modern mathematical economics, including general equilibrium theory. Mr. Intriligator, Mr. Ostroy, Mr. Riley

246A. Statistical Foundations of Econometrics. Lecture, three hours. Provides the statistical tools necessary for an understanding of econometric techniques. Topics include random variables, distribution and density functions, sampling, estimators, estimation techniques, and statistical inference. Use of economic problems and examples.

246B. Introduction to Theory of Econometrics. Least-squares regress, generalized least squares, serial correlation, errors-in-variables, simultaneous equations, multicollinearity. Mr. Intriligator

246C. Applications of Econometrics. Selected econometric studies of consumption, investment, asset demand production functions, goods markets, factor markets, industrial organization, public finance, international trade. Instruction on use of computer. Students expected to write a research paper.

247. Single Equation Econometrics. Linear regression, specification error, autocorrelation, nonnormality, nonlinear estimation, outliers, qualitative dependent variables, aggregation structural change. Mr. Leamer

249. Multiple Equation Econometrics. Multivariate regression, error-in-variables, simultaneous equations, proxy variables (latent variables). Mr. Intriligator, Mr. Leamer

M249. Special Topics in Econometrics. (Formerly numbered 249.) (Same as Political Science M249.) Prerequisites: courses 247, 248. A seminar on one of several special topics such as Bayesian inference, time-series methods, nonlinear estimation, or qualitative variables, depending on the particular interests of the instructor. Mr. Intriligator, Mr. Leamer, Mr. McCall

251. Labor Economics I. Analysis of wage determination in competitive labor markets. Extension of wage determination to schooling and occupational choice. Empirical literature of life cycle earnings profiles. Special topics include discrimination, minimum wage legislation, and unionism. Mr. Welch

252. Labor Economics II. Prerequisite: course 251. Models of life cycle learning and work behavior together with one-period models of labor supply. Special emphasis on the recent literature of family decisions concerning labor supply behavior of women. Mr. Welch

253. Labor Problems. Mr. Welch

254A-254B-254C. Studies in Human Resource Economics. Prerequisite: consent of instructor. Workshop for dissertation writers and predissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. S/U grading. Mr. Welch

261. Monetary Economics I. Prerequisites: courses 202A, 202B, 202C. The existence of money; financial institutions and markets; supply of money; demand for money; money and wealth; money and growth; money and fluctuations in real income, employment, and inflation; interest rates; international monetary arrangements; monetary policy. Mr. Clower, Mr. Leijonhufvud, Mr. Thompson

262. Monetary Economics II. Prerequisites: courses 202A, 202B, 202C. The existence of money; financial institutions and markets; supply of money; demand for money; money and wealth; money and growth; money and fluctuations in real income, employment, and inflation; interest rates; international monetary arrangements; monetary policy. Mr. Clower, Mr. Leijonhufvud, Mr. Thompson

263A-263B-263C. Studies in Monetary Economics. Prerequisite: consent of instructor. Workshop for dissertation writers 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. Darby

271. Industrial Organization, Price Policies, and Regulation: Theory. Analysis of the institutional resolution of the problem of economic organization. Major economic aspects of the property right system underlying these institutions. The firm and the market compared from the 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

272. Industrial Organization, Price Policies, and Regulation: Policy. Prerequisite: course 271. 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

273. Public Utility Regulation. Theory, practice, and consequences of regulation in electric power, gas, water, telecommunications, broadcasting, and other regulated industries; experience of unregulated monopoly and public enterprises by way of contrast. Mr. Hilton

274. Mathematical Theory in Industrial Organization. Lecture, three hours. Prerequisites: courses 201A, 201B, 201C. Formal modeling of the theory of industrial organization: the principal-agent problem; entry deterrence; endogenous price discrimination; monopolistic competition; new approaches to rationality. Mr. Waldman

275. National Transport Policy. Regulation of surface and air carriers; pricing and investment in public transport facilities; policy toward the merchant marine. Mr. Hilton

277A-277B-277C. Workshop in Law and Economics. Prerequisites: graduate standing, consent of instructor. Workshop for dissertation writers 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. Demsetz, Mr. Klein

279A-279B-279C. Dissertation Research Workshop in Economic Organization. Discussion, three hours. Prerequisite: consent of instructor. A workshop for advanced graduate students writing dissertations in the areas of transaction and information costs and the role these costs play in economic organizations and market processes. S/U grading. Mr. Demsetz, Mr. Klein

281. Evolution of Economic Institutions in Western Europe. (Formerly numbered C281.) Lecture, three hours. Prerequisite: graduate standing or consent of instructor. Seminar on selected topics in European economic history, with emphasis on theoretical analysis of institutions and institutional change. Examples: theories of serfdom and its disappearance, open field system and enclosures, social classes and class conflict, guild vs. factory organization of manufacturing. Mr. Leijonhufvud

282. Soviet Economic Theory and Organization. The 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. Mr. Murphy

283. Evolution of Economic Institutions in the United States. An introduction to the professional literature of American economic history and to the most important substantive issues raised therein. Mr. Sokoloff

291. International Trade Theory. Theoretical and empirical analysis of the microeconomic relationships among countries. The determinants of commodity and factor flows, prices, and factor rewards. The effects of trade barrier. Mr. Allen, Mr. Leamer

292. International Finance. Theory of evidence on the balance of payments, exchange rate determination, international transmission of inflation and business cycles, macroeconomic policy in open economics, alternative monetary systems. Mr. Allen, Mr. Edwards, Mr. Leamer

293A-293B-293C. International Economics: Selected Topics. (Formerly numbered 293A-293B.) Discussion, three hours. Student presentation of dissertation research, lectures by visiting experts and resident faculty members, and student discussion of current published research, to expose students to critical analysis of their work and to suggest dissertation topics. S/U grading (based on oral and written performance). Mr. Edwards, Mr. Harberger, Mr. Leamer

299A-299B-299C. Workshop for Preparing a Dissertation Proposal. (Formerly numbered 299.) Lecture, three hours. Workshop for third-year graduate students who are preparing for their 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. Workshop 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. A teaching apprenticeship under the 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. 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, (213) 825-1011

Professors

Masanao Aoki, Ph.D. *(Computer Science)*
Bryan C. Ellickson, Ph.D. *(Economics)*
Michael D. Intriligator, Ph.D. *(Economics)*
Stephen E. Jacobsen, Ph.D. *(Electrical Engineering)*

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

Written applications are accepted from April 1 to May 15 only. Ten to 15 students are admitted based on space availability, completion of preparation for the major courses, and the GPA in those courses. Minimum qualifications for admission include the completion of six preparatory courses (four of the mathematics courses with a minimum GPA of 3.0 exclusively must be included) and an overall 2.75 GPA in the preparatory courses. Any transfer credit applied to the major will be used in GPA calculations; physics grades will not be calculated into the GPA.

Preparation for the Major

Required: Economics 1 and 2; Computer Science 10C or 10F or Program in Computing 3 or 10A; Mathematics 31A, 31B, 32A, 32B, 33A, 33B. Strongly recommended but not required: Physics 8A, 8B, 8C, 8D. 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 will result 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: Fourteen upper division courses as follows: six courses in economics selected from Economics 101A and above, including 101A, 101B, 102, and one course from 141, 142, 144, 145, 146, 147A, 147B; six courses in system science selected from Computer Science 170, Electrical Engineering 102, 103, 131A, 131B, 136, 141, 142, including 131A (or Mathematics 150A or 152A) and 131B (or Mathematics 151 or 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 Computer Science 170 and 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

The College of Letters and Science offers a program of courses through which you may receive credit toward a credential to teach in California elementary schools. For details, see "Diversified Liberal Arts" earlier in this chapter.

English

2225 Rolfe Hall, (213) 825-4173

Professors

Michael J. B. Allen, Ph.D.
Martha Banta, Ph.D.
Calvin Bernard Bedient, Ph.D.
Charles Ashton Berst, Ph.D.
A. R. Braunmuller, Ph.D., *Vice Chair*
Daniel G. Calder, Ph.D., *Chair*
Michael J. Colacurcio, Ph.D.
Vinton A. Dearing, Ph.D.
Reginald A. Foakes, Ph.D.
Patrick K. Ford, Ph.D.
Robert A. Georges, Ph.D.
Gerald Jay Goldberg, Ph.D.
George Robert Guffey, Ph.D.
Charles Bennett Gullans, Ph.D.
Henry Ansgar Kelly, Ph.D., *Vice Chair*
Jascha Kessler, Ph.D.
Robert Starr Kinsman, Ph.D.
V.A. Kolve, Ph.D. *(The UCLA Foundation Professor)*
Richard Alan Lanham, Ph.D.
Richard D. Lehan, Ph.D.
Anne Kostelanetz Mellor, Ph.D.
Maximillian Erwin Novak, D.Phil., Ph.D.
Waldo Woodson Phelps, Ph.D. *(Rhetoric)*
Joseph N. Riddel, Ph.D.
Florence Ridley, Ph.D.
Alan Henry Roper, Ph.D.
George S. Rousseau, Ph.D.
William David Schaefer, Ph.D.
Paul Roland Sellin, Ph.D.
Paul Douglas Sheats, Ph.D.
Georg Bernhard Tennyson, Ph.D.
Peter Larsen Thorslev, Jr., Ph.D.
Alexander Welsh, Ph.D.
D. K. Wilgus, Ph.D.
Thomas Richard Wortham, Ph.D.
Ruth B. Yeazell, Ph.D.
Stephen Irwin Yenser, Ph.D.

Emeritus Professors

Robert Martin Adams, Ph.D.
Robert William Dent, Ph.D.
John Jenkins Espey, B.Litt., M.A.
Robert Paul Falk, Ph.D.
Charles V. Hartung, Ph.D.
Paul Alfred Jorgensen, Ph.D.
Blake Reynolds Nevius, Ph.D.
Ada Blanche Nisbet, Ph.D.

Associate Professors

Walter Eldon Anderson, Ph.D.
Charles Linwood Batten, Jr., Ph.D.
Frederick Lorrain Burwick, Ph.D.
Edward Ignatius Condren, Ph.D.
James Edward Goodwin, Ph.D.
Christopher Waldo Grose, Ph.D.
Albert David Hutter, Ph.D.
Gordon L. Kipling, Ph.D.
Jack Kolb, Ph.D.
Kenneth Robert Lincoln, Ph.D.
Robert M. Maniquis, Ph.D.
Joseph F. Nagy, Ph.D.
Barbara Lee Packer, Ph.D.
Raymund Arthur Paredes, Ph.D.
Jonathan F.S. Post, Ph.D.
Karen Elizabeth Rowe, Ph.D.
Richard Alan Yarborough, Ph.D.

Assistant Professors

Susan Brienza, Ph.D.
King-Kok Cheung, Ph.D.
Donka Minkova, Ph.D.
Michael Andrew North, Ph.D.
Vincent P. Pecora, Ph.D.
Jeffrey Rubin-Dorsky, Ph.D.
J. Fisher Solomon, Ph.D.
Seth Joshua Weiner, Ph.D.

Senior Lecturers

David Stuart Rodes, Ph.D.
Jerome Cushman, A.B., B.S.L.S., *Emeritus*
Everett L. Jones, M.A., *Emeritus*

Adjunct Professor

Brian Moore

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 six 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 B). 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) any combination of five courses in foreign language and foreign literature, including foreign literature in translation (see course listings later in this section of the catalog). Italian 46 and former courses 46A-46B-46C may not be applied. For option 2, the department especially recommends Classics 144, Humanities C107, 116. These 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; the department especially recommends Classics 144, 161, Humanities C107, 116.

Special Programs

The department offers special programs in American studies and general literature. For both 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 planning to do graduate work in English should consult the departmental counselor before selecting either of these.

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 109 and 178; two courses from 142A, 142B, 143; three courses from 170, 171, 172, 173, 174; and one course pertaining to American studies selected from the 180 or 190 series, 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, art, 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 142A and 142B; 141A, 141B, or 143; 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 Major

For this major, you must satisfy all requirements listed under "Preparation for the Major," including the foreign language requirement. The major 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. If you are planning to choose this major, you are encouraged to take course 20; for further details, contact the departmental counselor.

Major for International Students

The department offers a special major in English to bona fide international students whose native language is other than English. For this major, 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 major itself: English (ESL) 103J, 106J, 109J; two courses from English 100A through 199; 122; 142A, 142B; and four additional courses from those numbered 140A through 199. If you complete this major and wish to pursue graduate study, you should consult the departmental counselor about programs of study and requirements for admission.

Teaching Credential in English

If you wish to obtain a credential to teach English, you should declare your intention at the beginning of your junior year and seek the advice of the departmental counselor in planning a coherent program. The department requires English 120A or 120B or 120C, 130, and at least one American literature course selected from 170 through 174 as part of, or in addition to, the major. You must also complete English 300 before you can be certified to begin student teaching. You are encouraged to select additional courses in language, children's literature, literature for adolescents, American literature, and literature for minorities as some of your electives. Note: *Students who enter the Graduate School of Education seeking a credential to teach English must, before beginning their required practice teaching assignment, be certified by the Department of English as prepared to teach this subject; the department will not certify any student who has not completed the courses specified above.* For additional information on courses leading to the teaching credential, consult the Graduate School of Education (201 Moore Hall) or the Department of English.

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 the second 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 the Fall Quarter of your senior year, you must take course 199HA. During the 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.

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 for those who wish to pursue the Ph.D. 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 most 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 correspondingly higher scores on the Literature in English Subject Test. A minimum of three letters of recommendation attesting to your ability to succeed in graduate study are also required. Care should be taken with the statement of purpose, since it is considered a sample of your writing ability. For a descriptive brochure, write to the Graduate Counselor, Department of English, 2225 Rolfe Hall, UCLA, Los Angeles, CA 90024.

If you are limited on admission to the M.A. program, you may continue in the doctoral program by passing the first qualifying examination. 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 a reading knowledge of any foreign language. This requirement should be satisfied at the beginning of your first quarter in residence, but in any event no later than the mid-point of the quarter in which you complete all degree requirements.

If you are pursuing the Ph.D., you are normally expected to have a reading knowledge of two foreign languages, or to demonstrate a superior proficiency in a single language. 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., including one course in bibliography (English 200) and one course in literary criticism (course 201) in your first year. If you enter the program with an M.A. in English, you are presumed to have fulfilled the nine-course requirement but must take courses 200 and 201 or their equivalents prior to the first qualifying examination. You are also urged to begin fulfilling the second-stage requirements at this time.

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 select the examination option for the M.A. or are pursuing the Ph.D. degree, you take the first qualifying examination after passing the nine required courses and satisfying at least one of the foreign language requirements. The examination consists of four written tests of four hours each. The four parts are graded high pass, pass, low pass, or fail; in order to pass the examination as a whole, you must have maintained a passing grade on each of the parts. A grade of low pass on all four parts is considered a failure; 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, philology, and bibliography requirements are available from the department.

Thesis Option: If you select the thesis option for the M.A., you must request a thesis committee (three faculty members) from the graduate counselor at least two quarters 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 must take five courses from the 200 series in English, including a minimum of three seminars. 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, consists of two parts. The first covers a 100-year period or longer in English or American literature. The second part deals with your prospectus, a substantially researched paper which has been approved by the committee chair and distributed to the committee at least one week before the scheduled examination. The committee must certify both that you are competent in the historical field and that the prospectus has been approved. If you fail one or both parts of the examination, you may, at the discretion of the committee, repeat it once only.

Third Stage

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. Basic Review of English Usage (No credit). See listing under "English Composition."

B. Fundamentals of Exposition (No credit). 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. An 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. An 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. A 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. A 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. A 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. Berst, Mr. Kolb, Mr. Solomon

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 the fundamentals of creative writing. Emphasis either on poetry, fiction, or drama, depending on the wishes of the instructor(s) during any given quarter. Readings from assigned texts and weekly writing assignments required.

30. Intermediate Exposition. See listing under "English Composition."

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. A study of selected masterpieces of English literature before 1800, including the 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. A study of selected masterpieces of English literature from 1800 to the present, including the 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. An introduction to the chief American authors, with emphasis on the poetry, nonnarrative prose, and short fiction of such writers as Poe, Dickinson, Emerson, Whitman, Twain, Frost, and Hemingway. Mr. Rubin-Dorsky, 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. The 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. Paredes, Mr. Rubin-Dorsky

90. Shakespeare. Prerequisite: satisfaction of Subject A requirement. Not open for credit to English majors or students with credit for course 142A or 142B. A survey of Shakespeare's plays, including comedies, tragedies, and histories, selected to represent Shakespeare's breadth, artistic progress, and total dramatic achievement.
Mr. Guffey, Mr. Rodes, Ms. Rowe

Upper Division Courses

100A. Introduction to Poetry. Prerequisite: satisfaction of Subject A requirement. Recommended for teaching credential candidates. A study of critical issues (metrics, diction, figurative language, symbolism, irony and ambiguity, form and structure) and aesthetic issues, including evaluative criteria, followed by the close critical analysis of a selection of representative poems. Mr. Grose, Mr. Sheats, Mr. Thorslev

100B. 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 the dramatic text; study of issues such as plot construction, characterization, special uses of language in drama, methods of evaluation. Mr. Berst

100C. Introduction to Fiction. Prerequisite: satisfaction of Subject A requirement. An 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. Mr. Anderson

100D. Introduction to Special Topics and Genres. Prerequisite: satisfaction of Subject A requirement. A 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. Mr. Tennyson, Mr. Thorslev

100W. Intensive Writing (2 units). See listing under "English Composition."

100WH. Intensive Writing (Honors) (2 units). See listing under "English Composition."

102. The Short Story in England and America. Prerequisite: satisfaction of Subject A requirement. A historical survey of the short story as a genre, from the 19th century to the present. Mr. Anderson

103. Jewish American Fiction. Prerequisite: satisfaction of Subject A requirement. The study of the fiction of Jewish writers in America, such as Bellow, Malamud, and Roth, focusing on the encounter of Jewish ethical ideals and social values with the contemporary environment. Mr. Novak

M104A. Early Afro-American Literature. (Formerly numbered M104.) (Same as Afro-American Studies M104A.) Prerequisite: satisfaction of Subject A requirement. An introductory survey of the Afro-American literary tradition from the 18th century to World War I, including oral and written forms (folktales, spirituals, sermons; prose, poetry). Emphasis on the use of literature in the antislavery movement and the rise of black writing at the turn of the century. Writers studied include Phillis Wheatley, David Walker, Frances Harper, Frederick Douglass, Paul Laurence Dunbar, Charles W. Chesnutt, Booker T. Washington, Pauline Hopkins, W.E.B. DuBois, and James W. Johnson. Mr. Yarborough

M104B. Afro-American Literature since the 1920s. (Formerly numbered M104). (Same as Afro-American Studies M104B.) Prerequisite: satisfaction of Subject A requirement. An introductory survey of the Afro-American literary tradition from the 1920s to the present, including oral and written forms (ballads, blues, speeches; prose, poetry, drama). Emphasis on the Harlem Renaissance and black writing in the 1960s. Writers studied include Jean Toomer, Claude McKay, Langston Hughes, Stirling Brown, Richard Wright, James Baldwin, Gwendolyn Brooks, Ralph Ellison, Toni Morrison, Amiri Baraka (LeRoi Jones), and Alice Walker. Mr. Yarborough

M105. The Chicano Experience in Literature. (Same as Chicano Studies M105.) Prerequisite: satisfaction of Subject A requirement. The study of literature in English by and about Chicanos. Survey of the depiction of the Chicano experience in American literature generally, with emphasis on the development of Chicano literature itself, its cultural backgrounds, and distinctive uses of language. Mr. Paredes

106. Native American Literary Studies. Prerequisite: satisfaction of Subject A requirement. The study of Native American oral cultures through translated documents (song-poems, life-stories, myths, tales, dream visions, speeches) and/or the images in writing about Native Americans (poetry, fiction, history, anthropology, sociology). Mr. Lincoln

M107. Women in Literature. (Same as Women's Studies M107.) Prerequisite: satisfaction of Subject A requirement. A survey of literary works by and about women. The delineation of women in English and American literature, studies in historical and contemporary themes, and the evolution of forms and techniques in poetry, fiction, and biography.
Ms. Brienza, Ms. Mellor, Ms. Rowe, Ms. Yeazell

108A-108B. The English Bible as Literature. Prerequisite: satisfaction of Subject A requirement. The principal literary monuments of the Old and New Testaments in the King James Version. **108A.** The Old Testament; **108B.** The New Testament.
Mr. Dearing, Mr. Post

108C. The English Bible as Literature: Special Topics. Prerequisite: satisfaction of Subject A requirement. A study of the English Bible, with attention to particular literary themes, motifs, and genres. Possible discussion of the influence of the Bible on discrete periods or individual authors in English literature. May be repeated for credit.
Mr. Dearing, Mr. Kinsman

109. Interdisciplinary Approaches to Literature. Prerequisite: satisfaction of Subject A requirement. The 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. The specialized study of the work of a single poet, dramatist, prose writer, or novelist. May be repeated for credit.

M111A. The Literature of Myth and Oral Tradition. (Same as Folklore M111.) Prerequisite: satisfaction of Subject A requirement. A study of myth, dramatic origins, oral epic, folktale, and ballad, emphasizing Indo-European and Semitic examples. Mr. Nagy

M111B. Anglo-American Folk Song. (Same as Folklore CM106.) Prerequisites: satisfaction of Subject A requirement, junior standing. A survey of Anglo-American balladry and folk song, with attention to historical development, ethnic background, and poetic and musical values. Mr. Wilgus

M111C. British Folklore and Mythology. (Same as Folklore M121.) Prerequisites: satisfaction of Subject A requirement, junior standing. A survey of the 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.) Prerequisite: Folklore 101 or consent of instructor. A survey of the early materials, chiefly literary, for the study of the mythic traditions of the Celtic peoples, ranging from ancient Gaul to medieval Ireland and Wales. Mr. Ford

M111E. Survey of Medieval Celtic Literature. (Same as Folklore M112.) Prerequisite: satisfaction of Subject A requirement. Knowledge of Irish or Welsh is not required. A general course dealing with Celtic literature from the earliest times to the 14th century. Mr. Ford

M111F. Celtic Folklore. (Same as Folklore M127.) Prerequisite: Folklore 101 or consent of instructor. The folkloric traditions of modern Ireland, Scotland, and other Celtic countries, with attention to current techniques of folkloristic research. Mr. Nagy

M111G. Oral Traditions in Africa. (Same as Folklore M155.) Prerequisite: upper division standing. A survey of African folk traditions: folktale, epic, heroic poetry, and folk song.

112. Children's Literature. Prerequisite: satisfaction of Subject A requirement. A study of the 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 the 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 the interests and reading habits of young adults.

114. World Literatures in English. Prerequisites: satisfaction of Subject A requirement, consent of instructor. A survey of contemporary literature from English-speaking regions of the world, reviewing the 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. Kinsman, Mr. Povey

115A. American Popular Literature. (Formerly numbered 115.) Prerequisite: satisfaction of Subject A requirement. A study of the 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. An examination of the social functions of literature. Mr. Nagy

116. Science Fiction. Prerequisite: satisfaction of Subject A requirement. A study of science fiction and speculative literatures. Mr. Guffey

117. Detective Fiction. Prerequisite: satisfaction of Subject A requirement. A study of British and American detective fiction and the literature of detection.
Mr. Hutter

118. Film and Literature. Prerequisite: satisfaction of Subject A requirement. A study of the interdisciplinary relationships between film and literature, including theme and structure, and focusing on cinematic adaptations of literary works. Mr. Goodwin

120A. *Language Study for Teachers:* Elementary School. See listing under "English Composition."

120B. Language Study for Teachers of English: Secondary and Postsecondary. See listing under "English Composition."

120C. Language Study for Teachers of Subjects Other Than English: Secondary and Postsecondary. See listing under "English Composition."

121. The History of the English Language. Prerequisite: satisfaction of Subject A requirement. A study directed toward English majors of the main features in the grammatical, lexical, and phonetic condition of the English language from Indo-European time to the present. Mr. Condren, Ms. Minkova

122. Introduction to the Structure of Present-Day English. Prerequisite: satisfaction of Subject A requirement. An introduction to the techniques of linguistic description as applied to the pronunciation, grammar, and vocabulary of modern English.
Ms. Minkova

130. Composition for Teachers. See listing under "English Composition."

131A-131H. Advanced Exposition. 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 the writing of poetry, with practice in the standard forms and metres and the study of techniques. Classroom discussion based on student use. Only one course in the sequence may be repeated for credit.
Mr. Gullans, Mr. Kessler, 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 quarter. Some of these may, with the instructor's consent and the student's wish, be substantial revisions of the other stories presented. Classroom discussion based on stories presented. Only one course in the sequence may be repeated for credit.
Mr. Goldberg, Mr. Kessler, Mr. Moore

135A-135B-135C. Creative Writing: Drama. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, consent of instructor (following submission of writing samples). An exploration of the 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 the 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. A study of some of the major historical documents and theoretical statements in the 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 the major critical positions posed and developed by these writers, the basis of their theoretical positions, and the practical consequences of those positions. Possible discussion of recent trends in criticism.
Mr. Kolb, Mr. Pecora, Mr. Solomon

140B. Criticism: Special Topics. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. A study of limited periods and specialized issues and approaches in the history of literary criticism, including moral, biographical, sociological, psychological, formal, structural, and deconstructionist. Area of concentration determined by instructor and listed in the *Schedule of Classes*. Some study of literary texts, to illuminate the value and practical application of the approach, may be required.
Mr. Riddel, Mr. Solomon

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 the 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 the department's Chaucer requirement.
Mr. Condren, Mr. Kelly, Ms. Ridley

142A. Shakespeare: The Poems and Early Plays. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. An intensive study of selected poems and representative comedies, histories, and tragedies through *Hamlet*.
Mr. Allen, Ms. Cheung, Mr. Post

142B. Shakespeare: The Later Plays. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C, 142A. An intensive study of representative problem plays, major tragedies, Roman plays, and romances.
Mr. Braunmuller, Mr. Foakes, Mr. Kipling

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. A study of the major works of Milton, with emphasis on *Paradise Lost*. Mr. Grose, Mr. Guffey, Ms. Rowe

150. Later Medieval Literature. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. Reading and historical explication of the major writers of the 14th and 15th centuries (e.g., the Gawain-poet, Langland, Gower, Malory, miracle and morality plays, prose, lyrics, and the minor poems of Chaucer). The more difficult texts read in modernized form. Mr. Condren, Mr. Kinsman, Mr. Kipling

151. Elizabethan Literature. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. A study of English literature of the 16th century, with special emphasis on the development and interrelationships of poetry, prose, fiction, and literary theory and criticism during the reign of Elizabeth I.
Mr. Kipling, Mr. Weiner

152. The Drama to 1642. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. A study of the English drama, excluding Shakespeare, from its beginning to the closing of the theaters, with special emphasis on plays of the Elizabethan and Jacobean periods.
Mr. Braunmuller, Mr. Kipling

153. Literature of the Early 17th Century, 1600-1660. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. A study of the major works as literary documents and as products of 17th-century thought. The work of Milton excluded.
Mr. Grose, Mr. Gullans, 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. A study of the major works as literary documents and as products of the Restoration and earlier 18th-century thought.
Mr. Dearing, 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. A study of major works as literary documents and as products of later 18th-century thought.
Mr. Dearing, Mr. Novak, Mr. Roper

156. The Drama, 1660-1842. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. A survey of the 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. A survey of the works of the 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. An intensive study of the 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. An intensive study of the 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, Mr. Thorslev

162. Earlier Victorian Poetry and Prose. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. A study of the poetry and prose of the Victorian age from the 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. A study of the 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. A survey of the major English novelists from Dickens through Hardy.
Mr. Anderson, Mr. Hutter, Ms. Yeazell

165. 20th-Century British Poetry. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. A survey of the 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. A survey of the major British novelists and short story writers, including Conrad, Joyce, Woolf, and Lawrence, from 1900 to the present.
Ms. Brienza, Mr. Lincoln, Mr. Pecora

167. The Drama, 1842-1945. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C (for theater, film, and television majors the 10A, 10B, 10C prerequisites are waived). A survey of British and American drama, with its principal continental influences, from 1842 through World War II.
Mr. Berst, Mr. Braunmuller, Mr. Goodwin

168. The Drama, 1945 to the Present. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. A study of British and American drama, with its principal continental influences, since World War II. Mr. Berst, Mr. Braunmuller

170. American Literature to 1800. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. A historical survey of American literature through the Colonial and early national periods.
Mr. Colacurcio

171. American Literature, 1801-1865. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. A historical survey of American literature, including fiction, from the beginning of the 19th century to the end of the Civil War.
Ms. Packer, Mr. Rubin-Dorsky, Mr. Wortham

172. American Literature, 1866-1912. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. A historical survey of American literature from the end of the Civil War to the founding of *Poetry* magazine.
Ms. Banta, Mr. Rubin-Dorsky, Mr. Wortham

173. American Poetry, 1912-1945. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. The development of American poetry from 1912 through World War II, including the works of Frost, Eliot, Pound, Williams, and Stevens.
Mr. Bedient, Mr. Riddel, Mr. Yenser

174. American Fiction, 1912-1945. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. The development of the American novel and short story from 1912 through World War II, including the works of Hemingway, Fitzgerald, Faulkner, and Stein.
Mr. Goodwin, Mr. Lehan, Mr. Yarborough

176. American Poetry, 1945 to the Present. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. A study of contemporary American poetry. Mr. Riddel, Mr. Yenser

177. American Fiction, 1945 to the Present. Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. A study of the contemporary novel and short story.
Ms. Brienza, Mr. Goldberg

178. Perspectives in the Study of American Culture. (Formerly numbered 175.) Prerequisites: satisfaction of Subject A requirement, courses 3, 4, 10A, 10B, 10C. An 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 the application of literary methodology to a 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. For the author, period, genre, or subject to be studied, see the *Schedule of Classes* for any given quarter. 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. Specalized 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. The intensive study of some aspect of the 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.) A 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.
Mr. Yarborough

197H. Honors Seminar for Freshmen and Sophomores. Seminar, three hours. Prerequisites: courses 3, 4. Limited to 15 students. Recommended for lower division students who anticipate entering the honors program in English during their junior year. Content varies; see departmental counselor for information.
Mr. Batten

199. Special Studies in English (2 to 4 units). Prerequisite: consent of instructor. An intensive directed research project. To enroll or obtain information, see departmental counselor.

199HA. Honors Seminar. Prerequisite: course 140A. An introduction to research techniques and a study of various approaches and applications of critical methodology as it relates to the interpretation and evaluation of texts. Mr. Solomon (F)

199HB-199HC. Honors Tutorial. (Formerly numbered 199H.) Prerequisites: course 199HA, consent of instructor. A tutorial in which students write a thesis under the direction of a faculty member. In Progress grading. (W, Sp)

199I. Independent Study for Internships (2 to 4 units). Prerequisite: consent of instructor. An independent study course to be supervised jointly by the Field Studies Office and the faculty supervisor. Further supervision to be provided by the business for which the student is doing the internship. P/NP grading.

Rhetoric

170. Rhetoric of Winston Churchill. Prerequisites: English B, upper division standing. An intensive study of the speeches of Winston Churchill during the wilderness years, the 1930s, and the wartime years. The background and impact of these speeches.
Mr. Phelps

171. Rhetoric of Franklin Roosevelt. Prerequisites: English B, upper division standing. An intensive study of major speeches and fireside chats during Roosevelt's presidency. The background and impact of these speeches. Mr. Phelps

172. Rhetoric of Harry S. Truman. Prerequisites: English B, upper division standing. An intensive study of the major speeches of President Harry S. Truman. The background and impact of these speeches examined in relation to the social and political context of the Truman years. Mr. Phelps

180. Contemporary Rhetorical Theory. Prerequisites: senior standing, one course from 170, 171, or 172, consent of instructor. Intensive study of contemporary rhetorical theory, including Winans, Woolbert, Phillips, Brignance, Blankenship, and others. Reports and papers. Mr. Phelps

Graduate Courses

200. Approaches to Literary Research. The bibliographical tools of English and American literary scholarship; an introduction to descriptive bibliography and basic methods of research.
Mr. Batten, Mr. Kipling

201. The History of Literary Criticism. The study of the major documents in Western literary theory from Plato to the present.
Mr. Lehan, Mr. Pecora, Mr. Solomon

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. Mr. Dearing

203. Computers and Literary Research. Prior knowledge in this area is not required. Practice in writing and using computer programs for the analysis of literary style, content, and authorship.
Mr. Dearing

204. History of Rhetoric. Reading of the basic texts in the history of rhetoric and selections from standard commentaries. Survey of the classical period and the medieval-to-modern period in alternate years.
Mr. Lanham

M205. Perspectives in American Folklore Research. (Same as Folklore M205.) Prerequisites: Folklore 101, one other upper division folklore course. An examination of American folklore studies compared and contrasted with investigations in other countries, with emphasis on the principal conceptual schemes and research orientations employed in the study of folklore in American society.
Mr. Georges, Mr. Jones, Mr. Stern

210. History of the English Language. A detailed study of the 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 the student 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 quarter.
Mr. Calder, Mr. Condren

212. Middle English. Prerequisite: course 211. Detailed study of the linguistic aspects of Middle English and of representative examples of the better prose and poetry.
Mr. Condren, Ms. Minkova, Ms. Ridley

213. Early Modern English. (Not the same as course 213 prior to Fall Quarter 1985.) Detailed study of the phonology, morphology, syntax, and vocabulary of English between 1450 and 1750. Description and analysis of the changes in the language in relation to the intellectual, political, and social characteristics of the period. Ms. Minkova

214. Modern English. (Formerly numbered 213.) Description and analysis of modern English phonology, grammar, and vocabulary, using the theory and techniques of contemporary linguistics. A survey of the evolution of American English and an account of the characteristic phonological and grammatical features of the 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. Ford, Mr. Nagy

217A-217B. Medieval Welsh. Prerequisite: consent of instructor. Studies in grammar. Readings in the Mabinogi and other texts. Comparative considerations. Mr. Ford

218. Celtic Linguistics. Prerequisite: consent of instructor. A survey of salient features of the Celtic linguistic stock in its Gaelic and British branches, with reference to the position of Celtic within Indo-European languages. Mr. Ford

The following courses stress wide reading in major authors, works, and intellectual developments.

220. Readings in Medieval Literature.
Mr. Kelly, Mr. Kolve, Ms. Ridley

221. Readings in Renaissance Literature.
Mr. Allen, Mr. Kinsman, Mr. Lanham

222. Readings in Earlier 17th-Century Literature.
Mr. Guffey, Mr. Gullans, Mr. Sellin

223. Readings in Restoration and 18th-Century Literature. Mr. Novak, Mr. Roper, Mr. Rousseau

224. Readings in Romantic Literature. Mr. Burwick, Ms. Mellor, Mr. Thorslev

225. Readings in Victorian Literature. Mr. Tennyson, Mr. Welsh

226A. Readings in Earlier American Literature. Mr. Colacurcio, Mr. Rubin-Dorsky, Mr. Wortham

226B. Readings in 19th-Century American Literature. Ms. Packer, Mr. Wortham

227. Readings in 20th-Century American Literature. Mr. Lehan, Mr. Paredes, Mr. Riddel

228. Readings in 20th-Century British Literature. Mr. Bedient, Mr. Kessler

229A. Readings in the Novel. Mr. Lehan, Mr. Novak

229B. Readings in the Drama. Mr. Berst, Mr. Braunmuller

Seminar courses (230 through 260) are open to all graduate students with adequate preparation and may be repeated for credit. Enrollment is with consent of instructor; continuing students must sign up for seminars before the end of the preceding quarter. A prospectus announcing topics for all seminars will be available in the department office in early summer for the ensuing academic year.

230. Workshop in Creative Writing. Prerequisite: consent of instructor, following submission of writing samples in the specified genre (poetry, fiction, or drama). May be repeated but may not satisfy more than one of the nine courses required for the first qualifying examination nor any of the five courses required for the second qualifying examination. Mr. Kessler, Mr. Yenser

M235. African Myth and Mythology. (Same as Folklore M235.) Prerequisite: graduate standing. The methods of analyzing and appreciating African myths and mythological systems.

239. Explication (2 units). Lecture, one hour; discussion, one hour. Recommended for first-stage Ph.D. candidates. Seminar to provide training in practical criticism. May be repeated for credit. S/U grading. Mr. Roper, Mr. Yenser

240. Studies in the History of the English Language. Individual seminars dealing with any single historical period from the Old English period to the present or the development of a particular linguistic characteristic (phonology, syntax, semantics, dialectology) through various periods. Ms. Minkova

241. Studies in the Structure of the English Language. Prerequisite: consent of instructor. Topics in various aspects of the structure of modern English, especially syntax and semantics. Ms. Minkova

242. Language and Literature. The 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 the contributions of specific groups of linguists to literary analysis. Ms. Brienza, Mr. Grose, Mr. Lanham

M243A. The Ballad. (Same as Folklore M243A.) Prerequisite: consent of instructor. A study of the English and Scottish popular ballads and their American derivatives, with some attention to European analogues. Mr. Wilgus

M243B. Problems in Ballad Scholarship. (Same as Folklore M243B.) Prerequisite: course M243A or consent of instructor. Intensive investigation of a problem or problems in the study of the popular ballad. Mr. Wilgus

244. Old and Medieval English Literature. Studies in the 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. Condren, Mr. Kelly, Ms. Ridley

246. Renaissance Literature. Studies in the poetry and prose of Renaissance English literature, exclusive of Shakespeare; limits of investigation set by individual instructor. Mr. Allen, Mr. Kinsman, Mr. Kipling

247. Shakespeare. Mr. Allen, Mr. Braunmuller, Mr. Foakes

248. Earlier 17th-Century Literature. Studies in the poetry and prose of 17th-century English literature up to the Restoration; limits of investigation set by individual instructor. Mr. Guffey, Mr. Gullans, Mr. Sellin

249. Milton. Studies in the poetry and prose of John Milton; particular emphasis set by individual instructor. Mr. Grose, Mr. Post, Mr. Sellin

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. The Romantic Writers. Mr. Burwick, Mr. Sheats, Mr. Thorslev

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. Kessler, Mr. Yenser

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. Mr. Lehan, Mr. Riddel, Mr. Yenser

256. Studies in the Drama. Studies in the drama as a genre from its beginning to the present; limits of investigation set by individual instructor. Mr. Berst, Mr. Braunmuller, Mr. Foakes

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. Kessler, Mr. Riddel

258. Studies in the Novel. Studies in the evolution of the genre from its beginning to the present; limits of investigation set by individual instructor. Mr. Lehan, Mr. Novak, Mr. Welsh

259. Studies in Criticism. Mr. Guffey, Mr. Hutter, Mr. Riddel

260. Studies in Literature and its Relationship to the Arts and Sciences. Studies in the interrelationships of literature, the arts, and the sciences; limits of investigation set by individual instructor. Mr. Guffey, Mr. Lincoln, Mr. Rousseau

M260A. Topics in Asian American Literature. (Same as Asian American Studies M297A.) Lecture, three hours. A graduate seminar that examines and critically evaluates writings of Asian Americans.

M261. Studies in African Literature in English. (Formerly numbered M271.) (Same as English as a Second Language M285K.) Prerequisite: consent of instructor. Special problems and trends of African literature in English. Mr. Povey (W)

M262. Studies in Afro-American Literature. (Formerly numbered M273.) (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 the aesthetic, cultural, and social backgrounds of Afro-American writing. May be repeated for credit.

263. Celtic Literature. Lecture, three hours. Prerequisite: knowledge of one of the ancient or modern Celtic languages. Studies in the poetry and prose of early and modern Celtic literatures, chiefly Irish and Welsh; limits of investigation set by individual instructor. Mr. Ford, Mr. Nagy

264. Studies in Rhetoric. Lecture, three hours. Special topics in classical and modern rhetoric, including substantial practice in the rhetorical analysis of literary texts. Mr. Lanham

265. Seminar in 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 the Statistical/Biomathematical Consulting Clinic). Mr. Dearing

M266. Cultural World Views of Native America. (Same as American Indian Studies M200B.) Seminar, three hours. Exploration of written literary texts drawn 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 drawn from literary analysis, structural anthropology, folklore, linguistics, and ethnomusicology.

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 the Teaching of English. Prerequisite: course 120B or Linguistics 100. Focus on one of a variety of topics of special current interest. Mr. Lanham

M274. The Teaching of English for Minority Groups. (Formerly numbered 274.) (Same as English as a Second Language M224K.) Prerequisites: English (ESL) 370K and Linguistics 100, or consent of instructor. In-depth description of the dialects of English and of other languages (such as Spanish) used by groups of students in American schools. The origins, variations within, and current status of language varieties such as Black English and Chicano Spanish, relevant research, and educational implications. Mr. Bowen, Ms. McGroarty

275. Stylistics and the Teaching of English. Strongly recommended for teaching assistants. An introduction to the study of language and style and its application to the teaching of English, including rhetoric, linguistics, and grammar. Ms. Brienza, Mr. Lanham

300. The Teaching of 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. A teaching apprenticeship under the 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."

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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. S/U grading.

596. Directed Individual Study. Prerequisite: graduate standing. For students preparing for first qualifying examination. May not be applied toward any course requirement for the degree. S/U grading.

597. Preparation for Ph.D. Examinations (4 or 8 units). For second-stage Ph.D. students preparing for second qualifying examination. S/U grading.

598. M.A. Research and Thesis Preparation. Prerequisite: graduate standing. May not be applied toward any course requirement for the 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

UCLA Writing Programs:
371 Kinsey Hall, (213) 206-6815

Freshman Writing Program:
271 Kinsey Hall, (213) 206-1145

Associate Professor

Charles Linwood Batten, Jr., Ph.D., *Director, UCLA Writing Programs; Vice Chair, Composition*

Adjunct Lecturer

Mike Rose, Ph.D., *Associate Director, UCLA Writing Programs*

Staff

Lauren S. Cammack, B.A., *Assistant Director, UCLA Writing Programs*

Visiting Lecturers

Kathleen Balgley, C.Phil.
Dibakar Barua, Ph.D.
Bruce Beiderwell, Ph.D.
Jennifer Bradley, Ph.D.
Sheila Bryant, Ph.D.
Patricia Chittenden, M.A.
Gary Colombo, C.Phil.
Richard Creese, Ph.D.
Robert Cullen, Ph.D.
Diane Durkin, Ph.D.
Marilyn Edelstein, Ph.D.
Ed Frankel, M.A.
George Gadda, C.Phil.
Mary Georges, M.A.
Lisa Gerrard, Ph.D.
Patricia Gilmore-Jaffe, Ph.D.
Cheryl Giuliano, Ph.D.
Donna Gregory, Ph.D.
Susan Griffin, Ph.D.
Jeanne Gunner, Ph.D.
Michael Gustin, M.A.
Anita Hemphill, Ph.D.
Virginia Hornak, M.A.
Patricia Hunt, Ph.D.
Clara Juncker, Ph.D.
Malcolm Kiniry, Ph.D.
Douglas Lanier, Ph.D.
Janette Lewis, Ph.D.
Bonnie Lisle, Ph.D.
Sonia Maasik, M.A.
Nancy Mairs, Ph.D.
Sandra Mano, Ph.D.
John Mascaro, M.A.
Cynthia Merrill, M.A.
Judson Monroe, Ph.D.
Michael Moore, Ph.D.
David Morris, Ph.D.
Faye Peitzman, Ph.D.
Cheryl Pfoff, Ph.D.
Susan Popkin, Ph.D.
Madeleine Picciotto, Ph.D.
Barbara Rico, C.Phil.
Jeffrey Skoblow, Ph.D.
Ellen Strenski, Ph.D.
Cynthia Tuell, M.A.
Jennifer Wilson, Ph.D.
John Yockey, Ph.D.
Lee Zimmerman, Ph.D.
Shari Zimmerman, Ph.D.

Scope and Objectives

Students need writing proficiency at every stage of their university careers. Although UCLA does not have a composition major, the UCLA Writing Programs and the Composition Section of the English Department offer a series of courses introducing the varieties of university discourse and providing basic to highly skilled instruction. 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, in the quarter immediately following admission to the University, either English A or B. Placement in these courses is determined by performance on the Subject A Placement Test. For more information regarding Subject A, see "Undergraduate Degree Requirements" in Chapter 2.

Composition Requirement

Each of the University's colleges and schools sets its 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 Achievement Test are eligible to take the English Proficiency Examination. Outstanding performance on this examination fulfills the composition requirement. For further information, contact the Freshman Writing Program.

Lower Division Courses

A. Basic Review of English Usage (No credit). Lecture, five hours. Prerequisite: placement into English A determined by performance on the Subject A Placement Test. English A displaces four units on the student's Study List but yields no credit toward a degree. A preliminary course in academic writing, offering workshop exercises in reading, writing, and revision. Students learn grammar and mechanics primarily through practice and imitation. Completion of this course with a grade of C or better or demonstration of minimum competence on the Subject A Placement Test is prerequisite to English B.

B. Fundamentals of Exposition (No credit). (Formerly numbered 1A.) Prerequisite: English A or qualifying score on Subject A Placement Test. English B displaces four units on the student's Study List but yields no credit toward a degree. Designed to develop the proficiency in expository writing required for successful University work. Lectures, readings, class discussions, and assignments in writing and revision. Completion of this course with a grade of C or better meets the 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 B 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 the 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).

30. Intermediate Exposition. Prerequisite: satisfaction of Subject A and English Composition requirements. An intermediate course in academic writing which follows course 3 and teaches students how to write longer papers built on more complex, demanding texts. Readings include at least two books dealing with issues central to the humanities, social sciences, or life sciences. Writing assignments include a research project appropriate to students' majors.

Upper Division Courses

100W. Intensive Writing (2 units). Prerequisite: course 3. Students must be concurrently enrolled in a course offered in conjunction with English 100W (refer to the *Schedule of Classes* for courses so designated). Designed to teach analytic paper writing, with emphasis on revision techniques. Material for writing assignments comes from adjunct course, and assignments reflect and develop writing skills needed in that course. May be repeated for credit with consent of instructor.

100WH. Intensive Writing (Honors) (2 units). Prerequisite: course 3. Students must be concurrently enrolled in an honors course offered in conjunction with English 100WH (refer to the *Schedule of Classes* for courses so designated). Designed to teach analytic paper writing, with emphasis on revision techniques. Material for writing assignments comes from adjunct course, and assignments reflect and develop writing skills needed in that course. May be repeated for credit with consent of instructor.

120A. Language Study for Teachers: Elementary School. Prerequisite: satisfaction of Subject A requirement. A 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 the teaching of reading, writing, spelling, and literature.

120B. Language Study for Teachers of English: Secondary and Postsecondary. Prerequisite: satisfaction of Subject A requirement. A rapid review of English grammar and an introduction to basic concepts in sociolinguistics, dialectology, and stylistics applied to the analysis and evaluation of writing samples from students in junior and senior high school and junior college.

120C. Language Study for Teachers of Subjects Other Than English: Secondary and Postsecondary. Prerequisite: satisfaction of Subject A requirement. Designed to introduce teachers of subjects other than English to basic concepts in language acquisition, dialectology, sociolinguistics, and composition.

130. Composition for Teachers. Prerequisites: satisfaction of Subject A requirement, courses 3, 4. Preparation for future teachers of English composition in the writing and criticism of the kinds of prose discourse usually taught in primary and secondary schools and in junior college.

131A-131H. Advanced Exposition. (Formerly numbered 131.) Prerequisites: satisfaction of Subject A and English Composition requirements, upper division standing. A writing course designed to help students develop stylistic and argumentative virtuosity in various rhetorical contexts, including different sections that emphasize the principles of effective writing in major professions. May be taken P/NP by English majors, though English majors who wish to use the 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.

136A-136B-136C. Practical Writing and Editing. Lecture, three hours. Prerequisites: satisfaction of Subject A requirement, course 3, one course from the 131 series, consent of instructor. A 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.

Graduate Courses

300. The Teaching of English. Required of candidates for the single subject credential in English. Study of theories of rhetoric, composition, reading, and literature as they apply to the secondary school English curriculum.

495A-495B. Supervised Teacher Preparation (2 units each). (Formerly numbered 495.) Discussion, one hour; laboratory, 30 minutes. **495A.** Required of all applicants for a teaching assistantship in English. The practical concerns of designing a course, creating assignments, grading papers, and holding conferences for English 3 classes. **495B.** Must be taken concurrently with the first teaching assignment. It examines the specialized problems which occur in teaching English 3 and introduces students to techniques for teaching English B and ESL. In Progress and S/U grading. Ms. Pfoff, Mr. Rose

English as a Second Language Section

3300 Rolfe Hall, (213) 825-4631

Professors

J. Donald Bowen, Ph.D.
Russell N. Campbell, Ph.D.
Marianne Celce-Murcia, Ph.D.
Evelyn R. Hatch, Ph.D.
John F. Povey, Ph.D.
John H. Schumann, Ed.D., *Chair*
Clifford H. Prator, Ph.D., *Emeritus*

Associate Professors

Roger W. Andersen, Ph.D.
Earl J. Rand, Ph.D.

Assistant Professor

Mary E. McGroarty, Ph.D.

Visiting Associate Professor

Grant Henning, Ph.D.

Visiting Assistant Professor

Barbara Kroll, Ph.D.

Adjunct and Visiting Lecturers

Donna Brinton, M.A., *Adjunct*
Melinda Erickson, M.A., *Visiting*
Diana Savas, M.A., *Visiting*

Scope and Objectives

The Teaching English as a Second Language (TESL) Program is 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 an 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, a 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 ESL Section and the Linguistics Department 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. (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.

Master of Arts in Teaching English as a Second Language

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 at the beginning of 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 30 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, English as a Second Language Section, 3300A Rolfe Hall, UCLA, Los Angeles, CA 90024. Since admission is limited to approximately 30 students per year, it is important that supporting papers be submitted by February 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, (required only of applicants whose native language is English), letters of recommendation, statement of purpose, and relevant professional experience. 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.

Foreign Language Requirement

Students whose native language is English generally use their Fall and Winter Quarter electives to acquire or perfect a 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 four 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) one foreign language course plus English M274; (4) English 227K plus an unrestrictive elective.

Those particularly interested in working with Mexican-American, Asian American, or American Indian pupils will normally choose the third of these alternatives. When there is doubt as to which language will be 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 University's 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 (descriptions of the English courses mentioned here may be found at the end of this section):

Fall Quarter: Linguistics 100, English 370K, foreign language requirement or elective (course depends on language requirement plan)

Winter Quarter: English 122K, 241K, foreign language requirement or elective (course depends on language requirement plan)

Spring Quarter: English 106K or 107K or 109K, 380K, Linguistics 103 or English 103K

Exceptions to the above requirements will be made only after consultation with the graduate adviser.

Of the nine courses required the first year, at least seven must be in TESL, English, 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 Teaching Credential).

Teaching Experience

One quarter of supervised teaching 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 will be eligible for the California Adult Education Credential in ESL. 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 Linguistics 100, Linguistics 103 or English 103K, English 122K and 241K) and, in special cases, two of the electives (100 or 200 series only) are 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. You must enroll in course 598K each quarter 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 the second year).

English 400K is a seminar in which TESL M.A. candidates present and defend the results of their thesis research. Enrollment is required in the Spring Quarter but does not count as one of the 14 courses required for the M.A.

The electives taken during the 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 approved program must be approved by both the committee chair and the M.A. adviser.

Thesis Plan

By the end of the fourth quarter, a 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. An outside member is required.

Undergraduate Courses

Courses 33A, 33B, 33C, 34, 35, 36, 103J, 106J, 107J, 109J are only for students whose native language is other than English. Placement in these courses is established on the basis of the English as a Second Language Placement Examination (ESLPE), which students whose native language is not English must take instead of the Subject A Placement Test (see "Subject A" in Chapter 2). Depending on the results of this examination, entering students are (1) exempt from any special ESL requirement; (2) required to take course 33C; (3) required to take course 33B followed by course 33C; (4) required to take course 33A followed by courses 33B and 33C; or (5) required to spend a quarter studying elementary English exclusively, through UCLA Extension, followed by courses 33A, 33B, 33C. You must enroll in the course(s) during your first term in residence at UCLA and each subsequent term until you complete course 33C with a grade of C or better.

You may satisfy the English Composition requirement by completing English (ESL) 36 with a grade of C or better. Admission into course 36 is determined by a Composition Placement Test administered the first day of class each quarter. A low score on the test may require that you enroll in English (ESL) 35 prior to course 36.

Lower Division Courses

33A. Low Intermediate English as a Second Language. Recitation, eight hours; laboratory, two hours. Prerequisite: grade of C or better in XL832 or proficiency demonstrated on the English as a Second Language Placement Examination. Intensive instruction in the structure of English, with focus on vocabulary building, listening and speaking skills, and basic composition techniques.

33B. High Intermediate English as a Second Language. Recitation, five hours. Prerequisite: grade of C or better in course 33A or proficiency demonstrated on the 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. Recitation, five hours. Prerequisite: grade of C or better in course 33B or proficiency demonstrated on the English as a Second Language Placement Examination. Emphasis on academic writing, reading, research skills, and lecture comprehension.

34. Oral Communication Skills for ESL Students. Prerequisite: grade of C or better in course 33C or proficiency demonstrated on the English as a Second Language Placement Examination. Develops oral skills that prepare nonnative speakers of English to participate in class discussion, make oral presentations before an audience, respond to questions, and improve through self-evaluation of speech. P/NP (undergraduates), S/U (graduates), or letter grading.

35. Developmental Composition for ESL Students. Prerequisite: grade of C or better in course 33C or proficiency demonstrated on the English as a Second Language Placement Examination. Developmental composition skills for ESL students, with focus on the mechanics of writing, grammatical structures, and recognition of and practice with the major academic discourse modes.

36. Intermediate Composition for ESL Students. Prerequisites: grade of C or better in course 33C or 35 or proficiency demonstrated on the English as a Second Language Placement Examination, and an appropriate Composition Placement Test score. Designed to improve English language writing skills for nonnative speakers of English. Special attention to grammatical structures, principles and methods of exposition, and writing for academic purposes.

Upper Division Courses

103J. Phonetics for ESL Students. Prerequisite: grade of C or better in course 33C or proficiency demonstrated on the English as a Second Language Placement Examination. A detailed and systematic study of the sounds of American English and the way in which they are put together in connected speech, applied to the improvement of the student's own accent. Mr. Bowen, Ms. Brinton

103K. Phonetics for Teachers of English as a Second Language. Prerequisite: consent of instructor. Analysis of the phonological structure of contemporary English, with attention to the differences between British and American speech. Drill directed toward individual needs. Mr. Andersen, Mr. Bowen

106J. Advanced Composition for ESL Students. Prerequisites: grade of C or better in course 33C or proficiency demonstrated on the English as a Second Language Placement Examination, and an appropriate Composition Placement Test score. Exercises in writing based on readings, with the aim of developing idiomatic control of expression.
Ms. Brinton, Ms. Erickson, Mr. Rand

106K. Writing in the ESL Context. Provides opportunities for practice and improvement in writing skills and thus fulfills the composition requirement for the TESL M.A. degree. Survey of important theoretical and methodological issues related to the teaching of writing/composition to ESL students and examination of appropriate classroom materials and authentic student compositions. Ms. Kroll

107J. Advanced Reading for ESL Students. Prerequisite: grade of C or better in course 33C or proficiency demonstrated on the English as a Second Language Placement Examination. Identification through example of the essential cognitive strategies necessary to efficient reading for academic purposes. Development of these strategies through exercises and guided practice using authentic university texts from a variety of content areas.
Ms. Hatch, Ms. Kroll

107K. Reading in the ESL Context. Provides opportunities for practice and improvement in reading and writing skills and thus fulfills the composition requirement for the TESL M.A. degree. Survey of important theoretical and methodological issues related to the teaching of reading and writing to ESL students and examination of appropriate classroom materials.
Ms. Hatch, Ms. Kroll

109J. Introduction to Literature for ESL Students. Prerequisite: grade of C or better in course 33C or proficiency demonstrated on the English as a Second Language Placement Examination. Selections from English and American literature presented so as to make full allowance for the students' linguistic and cultural problems and to contribute to an increasing command of the English language.
Ms. Brinton, Mr. Povey

109K. Literature in the ESL Context. Provides opportunities for practice and improvement in writing skills and thus fulfills the composition requirement for the TESL M.A. degree. Survey of important theoretical and methodological issues related to the teaching of literature to ESL students and examination of appropriate classroom materials. Strong emphasis on the cultural basis for literature. Mr. Povey

122K. Introduction to the Structure of Present-Day English (for Teachers of English as a Second Language). Prerequisite: Linguistics 100 or consent of instructor. Introductory study of those grammatical structures of English most important in the ESL classroom. Aims to provide insights from traditional, structural, and particularly transformational grammar.
Ms. Celce-Murcia (W)

Graduate Courses

All graduate courses are open to qualified graduate students from other departments with consent of department.

209K. Current Issues in Experimental Design and Statistics for Applied Linguistics. (Formerly numbered 272K.) Specialized topics of interest to graduate students in TESL and applied linguistics. Emphasis varies according to current theoretical methodological trends in the field.
Ms. Hatch, Mr. Rand (F,Sp)

220K. Materials Development for Language Teaching. (Formerly numbered 272K.) Prerequisites: course 370K, at least two years of ESL/EFL teaching experience. Planning and preparation of an original set of language teaching materials geared to the 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)

221K. Media for Language Teaching. (Formerly numbered 272K.) A 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 the application to ESL instruction. Ms. Brinton (W)

222K. Language Testing for Teachers of English as a Second Language. (Formerly numbered 261K.) Prerequisites: course 370K, Linguistics 100. Theories and techniques for language assessment across the skill areas. Emphasis on classroom testing and the functions of testing within a language program. Basic statistical concepts and hands-on experience with the construction of language tests.
Mr. Rand (W)

223K. Role of English as a Second Language in Bilingual Education. (Formerly numbered 210K.) Prerequisites: course 370K, Linguistics 100. Survey of the literature, presentation of major research, and discussion of bilingual education programs in the United States. The linguistic, psychological, and sociological manifestations of bilingualism, with particular reference to aspects of learning, teaching, and testing language skills.
Mr. Campbell, Ms. McGroarty (F)

M224K. The Teaching of English for Minority Groups. (Formerly numbered 224K.) (Same as English M274.) Prerequisites: course 370K and Linguistics 100, or consent of instructor. In-depth description of the dialects of English and of other languages (such as Spanish) used by groups of students in American schools. The origins, variations within, and current status of language varieties such as Black English and Chicano Spanish, relevant research, and educational implications.
Mr. Bowen, Ms. McGroarty

225K. Program Evaluation in Applied Linguistics. Evaluation of the effectiveness of ESL curriculum and instruction, including the assessment of teacher behavior. Prevalent evaluation theories, the writing of evaluation proposals, developing program monitoring procedures, selecting appropriate evaluation design plans, framing the decision context, and reporting evaluation results. Mr. Campbell

227K. Experiential Seminar in Second Language Learning. Discussion, two hours; laboratory, four hours. Prerequisite: graduate standing. Students retrospect on a language learning experience (by keeping a daily journal and in weekly discussion meetings) and relate this experience to current issues in second and foreign language acquisition and/or second/foreign language learning teaching (drawing on the published literature). Students learn an uncommonly taught language with the use of authentic language materials (video and audio recordings and print material). Discussion of the experience and issues to develop a topic for a final term paper on one particular issue relevant to the goals of the course.
Mr. Andersen

229K. Current Issues in Language Education. (Formerly numbered 272K.) Specialized topics in language education of interest to graduate students in TESL and applied linguistics. Emphasis varies according to current topics of theoretical and practical import in the field.

232K. Advanced Seminar in the Construction and Administration of Language Tests. (Formerly numbered 263K.) Prerequisite: course 222K 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. Henning

241K. Contrastive and Error Analysis in the ESL Context. (Formerly numbered 250K.) Prerequisites: course 370K, Linguistics 100. Analysis of English and other languages at the phonological, grammatical, lexical, and cultural levels. Preparing analyses of interlanguage for research purposes. Preparation of lesson plans for helping specific groups of students overcome common errors identified through the analyses. Observation of ESL classes.
Mr. Andersen, Mr. Bowen, Mr. Schumann (W)

249K. Current Issues in Language Analysis. (Formerly numbered 272K.) 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

250K. Advanced Seminar in Cohesion Analysis of English Structure. (Formerly numbered M250K.) Prerequisite: course 122K or consent of instructor. Investigation in depth of selected linguistic features of oral and written texts that go beyond the 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)

251K. Advanced Seminar in Interlanguage Analysis. (Formerly numbered 272K.) Prerequisite: course 241K. Analysis of interlanguage from various points of view (e.g., topic-comment structure, tense, aspect, modality, thematic structure of utterances), with the aim of understanding how interlanguage is organized. Original research projects.
Mr. Andersen, Ms. Hatch, Mr. Schumann

252K. Advanced Seminar in Contextual Analysis of English Structure. Prerequisite: course 122K 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, the starting point in the analysis is syntax (i.e., what are the structural properties — form, distribution — of the word(s) or structure(s) under consideration?). Ms. Celce-Murcia (F)

260K. Psycholinguistics and Language Teaching. Prerequisites: course 370K and Linguistics 100, or consent of instructor. An exploration of those areas of psycholinguistics covering foreign language acquisition; types and theories of bilingualism; learning theories underlying the current methods of teaching foreign languages. Ms. Hatch, Mr. Schumann (F)

261K. Second Language Acquisition. (Formerly numbered 262K.) Prerequisite: consent of instructor. Review of the 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, Ms. Hatch, Mr. Schumann (F)

269K. Current Issues in Language Acquisition (2 to 4 units). (Formerly numbered 272K.) 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, Ms. Hatch, Mr. Schumann (W)

271K. Cross-Linguistic Topics in Second Language Acquisition. Lecture, one hour; discussion, three hours. Prerequisites: course 261K, Linguistics 100. 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

280K. Language Policy in Developing Countries. (Formerly numbered 270K.) Prerequisite: consent of instructor. Use of and need for English in countries such as Nigeria and the Philippines; factors affecting language policy in their school systems; applicability of research techniques of sociolinguistics and psycholinguistics to problems of language policy.
Mr. Povey

281K. Language Policy in the United States. Prerequisite: consent of instructor. Use of and need for the teaching of languages, both English and others, in the United States. Issues related to matters of language choice and language planning undertaken for various purposes; factors affecting language use, change, and standardization in the U.S.
Ms. McGroarty

282K. Intercultural Communication and the Teaching of English as a Second Language. (Formerly numbered 272K.) Prerequisite: consent of instructor. An introduction to the field of cross-cultural communication, with special attention to the cultural influences on language use. Presentation of theoretical frameworks describing variations in language use; discussion of literature and development of awareness and knowledge regarding cultural norms of language learning and use. Ms. McGroarty

283K. Discourse Analysis. (Formerly numbered 272K.) A 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. Hatch (W)

284K. English for Specific Purposes. (Formerly numbered 264K.) 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. Mr. Campbell (Sp)

M285K. Studies in African Literature in English. (Formerly numbered 285K.) (Same as English M261.) Prerequisite: consent of instructor. Special problems and trends of African literature in English. Mr. Povey (W)

289K. Current Issues in Language Use. (Formerly numbered 272K.) 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. Mr. Campbell, Ms. Hatch, Ms. McGroarty (Sp)

370K. The Teaching of English as a Second Language. Lecture, six hours. Prerequisite: consent of instructor. Bibliography, survey, and evaluation of methods and materials. The nature of language learning. Analysis of the differences between two languages as a basis of instruction. Mr. Bowen, Mr. Campbell, Mr. Schumann (F)

375K. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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. Altman (F,W,Sp)

380K. Supervised Teaching: English as a Second Language or Dialect. Prerequisite: course 370K. Team teaching at the elementary, secondary, or adult level under the supervision of a senior staff member. S/U grading. Ms. Brinton (Sp)

400K. TESL Colloquium. Prerequisite: consent of TESL M.A. adviser. M.A. candidates present and defend the results of their thesis research. Required of all candidates but may not be applied toward the M.A. degree requirements. Candidates for the Ph.D. in Applied Linguistics may also use this course to report on their dissertations. S/U grading. Mr. Andersen, Ms. Celce-Murcia, Mr. Rand (Sp)

495K. Training and Supervision of Teaching Assistants (2 units). (Formerly numbered 495KA-495KB.) 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 the degree requirements for the M.A. or certificate in TESL or Ph.D. in Applied Linguistics. S/U grading. Ms. Altman (F,W)

596K. Directed Individual Study. Prerequisite: graduate standing. Independent study in an area related to English as a second language. May not be repeated for credit.

598K. M.A. Research and Thesis Preparation (4 to 8 units). 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 the degree is allowed only once, but all M.A. candidates must enroll in the course each quarter they are registered and engaged in thesis preparation. S/U grading. (F, Sp)

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 17 on the School of Public Health.

Ethnic Arts
(Interdepartmental)

This undergraduate major is now called "World Arts and Cultures." See Chapter 6 on the College of Fine Arts for details.

Folklore and Mythology
(Interdepartmental)

1041 Graduate School of Management, (213) 825-3962

Professors

Shirley L. Arora, Ph.D. *(Spanish and Portuguese)*
Marianna D. Birnbaum, Ph.D., *in Residence (Germanic Languages)*
Kees W. Bolle, Ph.D. *(History)*
Margherita Cottino-Jones, Ph.D. *(Italian)*
Elsie Dunin, M.A. *(Dance)*
Patrick K. Ford, Ph.D. *(English)*
Robert A. Georges, Ph.D. *(English)*
Marija Gimbutas, Ph.D. *(Slavic Languages and Literatures)*
Nazir A. Jairazbhoy, Ph.D. *(Music)*
Michael O. Jones, Ph.D. *(History)*
Vladimir Markov, Ph.D. *(Slavic Languages and Literatures)*
James W. Porter, M.A. *(Music)*
Douglass Price-Williams, Ph.D. *(Anthropology)*
Jaan Puhvel, Ph.D. *(Classics)*
Allegra Snyder, M.A. *(Dance)*
Donald J. Ward, Ph.D. *(Germanic Languages)*
Johannes Wilbert, Ph.D. *(Anthropology)*
D.K. Wilgus, Ph.D. *(English and Music)*
Wayland D. Hand, Ph.D., *Emeritus (Germanic Languages)*
Melvyn B. Helstien, Ph.D., *Emeritus (Theater, Film, and Television)*
Stanley L. Robe, Ph.D., *Emeritus (Spanish and Portuguese)*

Associate Professors

Steven Lattimore, Ph.D. *(Classics)*
Joseph F. Nagy, Ph.D. *(English), Chair*
Philip L. Newman, Ph.D. *(Anthropology)*
Arnold Rubin, Ph.D. *(Art, Design, and Art History)*

Assistant Professors

Jacqueline C. DjeDje, Ph.D. *(Music)*
Beverly J. Robinson, Ph.D. *(Theater, Film, and Television)*
Stephen Stern, Ph.D. *(Library and Information Science), Vice Chair*

Adjunct Lecturer

Inkeri A. Rank, M.A., M.Ed. *(Scandinavian Languages)*

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 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 GSM, UCLA, Los Angeles, CA 90024.

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 Educational Testing Service GSFLT examination 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 the comprehensive examination plan (see below), must complete the following courses: Folklore 200, 201A, 201B, 216, and at least one course from each of the following groups:

Group 1: One course in folk song or folk music.

Group 2: One course in the folklore and mythology of a specific culture or culture area.

Group 3: One course in the mythology of a specific culture or in the principles of mythology.

Group 4: One graduate seminar in an area of folklore and mythology.

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 quarters.

The thesis committee, composed of three or more faculty members selected with the approval of the chair of the interdepartmental committee, is appointed no later than the quarter before you expect to complete the requirements. No outside members are required.

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 final oral examinations 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 quarters.

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 will be 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 a 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 in any of the three ways 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.

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 the approval of the interdepartmental committee and includes one or more members from your related discipline.

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. A cultural-historical survey of the role of folklore in the development of American civilization and of the 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. A survey of the various forms of folklore and an examination of their historical and social significance.
Mr. Nagy, Mr. Porter

CM106. Anglo-American Folk Song. (Formerly numbered M106.) (Same as English M111B.) Prerequisites: satisfaction of Subject A requirement, junior standing. A 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. Wilgus

C107. Folklore in Urban Environments. Lecture, three hours. Prerequisites: course 15 or 101 and/or consent of instructor. Exploration of the expressive and symbolic dimensions of complex urban life, focusing on how immigrants, migrants, residents, and workers shape their experiences through the dynamic interplay of community, ethnicity, culture, and religion. Concurrently scheduled with course C207.
Mr. Jones, Mr. Stern

108. Afro-American Folklore and Culture. Prerequisite: course 101 or consent of instructor. A study of the traditional genres or forms of Afro-American folklore and their cultural functions. Ms. Robinson

M109. Mexican and Chicano Folklore in Cultural Context. (Same as Anthropology M166P.) Lecture, three hours. Prerequisite: consent of instructor. A historical and sociocultural survey of the folklore of peoples of Mexican cultural background within Mexico and the United States. Emphasis on folklore as indices of Mexican and Chicano identity, as communicated through such traditional forms as narrative, song, music, customs, beliefs, crafts, and foodways.

M111. The Literature of Myth and Oral Tradition. (Same as English M111A.) Prerequisite: satisfaction of Subject A requirement. A study of myth, dramatic origins, oral epic, folktale, and ballad, emphasizing Indo-European and Semitic examples. Mr. Nagy

M112. Survey of Medieval Celtic Literature. (Same as English M111E.) Prerequisite: satisfaction of Subject A requirement. Knowledge of Irish or Welsh is not required. A general course dealing with Celtic literature from the earliest times to the 14th century.
Mr. Ford

113. The Arthurian Tradition. Prerequisite: consent of instructor. A survey of the traditions relating to the 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 and Technology. Prerequisite: junior standing. A general course concerned with the material manifestations of folk culture and the 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. A survey of the 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.) Prerequisite: course 101 or consent of instructor. A survey of the early materials, chiefly literary, for the study of the mythic traditions of the Celtic peoples, ranging from ancient Gaul to medieval Ireland and Wales. Mr. Ford

M123A. Finnish Folklore and Mythology. (Same as Scandinavian M123A.) The methods and results of Finnish folklore studies and the mythic traditions of the Finns. Special attention to the oral epic, beliefs, and legends. Ms. Rank

M123B. Finnish Folk Song and Ballad. (Same as Scandinavian M123B.) Course M123A is not prerequisite to M123B. A survey of Finnish balladry and folk song, with attention to historical development, ethnic background, and poetic and musical values. Ms. Rank

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. Ms. Rank

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 the material manifestations of Lappish culture: arts and crafts, textiles, costume, folk technology. Ms. Rank

M126. Baltic and Slavic Folklore and Mythology. (Same as Slavic M179.) Lecture, three hours. A general course for students interested in folklore and mythology and for those interested in Indo-European mythic antiquities. Mrs. Gimbutas

M127. Celtic Folklore. (Same as English M111F.) Prerequisite: course 101 or consent of instructor. The 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.) A 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 the 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. An examination of folkloristic and mythological data recorded from various North American Indian peoples within the contexts of the principal ideological frameworks which have been evolved historically for the analysis of such data. Mr. Georges

131. Folklore of India. Prerequisite: course 101 or consent of instructor. A survey of the folklore of India, with special reference to the content and dissemination of oral epics, ballads, legends, and beliefs. Mr. Jairazbhoy

M140. From Boccaccio to Basile (in English). (Same as Italian M140.) Lecture, three hours. A study of the origins and the development of the Italian novella in its themes, in its structure, in its historical context, and in its European ramifications. Designed for students in other departments who wish to become acquainted with either the premises or the growth of similar literary genres. Also intended for students majoring in folklore and mythology, who are given an 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.) The nature of Jewish folklore; narrative, folk song, folk art, folk religion, and the methods and perspectives used in their analysis. Mr. Stern

M149. Folk Literature of the Hispanic World. (Same as Spanish M149.) Lecture, three hours. A study of the history and present dissemination of the 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 Music M154A-M154B.) Prerequisite: Music 1A or consent of instructor. Course M154A is prerequisite to M154B. A study of Afro-American rhythm, dance, music, field hollers, work songs, spirituals, blues, and jazz; the contrast between West African, Afro-American, and Afro-Brazilian musical traditions. Ms. DjeDje

M155. Oral Traditions in Africa. (Same as English M111G.) Prerequisite: upper division standing. A survey of African folk traditions: folktale, epic, heroic poetry, and folk song.

163. Folklore and Oral History. Prerequisite: junior standing. An examination of the 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. Mr. Stern

M170. Russian Folklore. (Same as Russian M170.) Lecture, three hours. A general introduction to Russian folklore, including a survey of genres and related folkloric phenomena. Lectures and readings in English.

172. Folklore in Ethnic Context. Prerequisite: course 15 or 101 or consent of instructor. The role of folklore in ethnic relations; the processes by which ethnic folklore is generated, transmitted, and maintained by immigrant groups and subsequent generations. Mr. Georges, Mr. Stern

M180. Analytical Approaches to Folk Music. (Same as Music M180.) Prerequisites: Music 5A-5B-5C or consent of instructor. An intensive study of the methods and techniques necessary to the understanding of Western folk music. Mr. Porter

M181. Folk Music of Western Europe. (Same as Music M181.) Prerequisite: consent of instructor. Introduction to the forms and styles of traditional music in Western Europe. Historical and ethnological perspectives on this music combined with numerous recorded examples from the major cultural subdivisions of the region. Mr. Porter

190. Selected Topics in Folklore and Mythology Studies. Prerequisites: course 15 or 101, consent of instructor. A proseminar focusing on selected problems, data, or themes in folklore and mythology studies.

199. Special Studies in Folklore (2 to 4 units). Prerequisites: senior standing, consent of instructor.

Graduate Courses

200. Folklore Bibliography, Theory, and Research Methods. A basic course in theory and bibliography for folklore students, including the techniques of research necessary for serious folklore study. Mr. Georges, Mr. Ward

201A. Folklore Collecting and Field Research. Prerequisite: course 200. Discussion/demonstration concerning the theoretical concepts, methods, and techniques of data gathering and field research in folklore. Mr. Jones, Mr. Stern, Mr. Wilgus

201B. Folklore Collecting and Field Research. Prerequisite: course 201A. The supervised completion of a fieldwork project developed in course 201A. Mr. Jones, Mr. Stern, Mr. Wilgus

M202. Folklore Archiving. (Formerly numbered M202A-M202B.) (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 first-hand experience in creating and managing data bases, utilizing both manual and computerized techniques. Mr. Georges, Mr. Stern

M205. Perspectives in American Folklore Research. (Same as English M205.) Prerequisites: course 101, one other upper division folklore course. An examination of American folklore studies compared and contrasted with investigations in other countries, with emphasis on the principal conceptual schemes and research orientations employed in the study of folklore in American society. Mr. Georges, Mr. Jones, Mr. Stern

C206. Anglo-American Folk Song. Prerequisite: graduate standing. A 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. Wilgus

C207. Folklore in Urban Environments. Lecture, three hours. Prerequisites: course 200 and/or consent of instructor. Exploration of the expressive and symbolic dimensions of complex urban life, focusing on how immigrants, migrants, residents, and workers shape their experiences through the dynamic interplay of community, ethnicity, culture, and religion. Concurrently scheduled with course C107. Mr. Jones, Mr. Stern

208. Afro-American Folklore and Culture. Prerequisite: graduate standing. The theoretical and methodological constructs which have contributed to the body of black cultural expression in the United States. Ms. Robinson

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. A study of beliefs and customs in the folk community: the life cycle, calendrical and agricultural customs, and legal antiquities. Mr. Jones, Mr. Ward

M214. The Ethnography of Humor. (Same as Anthropology M232S.) Lecture, three hours. Prerequisite: graduate standing in folklore and mythology or anthropology. An examination and analysis of selected humorous expressions and events in cross-cultural perspective, with emphasis on the major psychological and sociocultural approaches to their study and interpretation.

215. The Popular Legend. Prerequisite: course 200 or consent of instructor. A study of the categories of legendry and their relation to myth, custom, ritual, popular beliefs, and ballads. Mr. Ward

216. The Folktale. Prerequisite: course 200 or consent of instructor. Mr. Georges, Mr. Ward

217. Folk Speech. Prerequisite: course 101, CM106, or M111. Recommended: Anthropology M140, English 121, or Linguistics 100. A study of the ethnography of communication and its relevance to the 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 200. An 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 the latter part of the 19th century to the present. Mr. Jones

M219. Seminar in the Puppet Theater. (Same as Theater M217B.) Lecture, three hours. Prerequisite: consent of instructor. Studies in the puppet theaters of the world: techniques, literature, aesthetics.

228. Seminar: Topics in Celtic Folklore and Mythology. Lecture, three hours. Prerequisites: course 200, coursework in Celtic studies. Preparation for the 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 *(laoidhe/duain)* and prose tales; "fairy" beliefs; collecting and archiving methods of the Irish Folklore Commission; folklore studies and nationalism. Mr. Ford, Mr. Nagy

M230A-M230B. Folk Tradition in Italian Literature. (Same as Italian M230A-M230B.) Lecture, two hours.

M235. African Myth and Mythology. (Same as English M235.) Prerequisite: graduate standing. The methods of analyzing and appreciating African myths and mythological systems.

240. Introduction to Jewish Folk Literature. Prerequisites: upper division standing and consent of instructor, or graduate standing. An examination of both the historic and generic methods used in the study of Jewish folk literature. Mr. Stern

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. A study of the English and Scottish popular ballads and their American derivatives, with some attention to European analogues. Mr. Wilgus

M243B. Problems in Ballad Scholarship. (Same as English M243B.) Prerequisite: course M243A or consent of instructor. Intensive investigation of a problem or problems in the study of the popular ballad. Mr. Wilgus

248. Theory and Method in Latin American Folklore Studies. A historical survey of folklore scholarship in Latin America, with emphasis on the theoretical bases, methods, and techniques employed in the 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. An intensive study of the 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 in Finno-Ugric Folklore and Mythology. Advanced studies in the 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. An examination of oral traditions and related ethnological data from various South American Indian societies against the background of the religious systems of these people. Mr. Wilbert

M258. Seminar in Folk Music. (Same as Music M258.) Seminar, three hours. Prerequisite: consent of instructor. Mr. Porter, Mr. Wilgus

259. Seminar in Folklore. Prerequisites: course 200, consent of instructor.

M286A-M286B. Studies in Hispanic Folk Literature. (Formerly numbered M286A-M286B-M286C.) (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. A teaching apprenticeship under the 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 the M.A. course requirements. May be repeated for credit. S/U grading.

495. The Teaching of Folklore and Mythology. (Formerly numbered 495A-495B.) Lecture, three hours. Prerequisite: course 200. 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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. 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

African Languages (Linguistics) 150A-150B. African Literature in English Translation

Anthropology 118A, 118B. Museum Studies

133P. Social and Psychological Aspects of Myth and Ritual

133R. Aesthetic Anthropology

156. Comparative Religion

230P. Ethnology

232Q. Myth and Ritual

233Q. Aesthetic Anthropology

M247A. Ethnographic Film

264. Ethnography of the Mexican/Chicano People in North America

271. African Cultures

M272. Indians of South America

273. Cultures of the Middle East

274. Cultures of the Pacific Islands

Art History (Art, Design, and Art History) 102. Art of the Ancient Near East

C117A. Advanced Studies in Pre-Columbian Art: Mexico

C117B. Advanced Studies in Pre-Columbian Art: Central America

C117C. Advanced Studies in Pre-Columbian Art: The Andes

118A. The Arts of Oceania

118B. The Arts of Pre-Columbian America

118C. The Arts of Sub-Saharan Africa

118D. The 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 in Comparative Mythology

Comparative Literature C240. Medieval Epics

Dance 180A-180B. Introduction to Dance Ethnography

181A. Dance Cultures of Asia

181B. Dance in Southeast Asia

181C. Dance in East Asia

181D. Dance in South Asia

182A. Dance Cultures of Africa

183A. Dance in Latin America

184B. Dance in the Balkans

187A. Dance Cultures of Native American Indians

280A-280E. Advanced Studies in Dance Ethnology

English 112. Children's Literature

220. Readings in Medieval Literature

French 115A-115D. Medieval French Literature

215A-215F. The Medieval Language and 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 in Germanic Folklore

History 193A. History of Religions: Myth

Italian 214E. The *Decameron*

217B. Commedia dell'arte and the Theater

218C. The Theater, Especially Metastasio, Goldoni, C. Gozzi

Music 132A-132B. Development of Jazz

140A-140B-140C. Musical Cultures of the World

141. Survey of Music in Japan

142A-142B. Folk Music of Eastern Europe and the Mediterranean

143A-143B. Music of Africa

147A-147B. Music of China

148. Folk Music of South Asia

149. The Anthropology of Music

152. Survey of Music in India

153A-153B-153C. Music of the American Indians

158. New Orleans Jazz

C190A-C190B. Proseminar in Ethnomusicology

253. Seminar in Notation and Transcription in Ethnomusicology

254A-254B. Seminar in Field and Laboratory Methods in Ethnomusicology

255. Seminar in Musical Instruments of the Non-Western World

280. Seminar in Ethnomusicology

281A-281B. Music of Indonesia

282. Music of Iran and Other Non-Arabic-Speaking Communities

285. Music of Tibet

287. Seminar in African Music

288. Seminar in North American Indian Music

Old Norse Studies (Germanic Languages) 139. The Saga

140. 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) 251A-251B. Old Russian Literature

291A. Seminar in Old Russian Literature

Sociology 124. Ethnic and Status Groups

130. Social Processes in Africa

131. Latin American Societies

132. Population and Society in the Middle East

133. Comparative Sociology of the Middle East

Spanish (Spanish and Portuguese) 262B. Studies in Medieval Spanish Literature

Theater (Theater, Film, and Television) C117. The Puppet Theater

Foreign Literature in Translation

The following courses offered in the departments of language and literature do not require a reading knowledge of any foreign language.

African Languages (Linguistics) 150A-150B. African Literature in English 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

Armenian (Near Eastern Languages) 150A-150B. Survey of Armenian Literature in English

Bulgarian (Slavic Languages) 154. Survey of Bulgarian Literature

Classics 141. A Survey of Greek Literature in English

142. Ancient Drama

143. A Survey of Latin Literature in English

144. A Survey of Greek and Roman Epic in Translation

145. Ancient Greek and Roman Philosophy

Czech (Slavic Languages) 155A-155B. Czech Literature

Dutch and Afrikaans (Germanic Languages) 112. Dutch, Flemish, Afrikaans Literature in Translation

East Asian Languages and Cultures 140A-140B-140C. Chinese Literature in Translation

141A-141B. Japanese Literature in Translation

English 108A-108B. The English Bible as Literature

French 142. Contemporary French Theater in Translation

143. Modern French Thought

144A-144B-144C. The French Novel in Translation

145. Topics in French Literature

German (Germanic Languages) 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. The 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

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. Main Trends in Italian Literature

110A-110B. The *Divine Comedy* in English

M140. From Boccaccio to Basile (in English)

150. Modern Italian Fiction in Translation

Jewish Studies (Near Eastern Languages) M150A-150B. Hebrew Literature in English

151A-151B. Modern Jewish Literature in English

Old Norse Studies (Germanic Languages) 40. The Heroic Journey in Northern Myth, Legend, and Epic

139. The Saga

140. 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) 140. Portuguese, Brazilian, and African Literature in Translation

Russian (Slavic Languages) 100. 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 138. Survey of Finnish Literature

141. Backgrounds of Scandinavian Literature

142. Scandinavian Literature of the 19th Century

143. Modern Scandinavian Literature

C144. Henrik Ibsen

C145. August Strindberg

C146. Søren Kierkegaard

C147. Knut Hamsun

C180. Literature and Scandinavian Society

C182. The Theory of the Scandinavian Novel

184. Hans Christian Andersen

Serbo-Croatian (Slavic Languages) 154A-154B. Yugoslav Literature

Spanish (Spanish and Portuguese) 160A-160B-160C. 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

160 Haines Hall, (213) 825-1145

Professors

Marc Bensimon, Ph.D.
Hassan el Nouty, Docteur ès Lettres
Eric Gans, Ph.D., *Chair*
Peter Haidu, Ph.D.
Stephen D. Werner, Ph.D.
Francis J. Crowley, Ph.D., *Emeritus*
Milan S. La Du, Ph.D., *Emeritus*
L. Gardner Miller, Docteur de l'Université de Strasbourg, *Emeritus*
Oreste F. Pucciani, Ph.D., *Emeritus*

Associate Professors

Patrick Coleman, Ph.D., *Graduate Adviser*
Shuhsi Kao, Ph.D.
Sara Melzer, Ph.D.

Assistant Professors

Jean-Claude Carron, Ph.D.
James Reid, Ph.D.

Lecturers

Colette Brichant, Docteur d'Université
Jacqueline Hamel-Baccash, Licenciée-ès-Lettres, *Lower Division Head*
Madeleine Korol-Ward, Ph.D., *Undergraduate Adviser*
Padoue de Martini, B.A.

Scope and Objectives

French is second only to English as a language of international culture, and French literature is perhaps the richest and most consistently significant of all world literatures. In recent decades French critical thought has maintained a dominant position in the Western world. The French Department seeks to give its students not merely a background in French language and literature, but an opportunity to synthesize literary and linguistic study with examination of the critical intellectual questions of our time.

The lower division program is designed to provide a minimal competence in French after one year and a thorough basic knowledge of the language after two years. From the first day of French 1 all instruction is conducted in French.

The upper division program is chiefly devoted to perfecting linguistic skills and to the study of French literature. Courses in civilization and linguistics 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 civilization.

The graduate program comprises training in the various fields of French literature and thought, as well as in literary criticism and analysis. A number of courses in linguistics and stylistics are also offered. The department offers both the M.A. and Ph.D. degrees and admits several new graduate students each year, including many from France and a wide variety of other countries.

Bachelor of Arts Degrees

Preparation for the Majors

Required: French 1, 2, 3, 4, 5, 6, 12, and 15, or equivalent. You will normally take course 6 before undertaking course 12 or 15. If you received a grade of A in course 5, you may enroll in course 12 concurrently with course 6, with consent of instructor.

The Majors

Four majors are offered by the department:

Plan A leads to the Bachelor of Arts in French and subsequently to the standard elementary or secondary credential. *Required:* Fifteen full courses of upper division work, including French 100A, 100B, 100C, 103, 114A-114B-114C; two quarters from courses 130A through 132*; three courses in French literature from 115A through 120D**; three elective courses normally selected from upper division courses in the Department of French in language, civilization, or literature. A maximum of one upper division course outside the department may be included in the major program with consent of the undergraduate adviser.

*A course in French history may be substituted for one of these with consent of the major adviser.
**In all major plans one course from the 121 series and or one undergraduate seminar (French 150 through 160, not including 157) may be substituted for courses in the 115A through 120D offerings.

Plan A credential candidates must take 15 upper division French Department courses, including French 105, in order to qualify for a waiver of the national teacher examination for the single subject credential in French.

Plan B, with emphasis on literature, leads to the Bachelor of Arts in French and subsequently to the master's degree. *Required:* Fifteen full courses of upper division work, including French 100A, 100B, 100C, 103, 114A-114B-114C; six courses in French literature from 115A through 120D**; two elective upper division courses to be selected in consultation with a major adviser, either from the Department of French, from the humanities or social sciences division of the College of Letters and Science, or from the College of Fine Arts.

Plan C (French Studies) is a core program in French allowing for individual selection of relevant courses in related fields in the humanities, social sciences, linguistics, etc. *Required:* Fifteen full courses of upper division work, including French 100A, 100B, 100C, 103, 114A-114B-114C; three courses in French literature from 115A through 120D**; five upper division elective courses in the fields relevant to French studies to be selected in or out of the Department of French in consultation with the undergraduate adviser. This program does not normally prepare you for admission to the master's program in French at UCLA.

Plan D (French and Linguistics) leads to a Bachelor of Arts degree in French and Linguistics. In addition to the normal preparation for the major, you are required to complete the sixth quarter of work in one other foreign language or the third quarter in each of two other foreign languages. *Required:* French 100A, 100B, 100C, 103, 114A-114B-114C; two courses from French 105, 106, 107, 108A; Linguistics 100, 103, 110, 120A, 120B, and 164 or C165A or C165B.

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 100A, 100B, or 100C, you may substitute for those courses in grammar and composition an equivalent number of upper division courses in the Department of French 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.

**In all major plans one course from the 121 series and/or one undergraduate seminar (French 150 through 160, not including 157) may be substituted for courses in the 115A through 120D offerings.

All majors must complete a minimum of nine courses of appropriate upper division work in the UCLA Department of French. 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 a major adviser before registering for upper division courses.

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 with a lower GPA may also apply for admission to the program). If you are interested, contact the department during your junior year.

To graduate with departmental honors, you must take French 140A and 140B and/or two upper division literature courses for honors credit. In order to receive honors credit for a nonhonors upper division literature course, you must arrange with the professor to do an extra honors project. On the basis of your coursework, you are expected to choose a research topic you wish to pursue in greater depth. You must then take course 140C where you will receive personal supervision from a faculty member in researching and writing the topic. The three courses count as literature courses for the purpose of satisfying major requirements.

Teaching Credential in French

If you wish a single subject teaching 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 (201 Moore Hall) and/or the Department of French.

Master of Arts Degree

Admission

The Graduate Record Examination (GRE) Aptitude Test, a sample of written work in French, and three letters of recommendation are required and should be sent to the Department of French, 160 Haines Hall, UCLA, Los Angeles, CA 90024. A Bachelor of Arts in French is desirable but not mandatory.

Major Fields or Subdisciplines

The corpus of French literature is divided into three chronological periods: (1) medieval/Renaissance; (2) classical (roughly the 17th and 18th centuries); and (3) modern (since 1800), with Franco-African literature as an option.

Foreign Language Requirement

The foreign language requirement will be fulfilled by passing a course of at least level three in either German, Latin, Spanish, or Italian; by passing the University reading examination in one of these languages; or by passing the Educational Testing Service (ETS) language examination with a score of 500 or better. In special cases, substitution of another foreign language will be 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: French 201, 202, and 203A or 203B are required and should be taken as early as possible. A total of 12 courses in French are required, including at least three courses in each of two periods. At least eight of the courses must be at the graduate level. Students in Plan I may include four units of credit for course 598.

Plan I Admission Requirements and Oral Qualifying Examination: 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.

Final admission into Plan I (i.e., permission to write the thesis) is contingent on passing a one-hour oral examination in the two periods prepared. If you fail this examination, the examining committee will determine whether you may be permitted another attempt or be advised to take the comprehensive examination (Plan II).

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 by the thesis committee in writing before work on the thesis is begun. Final approval of the thesis by the committee is also required.

Plan II Comprehensive Examination: You must pass written examinations of four hours in length in each of the two periods prepared, a two-hour *explication de texte,* and an oral examination in French. The examinations are given in the Fall and Spring Quarters and may be retaken once.

Terminal M.A. Degree

Decision to award a terminal M.A. degree is made by the department on the basis of (1) M.A. examination papers, (2) oral examination, and (3) overall appraisal of record.

Ph.D. Degree

Admission

Completion of a master's degree with recommendation for continuance by the M.A. committee is required; outside applicants need an M.A. degree or equivalent and three letters of recommendation, as well as the Graduate Record Examination (GRE) Aptitude Test and a sample of written work in French.

Admitted students holding the M.A. or *Maîtrise* from another institution must take an oral *examen de passage* in two periods of literary history 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

The corpus of French literature is divided into three chronological periods: (1) medieval/Renaissance; (2) classical (roughly the 17th and 18th centuries); and (3) modern (since 1800), with Franco-African literature as an option.

Foreign Language Requirement

(1) Languages are divided into three groups: Latin; German and Russian; and other Romance languages. You must study two languages up to levels five and six respectively, 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 taking the Educational Testing Service (ETS) examination with level five corresponding to a score of 550 and level six, 600. 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.

(2) When the nature of your specialization requires the knowledge of a third language (in addition to the two normally required), the guidance committee is expected to take into account the extra work implied in making its other recommendations.

(3) Language requirements are to be completed before taking the doctoral qualifying examination.

Course Requirements

The following courses are required: (1) French 201, 202, and 203A or 203B; (2) at least four seminars, two of which should be in 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 examination.

Qualifying Examinations

Four written examinations of four hours each are required as follows: (1) focused specifically in the area of the prospective dissertation topic; (2) dealing with a more general subject related to the dissertation topic; (3) in a cognate field related to the methodology or approach you plan to employ in the dissertation; (4) in the period not covered at the M.A. level.

The topics to be dealt with in parts 1, 2, and 3 are determined by prior consultation with the doctoral guidance committee. At the discretion of the department, you may be permitted to retake a failed examination once.

After passing the written examinations, you are admitted to the University Oral Qualfying Examination. This examination, normally of two hours duration, bears chiefly on parts 1 and 2 of the written examinations and on the proposed dissertation subject. You are expected to submit a written outline of research plans before 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

This examination is no longer required but may be imposed at the discretion of an individual doctoral committee.

Lower Division Courses

Students who have had special advantages in preparation may, through placement examinations or with recommendation of the instructor, be permitted a more advanced program. 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. Not open for credit to students who have completed two years of high school French or equivalent with grades of C or better. Ms. Hamel-Baccash in charge

1G. Elementary French for Graduate Students (3 units). Preparation for ETS or other language examinations. A passing grade does not imply satisfaction of language requirements. S/U grading.
Ms. Brichant

2. Elementary French. Lecture, five hours. Prerequisite: course 1 with a grade of C – or better or one year of high school French. Not normally open for credit to students who have completed two years of high school French or equivalent.
Ms. Hamel-Baccash in charge

2G. Elementary French for Graduate Students (3 units). Prerequisite: course 1G or equivalent. Preparation for ETS or other language examinations. A passing grade does not imply satisfaction of language requirements. May be repeated. S/U grading.
Ms. Brichant

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. Ms. Hamel-Baccash in charge

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. Ms. Hamel-Baccash in charge

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. Ms. Hamel-Baccash in charge

6. Intermediate French. Lecture, five hours. Prerequisite: course 5 with a grade of C – or better or advanced placement standing.
Ms. Hamel-Baccash in charge

10A-10D. French Conversation (2 units each). Discussion, three hours. Prerequisite: course 3 with a grade of A or B or consent of department.
Mr. de Martini in charge

12. Introduction to the Study of French Literature. Lecture, three hours. Prerequisite: course 6 or equivalent or consent of instructor. Principles of literary analysis as applied to selected texts in poetry and prose.

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. Korol-Ward 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 104, 105, 106, 107, and 108A are not sequential and may be taken in any order, provided the prerequisites for each course are fulfilled.

100A. Advanced Grammar I. Prerequisites: courses 6 and (normally) 15, or equivalent. A placement examination is administered, and qualified students are advanced to course 100B or 100C. Ms. Brichant

100B. Advanced Grammar II. Prerequisite: course 100A or equivalent. A placement examination is administered, and qualified students are advanced to course 100C or 103. Ms. Brichant

100C. Advanced Grammar III. Prerequisite: course 100B or equivalent. A placement examination is administered, and qualified students are advanced to course 103. Ms. Brichant

103. Advanced Stylistics. Lecture, three hours. Prerequisite: course 100C or equivalent. Required of all majors, as well as of all candidates for the standard credential in elementary or secondary teaching.
Ms. Korol-Ward in charge

104. Literary Composition. Lecture, two hours. Prerequisite: course 103 or consent of instructor.

105. French Linguistics. Lecture, three hours. Prerequisite: consent of instructor.

106. Advanced French Phonetics. Lecture, two hours. Prerequisite: consent of instructor.
Ms. Korol-Ward

107. Contemporary Spoken French. Discussion, three hours; laboratory, added as needed. Prerequisite: course 103 or consent of instructor.

108A-108B-108C. Advanced Practical Translation. Lecture, three hours:

108A. Prerequisite: course 103 with a grade of B or consent of instructor. An introduction to the translation of advanced texts of general interest, with work in the theory of translation.

108B. Prerequisite: course 108A or consent of instructor. Practice in the translation of technical documents and texts; comparative stylistics of translation.

108C. Prerequisite: course 108B or consent of instructor. Advanced work in areas of general and specialized interest, with exercises in consecutive and simultaneous translation.

114A-114B-114C. Survey of French Literature I, II, III. Prerequisite: course 12 or equivalent. A survey of French literature from the medieval period through the 20th century:

114A. Medieval and Renaissance Literature.

114B. Literature of the Classical Era (17th and 18th Centuries).

114C. Modern Literature (19th and 20th Centuries).

115A-115D. Medieval French Literature:

115A. The Medieval Epic.

115B. The Medieval Romance.

115C. The Medieval Theater.

115D. Medieval Lyric Poetry. Mr. Haidu

116A-116D. The Renaissance:

116A. Rabelais and His Time.

116B. Ronsard and His Time.

116C. Montaigne and His Time.

116D. Renaissance Theater.
Mr. Bensimon, Mr. Carron

117A-117D. The 17th Century:

117A. Corneille and the Baroque.

117B. The Classical Theater: Racine and His Contemporaries.

117C. Moliere and the Comedy of the 17th Century.

117D. Philosophers, Moralists, and Novelists of the 17th Century. Ms. Melzer

118A-118D. The 18th Century:

118A. Comedy and Drama.

118B. Voltaire and the Encyclopedists.

118C. Diderot and Rousseau.

118D. The Novel. Mr. Coleman, Mr. Werner

119A-119D. The 19th Century:

119A. Romanticism.

119B. The Generation of 1848.

119C. Naturalism and Symbolism.

119D. The Turn of the Century.
Mr. el Nouty, Mr. Gans

120A-120D. The 20th Century:

120A. Gide, Proust, and Their Time.

120B. Post-World War I French Writers.

120C. Sartre, Camus, and Their Time.

120D. Contemporary French Writers.
Ms. Kao, Mr. Reid

121A-121D. Contemporary Literature of French Expression. Lecture, three hours:

121A. Franco-African Literature.

121B. French-Canadian Literature.

121C. Franco-Helvetian and Franco-Belgian Literature.

121D. Franco-Caribbean Literature.
Mr. Coleman, Mr. el Nouty

122. French Folklore and Young People's Literature. Ms. Korol-Ward

123. French Popular Literature. "Romans policiers," "Theatre des boulevards," "chansons-poemes," etc.

124. Dramatic Interpretation. Study of the techniques of stage direction and interpretation of French drama. A survey of some of the different theories and approaches used on the French stage. Each student acts in or directs a scene from a play to be performed under rehearsal conditions. Ms. Korol-Ward

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. (Formerly numbered 135.) Lecture, three hours. A fourth hour may be required for the viewing of films and other laboratory activities.
Ms. Brichant

130B. From the Renaissance to the End of the "Ancien Régime." (Formerly numbered 134.) Lecture, three hours. A fourth hour may be required for the viewing of films and other laboratory activities.
Ms. Brichant

130C. From the End of the "Ancien Régime" to 1918. (Formerly numbered 133.) Lecture, three hours. A fourth hour may be required for the viewing of films and other laboratory activities. Ms. Brichant

132. Contemporary France and Its Institutions. Lecture, three hours. Social, cultural, political, economic, and technological aspects of the position of France within the Common Market and other international organizations. Ms. Brichant

138. Cinema and Literature in Contemporary France. Lecture, three hours. Additional hours may be required for the viewing of films and other laboratory activities.

140A-140B-140C. Honors Program in French. Prerequisites: junior or senior standing in French with a 3.5 GPA in the major, a 3.3 overall average, consent of department:

140A. Honors Seminar in French. Seminar on different aspects of a selected literary genre, such as drama, poetry, the novel, etc. Ms. Melzer in charge

140B. Honors Seminar in French. Seminar on a selected theme or particular problem of French literature, civilization, or ideas. Ms. Melzer in charge

140C. Honors Tutorial in French. Individual study on a topic related to that of course 140A or 140B leading to an essay to be written under the guidance of a faculty member. Ms. Melzer in charge

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.

142. Contemporary French Theater in Translation. Lecture, two hours.

143. Modern French Thought. Lecture, two hours. Reading and discussion in translation of contemporary works.

144A-144B-144C. The French Novel in Translation. Lecture, two hours. Authors to be studied are announced each quarter.

145. Topics in French Literature. To be announced each quarter. May not be taken for major or graduate credit but may be considered as an out-of-department elective for the purpose of satisfying major requirements.

Courses 150 through 157 may be repeated once for credit with consent of the 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 the French Language.

158. Woman in French Literature. Lecture, three hours. Exploration of a selected aspect of the situation of woman in French literature as author, character, symbol, etc.

160. Studies in the History of Ideas. Specific themes which address a particular problem of French literature, civilization, or ideas. May be repeated for credit with consent of major adviser.

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. (Formerly numbered 201D.) Lecture, three hours. Practical work of an advanced nature in the expression and presentation of literary research.

202. Techniques of Literary Analysis. Lecture, three hours. Practice in the close analysis of literary texts.

203A-203B. French Literary Criticism. (Formerly numbered 203A-203B-203C.) Lecture, three hours:

203A. History of Literary Theory. The evolution of literary theory from classical times to the 20th century.

203B. Modern Theories of Criticism.
Mr. Coleman, Ms. Kao, Mr. Reid

204A. Phonology and Morphology from Vulgar Latin to French Classicism. The evolution of the French language. Required of candidates for the Ph.D. in Romance Linguistics and Literature who specialize in philology.

204B. Syntax and Semantics from Vulgar Latin to French Classicism. The evolution of the French language. Required of candidates for the Ph.D. in Romance Linguistics and Literature who specialize in philology.

205A-205D. The Intellectual Background of French Literature:

205A. Scholasticism (with Ancient Sources), Humanism.

205B. Rationalism, Empiricism, Positivism.

205C. Criticism, Idealism, Dialectical Materialism.

205D. Phenomenology, Existentialism, Structuralism.

206. French Linguistics. Prerequisite: course 105 or Linguistics 100 or equivalent. Discussion of modern linguistic theory in the area of French grammar, syntax, and semantics.

207. Introduction to Stylistics. Discussion of the basic stylistic devices of the French language.

215A-215F. The Medieval Language and Literature. (Formerly numbered 215A-215E.):

215A. Old and Middle French. Course 215A is prerequisite to 215B through 215F. Phonology and morphology of the language. Introduction to Old French texts.

215B. The Chanson de geste.

215C. The Romance.

215D. Medieval Theater.

215E. Provencal Poetry.

215F. Medieval French Poetry. Mr. Haidu

216A-216H. The Renaissance:

216A. Topics in Early 16th-Century French Literature.

216B. Topics in the Pleiade.

216C. Topics in Late 16th-Century French Literature.

216D. Ronsard.

216E. Rabelais and Prose Writers.

216F. Baroque Poetry.

216G. Montaigne.

216H. Theater. Mr. Bensimon, Mr. Carron

217A-217I. The 17th Century:

217A. Topics in Classical Theater.

217B. Topics in Nondramatic Literary Genres.
217C. Topics in Classical Prose and Thought.
217D. Moliere.
217E. Corneille.
217F. Racine.
217G. The Novel.
217H. Moralists.
217I. Religious Thought. Ms. Melzer
218A-218D. The 18th Century:
218A. Topics in the Early Enlightenment, 1680-1747.
218B. Topics in the Enlightenment, 1748-1765.
218C. Topics in the Late Enlightenment, 1766-1791.
218D. The Theater. Mr. Coleman, Mr. Werner
219A-219K. The 19th Century:
219A. Topics in Romanticism.
219B. Topics in Realism and Naturalism.
219C. Topics in Symbolism.
219D. Poetry.
219E. The Novel.
219F. The Theater.
219G. Historians and Critics.
219H. Victor Hugo.
219I. Balzac.
219J. Independent Novelists.
219K. Intellectual Trends. Mr. el Nouty, Mr. Gans
220A-220P. The 20th Century:
220A. From Symbolism to Surrealism: Selected Topics.
220B. From Surrealism to Existentialism: Selected Topics.
220C. From Existentialism to the Present: Selected Topics.
220D. Paul Valery.
220E. Marcel Proust.
220F. Andre Gide.
220G. Andre Malraux.
220H. The Theater.
220I. The Anti-Theater.
220J. The Novel.
220K. The Antinovel.
220L. Surrealism.
220M. Existentialism.
220O. Poetry.
220P. Cinema and Literature. Ms. Kao, Mr. Reid
221A-221D. French-African Literature:
221A. Introduction to the Study of the French-African Literatures.
221B. French-African Literature of Madagascar and Bantu Africa.
221C. French-African Literature of Berbero-Sudanese and Arabo-Islamic Africa.
221D. Franco-Caribbean Literature. Mr. el Nouty

Courses 250A through 260B may be repeated for credit.

250A-250B. Studies in Medieval Literature. Mr. Haidu
251A-251B. Studies in the Renaissance. Mr. Bensimon and the Staff
252A-252B. Studies in the Baroque. Mr. Bensimon and the Staff
253A-253B. Studies in the 17th Century. Ms. Melzer
254A-254B. Studies in the 18th Century. Mr. Coleman, Mr. Werner
255A-255B. Studies in the 19th Century. Mr. el Nouty, Mr. Gans
256A-256B. Studies in Contemporary Literature. Ms. Kao, Mr. Reid
257A-257B. Studies in French-African Literature. Mr. el Nouty and the Staff
258A-258B. Studies in Literary Criticism. Mr. Gans and the Staff
259A-259B. Studies in Philosophy and Literature.
260A-260B. Studies in the History of Ideas. Particular problems of French literature and ideas.
261. Studies in French Linguistics.
262. Studies in Stylistics.
270. Introduction to Methods of Literary Research. Prerequisite: graduate standing. Lectures by specialists on aspects of literary research, ranging from bibliography to new critical approaches.
310A-310B. The Teaching of French in the Elementary School and at the Junior High Level:
310A. Lecture, three hours. Prerequisite: consent of instructor. Theory of French teaching in the elementary school and at the junior high level. Required for the standard elementary credential.
310B. Hours to be arranged. Observation of language teaching in the elementary school and at the junior high level. Required for the standard elementary credential.
370. The Teaching of French in the Secondary School and at the College Level: Observation. Prerequisite: course 103. Observation of language teaching in the secondary school and at the college level. Ms. Hamel-Baccash
372. The Language Laboratory (2 units). Prerequisite: consent of instructor. New electronic techniques for language instruction. Pedagogical and practical problems of making tapes, installing and organizing a laboratory; control procedures. Mr. de Martini
375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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. Hamel-Baccash
495. The Teaching of French in the Secondary School and at the College Level. Prerequisite: course 370. Theory of language teaching.
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 the M.A. degree requirements. S/U grading.
599. Research for and Preparation of Ph.D. Dissertation (2 to 8 units).

Geochemistry

See Earth and Space Sciences

Geography

1255 Bunche Hall, (213) 825-1071

Professors

Charles F. Bennett, Ph.D., *Chair*
C. Rainer Berger, Ph.D.
William A. V. Clark, Ph.D.
Gary S. Dunbar, Ph.D.
Tom L. McKnight, Ph.D.
Antony R. Orme, Ph.D.
Jonathan D. Sauer, Ph.D.
Allen J. Scott, Ph.D.
Werner H. Terjung, Ph.D.
Norman J. W. Thrower, Ph.D.
Hartmut Walter, Ph.D.
Henry J. Bruman, Ph.D., *Emeritus*
Huey L. Kostanick, Ph.D., *Emeritus*
Richard F. Logan, Ph.D., *Emeritus*
Clifford H. MacFadden, Ph.D., *Emeritus*
Howard J. Nelson, Ph.D., *Emeritus*
Benjamin E. Thomas, Ph.D., *Emeritus*

Associate Professors

J. Nicholas Entrikin, Ph.D.
Gerry A. Hale, Ph.D.
James H. Johnson, Ph.D.
Christopher L. Salter, Ph.D.
Stanley W. Trimble, Ph.D.

Assistant Professors

Susan W. Beatty, Ph.D.
Lisa J. Graumlich, Ph.D.
Robert McMaster, Ph.D.
Frank W. Weirich, Ph.D.

Scope and Objectives

Geographical knowledge deals with the description and analysis of the spatial distribution of those conditions (either naturally occurring or humanly produced) that form the material basis for the reproduction of social life. It also entails understanding the relationships between such conditions and the qualities of social life achieved under given economic, political, social, and cultural systems.

The research and teaching interests of the faculty, ranked sixth nationally by the Conference Board of 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 basic environmental studies, applied environmental studies, cultural and historical geography, economic and urban geography, political and social geography, geographical procedures, and regional geography.

The undergraduate program is designed for students who wish to gain a thorough understanding of geographical analysis, with emphasis on ecological, physical, social-spatial, and historical theories and methods of analysis applied to a wide range of biophysical, material, and social questions. 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/

ecosystems. 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 program, 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, and Mathematics 50 or equivalent. A mathematics background, such as Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A, is recommended. All courses must be completed for a letter grade.

The Major

Required: A minimum of 10 upper division courses in geography taken for a letter grade. In meeting this requirement, you must take three courses from Group I — The Environment; three courses from Group II — Human Geography; one course from Group III — Procedures; two courses from Group IV — Regions; and one elective upper division course in geography. You are encouraged to take more than 10 upper division courses. A C average in the major is required for graduation.

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. Each year of high school language (but not mathematics) will be accepted as equivalent to one quarter course. A score of 500 on an Educational Testing Service (ETS) language examination will also satisfy 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. These courses may be used to meet the general education requirements of the college. (Note: Students should be aware of the college restrictions on duplication of high school foreign language.)

Allied Fields

You must develop some competence in one or two allied fields. This requirement consists of at least four upper division courses selected from at least one but not more than two of the following disciplines: anthropology, atmospheric sciences, biology, chemistry, earth and space sciences, economics, folklore, history, management, philosophy, physics, political science, psychology, public health, sociology. Architecture and Urban Planning 187, 190, and M195 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/Ecosystems

The major in geography/ecosystems offers a choice of three plans, each of which has its foundations within the Department of Geography but is essentially interdisciplinary in scope.

Plan 1 (Environmental Policy) has a social science orientation and is designed primarily for students whose environmental interests focus on policy issues concerning environmental management and conservation.

Plan 2 (Natural Resources) has a biogeographic orientation and is designed for students whose environmental interests focus on the conservation and management of renewable natural resources.

Plan 3 (Environmental Engineering) has a physical geography/technological orientation and is designed primarily for students interested in the physical and technological aspects of environmental conservation and management.

All three plans have certain features in common: (1) a high degree of emphasis is placed on student input and interaction with the faculty — particularly with respect to seminars; (2) you are encouraged to consult with the undergraduate adviser in planning a program; (3) all courses required for the major, both geography and non-geography, must be taken for a letter grade. A C average in the major is required for graduation.

Plan 1 (Environmental Policy)

Preparation for the Major: Biology 2, Economics 1, 2, Engineering 11, Geography 1, 2, 5, Mathematics 50, Program in Computing 10A. Geography 3, 4, and 6 are recommended. A mathematics background, such as Mathematics 2, 3A, 3B, and 3C, or 31A, 31B, and 32A, is also recommended.

The Major: Geography 129, three courses from Group Ia, two courses from Group Ib, one course from Group III.

Electives: Six courses from the following: Anthropology 132, 150, 153A, 153B, 167; Architecture and Urban Planning 190; Communication Studies 120; Economics 110, 111, 170; English 131A through 131H; Geography: no more than three courses from 100 through 199; one course only from History 195A through M195G; Political Science 141, 142, 167, 170, 191; Psychology M138; Public Health 150, 152, 154, 186; Sociology 120, 125.

Plan 2 (Natural Resources)

Preparation for the Major: Biology 5, 6, Chemistry 11A, Economics 1, Engineering 11, Geography 1, 2, 5, Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A, 50, Program in Computing 10A. Economics 2, Geography 3, 4, and 6, and Microbiology 6 are recommended.

The Major: One course from Biology 103, 111, M118; Earth and Space Sciences 150; Geography 129, three courses from Group Ia, two courses from Group Ib, two courses from Group III.

Electives: No more than three courses may be taken in any one department to satisfy the elective requirement. Six courses should be selected from the following: Anthropology 132, 167; Biology 103, 111, M118, 120, 122, 125, 131, 135, 147; Civil Engineering 181A, 184A, 184D; Earth and Space Sciences M139; Economics 111, 170; English 131A through 131H; Geography: no more than three courses from 100 through 199; Materials Science and Engineering M107A; Mechanical, Aerospace, and Nuclear Engineering 180A; Public Health 103,152, 154. Biology courses taken for elective requirements may not be applied toward the major requirement in biology.

Plan 3 (Environmental Engineering)

Preparation for the Major: Biology 2, Chemistry 11A, Earth and Space Sciences 1 or 100, Economics 1, Engineering 11, Geography 1, 2, 5, Mathematics 31A, 31B, 32A, 33A, 50, Program in Computing 3 or 10A. Chemistry 11B/11BL, 11C/11CL, Geography 3, 4, 6, Mathematics 33B, Physics 8A, 8B are recommended.

The Major: Earth and Space Sciences M139, 150; Geography 129, five courses from Group I (100, 104, 105, 124, and 106 or M127), two courses from Group III, including 160 or 168.

Electives: Six courses from the following: Atmospheric Sciences 144; Civil Engineering M134A, 181A, 184A, 184B, 184D, 184E; Earth

and Space Sciences 105; Economics 110; Electrical Engineering 103; English 131A through 131H; Geography: no more than three courses from 100 through 199; Mathematics 115A, 141A, 141B; Mechanical, Aerospace, and Nuclear Engineering 103, M105A, M105D, 153A, 180A; Public Health 150.

Honors Program

Honors may be awarded if you attain and maintain at least a 3.4 GPA in the major (including the senior thesis) from the beginning of your senior year to graduation. The thesis (Geography 196) is a substantial though not necessarily lengthy contribution to ecosystem analysis that must be submitted no later than early in your final quarter.

Specialization in Computing

Majors in geography and geography/ecosystems 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), (3) completing at least two courses from Geography 104, 167, 168, 171.

Graduate Study

Admission

Application may be made for admission to any quarter. You must submit an official application, a complete set of transcripts of prior university coursework, the results of the Graduate Record Examination (GRE) Aptitude Test, and three letters of evaluation. You should normally have (1) completed the undergraduate major in geography or its equivalent, (2) received a B.A. 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 and a 3.5 GPA for the Ph.D. (exceptions may be made if your record indicates unusual promise), (4) attained a high GRE score (normally well above 1,100) in the combined verbal and quantitative sections, (5) strong letters evaluating past academic and, possible professional, performance and potential for high achievement in the graduate program.

Non-geography majors entering the graduate program are required to make up identified deficiencies. Normally this entails completing from three to six upper division courses during your first year in residence. Under most circumstances these courses are to be distributed evenly between Groups I and II and are in addition to those required for the M.A. or Ph.D. degree.

Admission to the Ph.D. program usually requires an M.A. or M.S. degree. You must provide clear evidence of your ability to conduct substantive research and to articulate your ideas clearly in writing. In addition, a faculty member must be willing to serve as your interim adviser, so it is advisable to establish prior contact with potential advisers before the decision to admit is made. Under rare circumstances, you may proceed directly toward the Ph.D. degree without taking a master's degree.

The Test of English as a Foreign Language (TOEFL) is normally required of all international applicants whose native language is not English.

Information and graduate brochures may be obtained by writing to the Graduate Adviser, Department of Geography, 1255 Bunche Hall, UCLA, Los Angeles, CA 90024.

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, political, cultural, historical, urban, and regional geography. At the M.A. level students emphasize at least one of these specialized areas; the written qualifying examinations for the Ph.D. include three papers in the major fields or subdisciplines. 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.

Master of Arts Degree

Course Requirements

You must complete at least nine courses, seven of which must be at the graduate level, including the required core courses (Geography 298A, 298B, 298C). 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). Your program must have the approval of your committee chair and the graduate adviser each quarter.

Only one 500-series course may be applied toward the minimum course requirement for the master's degree and toward the minimum graduate course requirement.

Research Tool Requirement

At least one research tool (a foreign language or a series of mathematics or statistics courses) is required. The requirement varies according to each subdisciplinary area or region. At least a B average must be attained in any series of courses taken, and the requirement must be met prior to approval of the thesis proposal by your guidance committee. If a foreign language is selected, the requirement may be fulfilled by (1) taking a series of courses, (2) passing the Educational Testing Service (ETS) examination with a score of 500 or better, or (3) passing a formal departmental written examination.

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 the informal guidance committee, and later under the official thesis 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.

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 subdisciplinary specialization, subject to approval of your committee. The allied field requirement must be met before you can take the oral qualifying examination. Your total program must be approved by the graduate adviser each quarter.

Research Tool Requirement

At least one research tool (a foreign language, statistics, mathematics) is required. The requirement varies according to each subdisciplinary area or region and is required in addition to the M.A. tool requirement. Students who receive their M.A.s elsewhere need to fulfill the UCLA tool requirement for the M.A. (credit may be given for research tools acquired at other institutions). At least a B average must be attained in any series of courses taken, and the requirement must be met prior to approval of the thesis proposal by your guidance committee. If a foreign language is selected, the requirement may be met by (1) taking a series of courses, (2) passing the Educational Testing Service (ETS) examination with a score of 500 or better, or (3) passing a formal departmental written examination.

Qualifying Examinations

You are expected to take the written qualifying examination, which consists of five written papers and is administered by your guidance committee, no later than the sixth quarter of the Ph.D. program (exceptions may be made in case you are entering from disciplines outside geography). 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.

The dissertation is the ultimate focus of your Ph.D. program and demonstrates an ability for independent investigation 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.

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 may be required by the dissertation committee.

Lower Division Courses

Contact the department office to learn of additional offerings, seminar topics, and specific instructors for the quarter you wish to enroll in courses in geography.

1. Physical Environment. Lecture, three hours; laboratory, one hour. A study of the earth's physical environment, with particular reference to the nature and distribution of landforms and climate.

2. Biogeography. Lecture, three hours; laboratory, one hour. Prerequisite: course 1 or equivalent. A study of the earth's biosphere, with particular reference to the evolution and distribution of plants, animals, and soils. May not be offered each quarter.

3. Cultural Geography. Lecture, three hours; discussion, one hour. A broad examination of the basic cultural variables in the human occupance of the earth's surface. Ecological, spatial, and historical approach.

4. Human Location and Behavior. Lecture, three hours; laboratory, one hour. Introduction to the basic concepts used in modern urban and economic geography. Emphasis on giving a better understanding of the effects of location on human behavior. Discussion and practical exercises on the analysis of problems in the Los Angeles urban environment.

5. People and the Earth's Ecosystems. Lecture, three hours; laboratory, one hour. An examination of the historical and contemporary roles of man as a major agent of biological change in the earth's ecosystems.

6. Maps and Mapping. Lecture, two hours; laboratory, two hours; independent study, one hour. Introduction to maps and their role in society. Fundamentals of reading and use of both reference and thematic maps. Influence of maps on attitudes toward and images of the geographic environment. Introductory survey of the fields of cartography and remote sensing.

10. Freshman Seminar in Geography. Staff-student discussion, three hours; reading period, one hour. Prerequisite: course 1 or 2 or 3 or 4 or 5 as befits the theme. A seminar designed to explore various themes and issues pertinent to environment and people. Seminar topics are advertised in the department during previous quarter.

Upper Division Courses

Group I: The Environment

(Ia) Basic Environmental Studies

100. Principles of Geomorphology. Lecture, three hours; discussion, one hour. Prerequisite: course 1 or Earth and Space Sciences 1 or 100 or consent of instructor. Strongly recommended: introductory physics and chemistry. A study of the 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. Mr. Orme

100A. Principles of Geomorphology: Field and Laboratory (2 units). Laboratory/fieldwork, six hours. Prerequisite or 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; discussion, one hour. Prerequisite: course 100. A study of the 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. Mr. Orme

101A. Coastal Geomorphology: Field and Laboratory (2 units). Laboratory/fieldwork, six hours. Prerequisite or 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. Glacial Geomorphology. Lecture, three hours; reading period, one hour. Prerequisites: course 100, upper division standing. An introduction to both mountain and continental glaciers, glacial processes, and deposits. Topics include the classification of glaciers, mass balance, glacier motion, erosion processes, glaciofluvial and glaciolacustrine deposition. Mr. Weirich

103A. Glacial Geomorphology: Field and Laboratory (2 units). Laboratory/fieldwork, six hours. Corequisites: courses 100, 103. Field and laboratory investigations of glacial and glaciofluvial processes of erosion, transport, and deposition. Mr. Weirich

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 the ecosystems of agriculture, animals, man, and urban places. Mr. Terjung

105. Hydrology. Lecture, three hours; reading period, one hour. Prerequisite: course 1 or equivalent. The 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. Prerequisite or corequisite: course 105. Field and laboratory investigations into the 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. A study of the origins, evolution, properties, and utilization of soils, with special emphasis on the world's major soil groups. Ms. Beatty

106A. Soils: Laboratory (2 units). Prerequisite or corequisite: course 106. A study of the natural development of soils, physical and chemical properties of soil, and uses of soil. Analyses of pH, moisture, texture, nutrients, and organics. Includes a one-day field trip. Ms. Beatty

107. Soil and Water Conservation. Lecture, three hours; discussion, one hour. Prerequisite: course 105 or Civil Engineering 184A or equivalent. Recommended: courses 100, 106, 160. A systematic study of the processes of and the hazards posed by erosion, sedimentation, and pollution and the techniques needed to conserve soil and maintain environmental quality. The 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 the world's principal vegetation patterns. Mr. Sauer

109. Ecology of Vegetation. Lecture, three hours; fieldwork, 12 hours total. Prerequisites: course 2 and Mathematics 50, or consent of instructor. Principles of plant ecology at the community and ecosystem levels. Emphasis on structure, dynamics, and measurement of the characteristics of terrestrial vegetation. Ms. Beatty

109A. Ecology of Vegetation: Laboratory (2 units). Prerequisites: course 2 and Mathematics 50, or consent of instructor. Methods of sampling and a variety of current data analysis techniques involving multivariate statistics and computer use. Worksheets, research papers, and two one-day field trips. Ms. Beatty

110. Plant Migration. Lecture, three hours; reading period, one hour. Prerequisites: courses 1, 2, and Biology 2, or equivalent, or consent of instructor. Mechanisms of geographic patterning of natural and artificially modified vegetation. Emphasis on range changes for which there is direct fossil or documentary evidence. Mr. Sauer

112. Animal Geography: Biophysical Aspects. Lecture, three hours; laboratory, two hours. Prerequisites: courses 1, 2, Biology 2. A study of the factors and principles of animal distribution and dispersal on continents and islands of the earth in time and space. Mr. Bennett, Mr. Walter

113. Clastic Sedimentation Processes in Geomorphology. Lecture, three hours. Prerequisites: course 1, 100, and 105, or equivalent, or consent of instructor. Recommended: courses 101, 103, 107, or equivalent. A study of clastic sedimentation transport and deposition processes in geomorphology. Topics include basic fluid mechanics and sediment transport; the tectonic framework of sedimentation; a general overview of depositional environments; and a more detailed discussion of selected environments. Mr. Weirich

(Ib) Applied Environmental Studies

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. Mr. Sauer

117. Animal Geography: Cultural Aspects. Lecture, three hours; reading period, one hour. Prerequisites: courses 1, 2, 5, Biology 2, or equivalent. A study of human cultural factors influencing animal distributions; the roles of animals in human societies; origins and diffusion of domesticated animals.
Mr. Bennett, Mr. Walter

118. Medical Geography. Lecture, three hours; reading period, one hour. Prerequisite: course 5 or consent of instructor. An examination of patterns of population-place-disease interactions and some effects of change and development on disease etiology and problems of health care.

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 the prerequisites should not attempt this course. A geographical, ecological, and historical analysis of the world's agricultural and pastoral systems. Emphasis on energy flows, nutrient cycles, and ecological and social problems associated with the various systems. Mr. Bennett

120. Conservation of Resources: North America. Prerequisites: courses 1 and 2, or equivalent, or upper division standing. An analysis of the basic principles and problems associated with the conservation of natural resources in the United States 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, upper division standing. An analysis of the principles and problems of the conservation of natural resources of the underdeveloped world.
Mr. Bennett

122. Man and Environment in Africa. Lecture, three hours; discussion, one hour. Prerequisites: courses 1, 2, 5. An analysis of the unique ecosystems of tropical and subtropical Africa, with respect to traditional and modern human impacts on vegetation, wildlife, and other natural resources. A discussion of development goals in relation to socioeconomic policies and Africa's environmental heritage. Mr. Walter

123. Bioresource Management. Lecture, three hours; discussion, one hour. Prerequisites: courses 2, 5. Recommended: introductory statistics (i.e., Mathematics 50 or Economics 40). Theory and practice of the management and conservation of bioresources. Introduction to wildlife management, endangered species conservation, and the design and maintenance of National Parks and ecological reserves. Mr. Walter

124. Environmental Impact Analysis. Lecture, three hours; discussion, one hour. Prerequisites: at least two courses from 100 through M127 and Mathematics 50. Recommended: courses 2, 5, 128. Introduction to the interdisciplinary analysis of local and regional impacts on environmental systems. Evaluation of state and federal concepts for the analysis of environmental impact.

125. Marine Ecosystems. Lecture, three hours; reading period, one hour. Prerequisites: courses 1, 2, 5, Biology 5, 7, or equivalent. Description and analysis of the principal marine ecosystems, with particular emphasis on those which are chiefly affected by human activity. Detailed evaluation of the ecological and conservation problems associated with human use of marine ecosystems.

M127. Soil, Plants, and Society. (Same as Biology M127.) Lecture, three hours; field trip. Prerequisites: Chemistry 11A, 11B, and 11C, or equivalent, or consent of instructor. A general treatment of soil development and morphology and the 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 the field trip to explain developmental phenomena. Mr. Lunt

128. The World's Ecosystems: Problems and Issues. Lecture, three hours; discussion, one hour. Prerequisite: course 120 or 121. Identification of past, current, and projected problems associated with man-induced ecological disturbances. Identification and evaluation of the societal and biophysical factors which have contributed to the identified ecological disequilibria.

129. Problems of the Environment: Seminar. Lecture, three hours; reading period, two hours. Prerequisites: senior standing, four courses from Group I. Highly recommended: Mathematics 152A. Limited enrollment. Qualitative-quantitative analysis of problems associated with rational protection and use of selected environmental systems (urban, rural, forest, desert, coastal, water, soil, or others).

Group II: Human Geography

(IIa) Cultural and Historical Geography

130. Geographical Discovery and Exploration. Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. A survey of the history of exploration, from earliest times to modern, with emphasis on the period from Marco Polo to the present.
Mr. Dunbar, Mr. Thrower

133. Cultural Geography of the Modern World. Lecture, three hours; reading period, one hour. Prerequisite: course 3 or equivalent. An evolutionary and structural approach to the sociocultural geography of the modern world system, with particular emphasis on the structure and functioning of its core, semiperiphery, and periphery.
Mr. Entrikin, Mr. Hale, Mr. Salter

135. Reading the Cultural Landscape: Perspectives and Processes. Lecture, three hours; reading period, one hour. Prerequisite: upper division standing or consent of instructor. Understanding personal and societal environmental preferences begins with analysis of the landscape. Attitudes toward the cultural or humanized landscape, methods of landscape analysis, problem landscapes, and environments of the future through lectures, readings, and field study.
Mr. Salter

136. Historical Geography of the United States. Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. A study of the evolution of the cultural landscapes of the area that is now the United States. Examination of past geographies and of geographical change through time. Mr. Dunbar

140. Political Geography. Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. The principles of political geography as developed through regional studies of political phenomena throughout the world. Current problems in domestic and international affairs. Mr. Hale

142. Population Geography. Lecture, three hours; reading period, one hour. A study of the 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

(IIb) Economic and Urban Geography

145. Spatial Organization of Society. Lecture, three hours; reading period, one hour. Prerequisites: course 4 and elementary statistics, or consent of instructor. A study of the spatial structure of society as an expression of human decisions. Emphasis on the processes affecting city size and distribution, the internal structure of cities, rural land use, and industrial location. Mr. Johnson, Mr. Scott

146. Human Spatial Behavior. Lecture, three hours; reading period, one hour. Prerequisites: course 4 and elementary statistics, or consent of instructor. A study of human behavior within the spatial context. Regularities in patterns of trade, consumer behavior, migration, mobility, communication, and diffusion.
Mr. Johnson

148. Economic Geography. Lecture, three hours; reading period, one hour. Prerequisite: course 4 or consent of instructor. Geographical aspects of economic production and growth. The general theory of the space-economy. Land-use processes. Location of industry. Regional development. Mr. Scott

149. Transportation Geography. Prerequisite: course 3 or 4 or upper division standing. A study of the geographical aspects of transportation, focusing on the characteristics and functions of the various modes and on the 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. An analysis of the 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. A survey of the diffusion and growth of cities in Western civilization. The development of city systems and the evolution of urban internal spatial structure.

152. World Cities. Lecture, three hours; reading period, one hour. Prerequisite: upper division standing. A discussion of the growth and structure of selected cities as illustrations of the processes of urbanization in different countries and societies. Topics include rural to urban migration, cities as centers of power, spatial organization, and the tendency to megalopolitanization. Mr. Clark

156. Metropolitan Los Angeles. Lecture, three hours; reading period, one hour. Prerequisite: upper division standing. A study of the origins, growth processes, internal structure and pattern, interactions, environmental and spatial problems of the Los Angeles metropolitan area.

159. Problems in Human Geography. Staff-student discussion, three hours; reading period, one hour. Prerequisites: two courses from Group II, senior standing. Limited to 15 students. A seminar course in which students carry out intensive research projects. Designed as a "capstone" to courses in this group, the subjects of research grow out of prior work.

Group III: Procedures

160. Field and Laboratory Analysis in Geomorphology. (Formerly numbered 160, 162.) Laboratory/fieldwork, eight hours. Prerequisites: course 100 and two courses from 101, 103, 105, 106, 107. Limited to geography and ecosystems majors, with enrollment priority to seniors, then to juniors. Students must preenroll in the department during the prior quarter. Examination of field and laboratory procedures and intellectual concepts used in the observation, measurement, analysis, and interpretation of landforms, constituent materials, and relevant processes.
Mr. Orme, Mr. Trimble, Mr. Weirich

161. Field Analysis: Cultural Geography. Fieldwork, once a week from 8 to 5. Prerequisites: courses 1, 3, two upper division courses in geography, consent of instructor. Enrollment priority to geography majors. The observation, analysis, and mapping of landscape phenomena of human origin. Techniques of data collection examined for such topics as settlement form and pattern, environmental change, historical and demographic change, and land use.
Mr. Salter

163. Field and Laboratory Analysis: Biogeography. Laboratory/fieldwork, eight hours. Prerequisites: courses 2, 5, or equivalent, two courses from 106, 108, 109, 112. Limited to geography and ecosystems majors, with enrollment priority to ecosystems majors. Examination of field and laboratory procedures and intellectual concepts used in the observation, measurement, analysis, and interpretation of phenomena pertinent to biogeography and interrelated human influences. 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. McMaster

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. McMaster

169. The Earth from Above. Lecture, three hours; reading period, one hour. Prerequisites: courses 1, 3, and 4, or consent of instructor. The 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

171. Quantitative Analysis. Lecture, three hours; laboratory, one hour. Prerequisite: Mathematics 50 or consent of instructor. An introduction to the methods of measurement and interpretation of geographic distributions and associations.
Mr. Clark, Mr. McMaster

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

Group IV: Regions

180. North America. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. Delimitation and analysis of the principal geographic regions of the United States and Canada. Mr. McKnight

181. Middle America. Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. A study of the geographic factors, physical and cultural, that are basic to an understanding of the historical development of Middle America and of the contemporary economic and cultural geography of Mexico and the countries of Central America and the West Indies.
Mr. Bennett

182A. Spanish South America. Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. A study of the geographic factors, physical and cultural, that are basic to an understanding of the historical development of Spanish South America and of 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. A study of the geographic factors, physical and cultural, that are basic to an understanding of the historical development of Portuguese South America and of 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. A 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. A 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. A 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. A systematic geographic analysis of the elements of landscape, resources, population, and socioeconomic characteristics of the People's Republic of China. The 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. Mr. Salter

187. Middle East. Lecture, three hours; reading period, one hour. Prerequisites: courses 1 and 3, or equivalent, or upper division standing. An analysis of the 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. An analysis of the economic, social, and political geography of the area including Mediterranean Africa, the Sahara, the Sudanic belt, and the 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. The 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. A regional synthesis of the 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. A systematic and regional treatment of the geography of California, including the physical, cultural, and economic aspects and detailed studies of the various regions.
Mr. McKnight

Special Studies

196. Senior Thesis in Ecosystems Analysis. Hours to be arranged. Prerequisites: courses 129, 160 or 163, senior standing. Preparation and data collection and analysis for a senior thesis under the guidance and assistance of a faculty sponsor. (F,W,Sp)

199. Special Study (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: a 3.25 overall GPA, at least five upper division geography courses with a 3.5 GPA. **199HA.** An independent study course taught by a team of two faculty members who assist the student with bibliographic research and/or field research on a topic of mutual interest to the student and the faculty members. Successful completion of course 199HA entails the preparation of a detailed bibliography and outline (to be evaluated by the two faculty members) for the writing of a substantial paper during course 199HB. If that work is determined to be of A quality, the student is allowed to continue in the honors program. If that work is graded B or below, credit is awarded, but the student is not permitted to continue in the honors program. **199HB.** Devoted to the writing of the substantial paper researched and outlined in course 199HA. It also is evaluated by the two faculty members. If the paper is determined to be of A quality, the student graduates with honors in geography. If the paper is graded B or below, credit is awarded, but the student does not receive honors.

Graduate Courses

Group I: The Environment

200. History and Paradigms of Geomorphology. Lecture, two hours; discussion, one hour; reading period, eight hours. Prerequisites: course 100 and 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 184A. Discussion of selected topics pertaining to the 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 the action of snow and ice in arctic and alpine environments. May be repeated for credit. Mr. Weirich

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. An introduction to the 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. Terjung

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. Terjung

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. An intensive review and analysis of physical and cultural factors influencing plant distributions. Mr. Sauer

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. An 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. Seminar: Quaternary Studies. 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. An analysis of the changing environment of 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. An in-depth study of selected topics in medical geography and an intense review of recent research.

223. Seminar: Humid Tropics. Discussion, three hours; reading period, two hours. Prerequisite: consent of instructor. 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. Mr. Bennett

227. Water Quality Management. Discussion, three hours; reading period, one hour. Prerequisites: graduate standing, consent of instructor. Discussion of the basic technical, regional planning, and public policy issues in water quality management.

229. Seminar: Man and Environment. Discussion, three hours; reading period, two hours. Prerequisite: course 128 or equivalent. An 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.

Group II: 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 the development of cultural landscape in different geographic environments. Mr. Hale, Mr. Salter

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, Mr. Salter

236. Advanced Historical Geography of the United States. Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisites: course 136, consent of instructor. Some major themes in American historical geography. Mr. Dunbar

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. Mr. Dunbar

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 the 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. A study of population dynamics and migration, spatial variation in population composition, and population resource problems, diffusion, and epidemiology.

248. Location and Space Economy. Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisites: courses 145 and 146, or consent of instructor. Methods of locational analysis as applied to problems of regional growth and development. 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. Prerequisites: courses 145 and 146, or consent of instructor. A general study of the hierarchy of urban places, including diffusion within the urban hierarchy and theories to account for the location and size distribution of cities. Mr. Clark

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. Prerequisites: courses 145 and 146, or consent of instructor. A study of the links between urban social and urban spatial structure, emphasizing urban residential land use, social areas of the city, and accessibility and urban form. Mr. Scott

254. Migration and Residential Mobility. Lecture, two hours; discussion, one hour; reading period, one hour. Prerequisite: consent of instructor. The description and modeling of national, regional, and intra-urban migration. Mr. Clark

Group III: 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, Mr. Weirich

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. Mr. Salter

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. A survey of the literature of geography, with special reference to periodicals. Intended for beginning graduate students. Mr. Dunbar

267. Advanced Cartography. Laboratory, three hours; independent study, two hours. Prerequisite: course 167 or equivalent or consent of instructor. Advanced work in the theory and practical application of modern cartographic principles. Special emphasis on terrain representation, quantitative and computer mapping, scribing, color separation, and reproduction of maps. Mr. McMaster, Mr. Thrower

269. Remote Sensing of Environment. Laboratory, three hours; independent study, two hours. Prerequisite: course 167 or equivalent or consent of instructor. The study of aerial photographs and other remote sensing images as tools for geographical research. Particular attention to the analysis of landscapes and the interpretation of interrelationships of individual features in their physical and cultural complex. Mr. Thrower

M270A-M270B-M270C. Seminar in Climate Dynamics (2 to 4 units). (Same as Atmospheric Sciences M270A-M270B-M270C and Earth and Space Sciences M270A-M270B-M270C.) Lecture, two hours. The 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 mantel. The climate of other planets. The modeling, simulation, and prediction of modern climate on the 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 M215B.) Lecture, two hours; discussion, one hour; laboratory, one hour. Prerequisites: course 171 or Mathematics 50, consent of instructor. Specific techniques useful in the analysis of spatial distributions, including both point and areal patterns and emphasizing spatial descriptive statistics, probability models of spatial distributions, and statistical surfaces. Mr. Clark

273. Seminar: Model Building for Spatial Analysis. Discussion, three hours. Prerequisite: consent of instructor. Discussions of the philosophy and methodology of model building, with emphasis on the 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. A 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

Group IV: 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. Mr. Thrower

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. Mr. Salter

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. Australia. Prerequisites: course 190, consent of instructor. Mr. McKnight

291. The Arid Lands. Prerequisites: courses 104, 106, 108, 116, 120, 148, or equivalent, consent of instructor. An investigation of the physical and cultural complexes of the world's arid regions. Salient factors include climate, landforms, water, soils, natural vegetation, and the various aspects of human occupance, including future possibilities for human utilization.

292. Advanced Regional Geography: Selected Regions. Lecture, three hours; discussion, one hour. Prerequisite: appropriate upper division regional course. A lecture series devoted to a specific region at the 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 the growth of the modern philosophy of geography. Mr. Entrikin

Core Courses

298A. Philosophical Issues in Geographical Inquiry. (Formerly numbered 200A.) Lecture, three hours. Prerequisite: consent of instructor. A discussion of geographical research within the context of philosophical debates concerning the nature of scientific inquiry. Mr. Entrikin

298B. History of Modern Geography. (Formerly numbered 200B.) Lecture, three hours; reading period, one hour. Prerequisite: consent of instructor. The evolution of the field of geography in the 19th and 20th centuries, with emphasis on the professionalization of geography and its emergence as a modern academic discipline. Mr. Dunbar

298C. Statistical Methods for Geographic Research. (Formerly numbered 200C.) Lecture, three hours; laboratory, two hours. Prerequisite: course 171 or equivalent. The use of linear models, discriminant functions, and factor analysis to analyze problems in geography. Mr. Clark

Special Studies

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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 of 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 M.A. Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 8 units). Prerequisite: consent of instructor. Special individual 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.

Geology

See Earth and Space Sciences

Geophysics and Space Physics

See Earth and Space Sciences

Germanic Languages

302 Royce Hall, (213) 825-3955

Professors

Ehrhard Bahr, Ph.D. *(German)*
Franz H. Bäuml, Ph.D. *(German)*
Marianna D. Birnbaum, Ph.D., *in Residence (Hungarian)*
Wolfgang Nehring, Ph.D. *(German)*
Hans Wagener, Ph.D. *(German), Chair*
Donald J. Ward, Ph.D. *(German and Folklore)*
Terence H. Wilbur, Ph.D. *(Germanic Linguistics and Philology)*

Emeritus Professors

Gustave Otto Arlt, Ph.D., LL.D.
Carl William Hagge, Ph.D.
Wayland D. Hand, Ph.D.
William J. Mulloy, Ph.D.
Victor A. Oswald, Jr., Ph.D.
Eli Sobel, Ph.D.
Erik Wahlgren, Ph.D.

Associate Professors

Jesse L. Byock, Ph.D. *(Old Norse)*
Janet R. Hadda, Ph.D. *(Yiddish)*
Robert S. Kirsner, Ph.D. *(Dutch and Afrikaans)*
Kathleen L. Komar, Ph.D. *(German)*
Vern W. Robinson, Ph.D., *Emeritus*

Assistant Professors

T. Craig Christy, Ph.D. *(Germanic Linguistics and Philology)*
Steven D. Martinson, Ph.D. *(German)*

Lecturer

Jutta Landa, Ph.D. *(German)*

Visiting Lecturer

Barbara Bopp, 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 a 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 Dutch and Afrikaans, 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. Course 1 is not open for credit to students who have completed two years of high school German or equivalent with grades of C or better. 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, 128, 134; Group III — three courses from 103, 105, 106, 107, 137; Group IV — four courses from 121B, 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.

Departmental Honors

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.

Teaching Credential in German

Students desiring the general secondary credential in German should consult the Graduate School of Education (201 Moore Hall) 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 United States. 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, 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.

Master of Arts in German

Admission

A bachelor's degree 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 will be 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 two 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 a teaching credential. Plan B is for students whose main interests are literary and linguistic rather than pedagogical and for students 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 reading examination in French with a score of 500 or better. The test is administered through University Extension at the beginning of each quarter, including the summer.

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.

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.

Thesis Plan

If you choose this plan, a thesis committee will be established no later than the end of your fourth quarter of graduate study to evaluate the proposal for the thesis. After acceptance of the thesis you must pass a two-hour oral 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 quarter, beginning with the written part during the fifth week of each quarter. Under exceptional circumstances the chair of the department will receive petitions for M.A. examinations during the summer recess.

One examination committee is appointed for each quarter. 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, and the history of the German language are included. Part 2 of the written examinations covers major works and authors of German literature from earliest times to the present and concepts of literary criticism. 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.

If you apply for an M.A. under Plan B (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) will be 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. in Germanic Languages. However, the following rules apply: (1) you must have successfully completed 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 quarter.

Written examinations may be repeated in case of failure. A 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 place 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; (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. Not open for credit to students who have completed two years of high school German or equivalent with grades of C or better. Students are, however, credited with four units toward the minimum progress requirement. Ms. Bopp

1G. Elementary German for Graduate Students. Preparation for the Graduate Division foreign language reading requirement. May not be applied toward degree requirements. S/U grading.
Mr. Christy, Mr. Wilbur

2. Elementary German. Lecture, five hours; laboratory, one hour. Prerequisite: course 1. Not open for credit to students who have completed two years of high school German or equivalent with grades of C or better. Students are, however, credited with four units toward the minimum progress requirement.
Ms. Bopp

2G. Elementary German for Graduate Students. Preparation for the Graduate Division foreign language reading requirement. May not be applied toward degree requirements. S/U grading.
Mr. Christy, Mr. Wilbur

3. Elementary German. Lecture, five hours; laboratory, one hour. Prerequisite: course 2 or two years of high school German. Ms. Bopp

4. Intermediate German. Lecture, five hours. Prerequisite: course 3 or three years of high school German. Ms. Bopp

5. Intermediate German. Prerequisite: course 4 or four years of high school German. Ms. Bopp

6. Intermediate German. Prerequisite: course 5 or equivalent. Ms. Bopp

12. German Conversation (2 units). Prerequisite: course 1 or one year of high school German. Use of German language teaching films; students have the opportunity to practice spoken German in small groups. Ms. Bopp

14. Intermediate Conversation (2 units). Prerequisite: course 3 or three years of high school German. Students have the opportunity to practice spoken German in small groups. Ms. Bopp

95. Freshman Seminar. 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 119F, 121A, 121B) 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 is not required. A study of the development of German civilization and institutions from the earliest times to 1700. Study of German culture as represented in its literature, art, music, and architecture. Mr. Bäuml, Mr. Wagener, Mr. Ward

100B. Modern German Civilization and Culture from 1700 to 1919. Lectures, discussions, and readings in English; knowledge of German is not required. A study of the development of German civilization and institutions from 1700 to 1919. Study of German culture as represented in its literature, art, music, and architecture. Mr. Wagener

100C. German Civilization and Culture in the 20th Century. Lectures, discussions, and readings in English; knowledge of German is not required. A study of the development of German culture and institutions from 1919 to the present, emphasizing developments in literature, the 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 a systematic consideration of poetic conventions and forms, diction, tone, imagery, symbolism, and metrics. Course should be taken at the 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 a systematic introduction to dramatic forms, techniques, and theories. Texts selected from modern literature as well as from other periods. Course should be taken at the beginning of literary studies.
Mr. Bahr, Mr. Martinson, Mr. Nehring

101C. Introduction to German Narrative Prose. Analysis of significant examples of narrative prose (e.g., short story, novelle, novel, fairy tale, etc.), including a systematic introduction to narrative forms, techniques, styles. Texts selected from modern literature as well as from older periods. Course should be taken at the beginning of literary studies.
Ms. Komar, Mr. Nehring

102. Business German. Prerequisites: courses 1, 2, 3, 4, 5, 6. German for business studies: exercises in German business correspondence, terminology of export and import, readings and translations in the field of business German. Ms. Landa

103. Introduction to German Enlightenment, *Sturm und Drang*, and Classicism. 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, Mr. Martinson

105. Introduction to 19th-Century German Literature. 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. Composition and Conversation.
Mr. Christy, Ms. Landa, Mr. Martinson

108B. Composition and Conversation. Prerequisite: course 108A or consent of instructor.
Mr. Christy, Ms. Landa, Mr. Martinson

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. Mr. Bäuml, Mr. Ward

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 the 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, Mr. Martinson

119C. The Faust Tradition from the Renaissance to the Modern Age, in English Translation. (Formerly numbered 119J.) Lecture, three hours. Readings and discussions in English of the Faust theme and tradition in European literature and intellectual history, including the 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, Mr. Martinson

119D. The Romantic Heritage in German Literature, in English Translation. (Formerly numbered 119C.) Lecture, three hours. Study and analysis of literary works in English translation that reflect German Romantic imagination from the 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. (Formerly numbered 119D, 119E, 119F.) 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, Christa Wolf. Topics vary from quarter to quarter. May not be applied toward completion of the major in German. May be repeated for credit.

119F. From Dream to Nightmare: The German-Jewish Experience, in English Translation. (Formerly numbered 119G.) 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

Courses Open for Credit to Majors, Nonmajors, and Graduate Students in German

121A. Special Problems in Literature. Lecture, 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. The German Film in Cultural Context. A survey of various aspects of the German film in relationship to literary, artistic, and political directions of the times, with emphasis on the film as a separate mode of artistic expression.

121C. Selected Topics in German Culture and Civilization. Lecture, three hours. Required of all German majors who are candidates for the standard credential in secondary teaching.

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. Bäuml, Mr. Wagener, Mr. Ward

123. Goethe. Prerequisites: courses 100A or 100B and 103, 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, Mr. Martinson

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. Hoffmann, and Eichendorff. Ms. Komar, Mr. Nehring

126. Advanced Study in Modern Literature. Prerequisites: courses 100A, 100B, or 100C, and 106, or consent of instructor. Reading and analysis of a wide range of the literature from 1890 to 1945.
Mr. Nehring, Mr. Wagener

127. Advanced Study in Contemporary Literature. Prerequisites: courses 100A, 100B, or 100C, and 107, or consent of instructor. Analysis of a wide range of German literature from 1945 to the present.

128. Advanced Composition, Grammar, and Conversation. Prerequisites: courses 108A and 108B, or consent of instructor. Mr. Christy, Ms. Landa

129. German Phonetics. Study of the articulatory basis of the sounds of German and practice in standard pronunciation. Mr. Christy

130. Methodology of Literary Criticism. Prerequisite: senior standing or consent of instructor. Introduction to the methodology of literary criticism, including a 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, Mr. Bäuml, Mr. Martinson

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, Mr. Martinson

134. German Folklore. A survey of the various genres of German folklore. Mr. Ward

137. Language and Linguistics. Prerequisites: courses 100A or 100B, 108A. Introduction to the historical development of the German language; theories and methods of linguistics. Mr. Christy

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). Prerequisite: consent of instructor. To be arranged with faculty member who will direct the study (course section to be identified by a two-letter code using initials of sponsoring instructor — see department for code). A course of independent study 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 the 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 the analysis of sources, compilation and presentation of bibliographies, and the writing of research papers. Mr. Bahr, Mr. Ward

201C. Theories of Literary Criticism. Analysis and discussion of the foundations of literary criticism and current theories such as hermeneutics, positivism, psychology, sociology, intellectual history (Geistesgeschichte), New Criticism, Marxist Criticism, Russian and Czech Formalism, structuralism, and semiotics.
Mr. Bahr, Mr. Bäuml

202A. Middle High German. Introduction to the grammar, syntax, and vocabulary of the Middle High German language. Exercises in reading Middle High German literary works, combined with a study of the sociocultural contexts in which the works of the medieval period were produced and performed.
Mr. Bäuml

202B. Readings in Middle High German Literature. Extensive reading of the literary monuments of the medieval period in Germany. Introduction to the cultural and literary history of the Middle Ages.
Mr. Bäuml, Mr. Ward

203A. The Courtly Epic. An analysis of the major epics of the medieval period in Germany, such as Hartmann's *Erec* and *Iwein*, Wolfram's *Parzival*, and Gottfried's *Tristan*. A study of courtly society, as well as an introduction to methods of interpretation and analysis. Mr. Bäuml

203B. The Courtly Lyric. Analysis of the medieval songs of courtly performers, beginning with Der von Kürenberg and ending with Johannes von Hadlaub. Study of the sociocultural context in which the songs were produced and performed, and an introduction to methods of interpretation and analysis.
Mr. Bäuml, Mr. Ward

203C. The Heroic Epic. A survey of German heroic literature, beginning with the *Hildebrandslied* and including such works as the *Nibelungenlied*, *Kudrun*, and the Dietrich epics. Methods of analysis and interpretation, as well as an analysis of thematic and formal characteristics of the different epics.
Mr. Bäuml, Mr. Ward

204. Renaissance and Reformation Literature. The literature of the 15th and 16th centuries, including an introduction to and the study of the early New High German language. Selected readings from the works of such authors as Sebastian Brant, Martin Luther, Hans Sachs, and Johann Fischart.
Mr. Bäuml, Mr. Wagener, Mr. Ward

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 such authors as Leibniz, Thomasius, Wolff, Bodmer and Breitinger, Johann Elias Schlegel, Haller, Brockes, Anacreontic poets, Gessner, Klopstock, Mendelssohn, and Wieland.
Mr. Bahr, Mr. Martinson

206B. *Sturm und Drang*. Study of representative authors of the *Sturm und Drang* period, such as Herder, Forster, Gerstenberg, Leisewitz, Klinger, Wagner, R.M. Lenz, Moritz, Heinse, Schubart, and the young Goethe and Schiller. Mr. Bahr, Mr. Martinson

207A. Classicism: Goethe. Selected topics from the 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

207B. Classicism: Schiller. Selected topics from the 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, Mr. Martinson

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. The 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 *Volkstheater.* 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, 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 the context of literary, cultural, and political trends.

211B. Contemporary Lyrics and Drama. A 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 the context of literary, cultural, and political trends.

217. History of the German Language. A historical survey of the development of the standard literary German language from the time of Indo-European unity through proto-Germanic, West Germanic, the medieval period, the Reformation, the baroque period, and the Enlightenment until its final codification at the end of the 19th century. Mr. Christy, Mr. Wilbur

230. Survey of Germanic Philology. A systematic survey of the major problems in the field of Germanic linguistics: the origin and historical diffusion of the Germanic dialects and their classification; problems in the evolution of the nominal and verbal morphology of the various dialects; problems in the phonological evolution of the various dialects. Mr. Wilbur

231. Gothic. A systematic study of the phonology and grammar of the Gothic language, with readings in Wulfila's translation of the Bible and an introduction to the history of the Goths and their place in the development of modern Europe. Mr. Wilbur

232. Old High German. An introduction to the earliest phases of German literature, with extensive readings in the major documents of that period (750-1050). Emphasis on the grammatical interpretation of these documents and the identification of the dialects used in their composition. Mr. Christy, Mr. Wilbur

233. Old Saxon. An introduction to the study of the earlist documents in Old Low German. Readings in the *Heliand* and the study of the *Old Saxon Genesis.*
Mr. Christy, Mr. Wilbur

240A. Theories, Methods, and History of Germanic Folklore. The history of Germanic folklore studied in the context of European cultural history. The evolution of the theories and methods of the discipline as developed by Herder, the Grimms, Bolte, Meier, Naumann, Bausinger, and others. Mr. Ward

240B. Folk Song and Ballad. Analysis of the poetic and musical aspects of German folk songs and ballads. Study of thematic and formalistic evolution of text and music, combined with an introduction to the theories and methods of analysis of folk music and the function of folk song in its social context.
Mr. Ward

240C. Oral Prose Genres. Study of the thematic and formal characteristics of legends, folktales, jests, proverbs, and riddles. The role of popular narrative in its sociocultural context in German history and a survey of methods of analysis of narratives, texts, and contexts. Mr. Ward

245B. Germanic Antiquities. Survey of the prehistory and early history of Germanic civilization from the Bronze Age to the end of the migrations on the basis of archaeological, historic, and philological evidence. Uses of methods of comparative ethnography, religion, and myth to interpret the evidence.
Mr. Ward

251. Seminar in Syntax and Phonology of German. Topics selected from the field of contemporary German syntax and phonology according to the needs and preparation of the students enrolled (e.g., *Dialektgeographie,* generative phonology, generative syntax, *Valenztheorie, Texttheorie).* Mr. Wilbur

252. Seminar in Historical and Comparative German Linguistics. Topics selected from the field of historical German phonology and syntax according to the needs and preparation of the students enrolled (e.g., the West Germanic problem and the classification of the Germanic languages, the development of Germanic verbal and nominal morphology, proto-Germanic syntax). Mr. Wilbur

253. Seminar in Medieval Literature. Selected topics in medieval literature, with emphasis on problems in literary analysis and the applicability of various types of analysis to medieval texts.
Mr. Bäuml, Mr. Ward

254. Seminar in 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 the methods of literary history to the literature of the 15th and 16th centuries. Mr. Bäuml, Mr. Ward

255. Seminar in 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 the application of methods of literary analysis pertinent to the literature of this age.
Mr. Wagener

256. Seminar in 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, Mr. Martinson

257. Seminar in the 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

258. Seminar in 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 in 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 in the 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 in Contemporary Literature. Study of selected works, a specific author, genre, period, or topic from 1945 to the present. Texts analyzed and placed in the context of literary, cultural, and political trends.

262. Seminar in Germanic Folklore. Detailed research on individual aspects of Germanic folklore. The topic selected generally is drawn from the course in the German 240 series that preceded the seminar. Emphasis on problems of theory and method.
Mr. Ward

263. Seminar in Theories of Literature. Specialization in literary theories, such as *Rezeptionsästhetik,* Neo-Marxist Criticism, New Criticism, psychology or sociology of literature, structuralism, semiology, and hermeneutics. Mr. Bahr, Mr. Bäuml

370. The Teaching of German in Secondary Schools. Lecture, three hours; discussion periods. Prerequisite: graduate standing or consent of instructor. Required of all candidates for the general secondary credential in German.

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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. Preparation for College Teaching of German (2 units each). Study of problems and methods in teaching German on the college level. Theory and classroom practice, observation, and critical evaluation. May not be applied toward the M.A. course requirements. In Progress and S/U grading.

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 a two-letter code using initials of sponsoring instructor — see department for code). May be repeated once; however, only one course in the 500 series may be applied toward the 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 a two-letter code using initials of sponsoring instructor — see department for code). May be taken only once before and only once after the M.A. degree, except for Ph.D. candidates with a formal minor field of studies who may take the course twice after the M.A., once in the major and once in the minor. Only one course in the 500 series may be applied toward the 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 a two-letter code using initials of sponsoring instructor — see department for code). Only one course in the 500 series may be applied toward the 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 a two-letter code using initials of sponsoring instructor — see department for code). May be repeated. S/U grading.

Dutch and Afrikaans

Upper Division Courses

103A. Elementary Dutch. (Formerly numbered 101A.) Lecture/language laboratory. 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

103B. Elementary Dutch. (Formerly numbered 101C.) Lecture/language laboratory. Prerequisite: course 103A or equivalent. Mr. Kirsner

103C. Intermediate Dutch. (Formerly numbered 101D.) Lecture/language laboratory. Prerequisite: course 103B or equivalent. Grammatical exercises, conversation, reading and analysis of simple texts. Mr. Kirsner

105A. Elementary Afrikaans. (Formerly numbered 101B.) 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. (Formerly numbered 101E.) Lecture/language laboratory. Prerequisite: course 105A or equivalent. Grammatical exercises; reading and linguistic analysis of texts from both literary and nonliterary sources. Mr. Kirsner

112. Dutch, Flemish, Afrikaans Literature in Translation. Readings and analysis of selected works in translation from Dutch, Flemish, and Afrikaans literature. 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 an 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 the 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

135. Introduction to Afrikaans Literature. Discussion, three hours. Prerequisite: course 105B or equivalent. Analysis of selected works from the 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 the work of poets such as Eybers, Opperman, W.E.G. Louw, Van Wyk Louw, and Breytenbach. Mr. Kirsner

199. Special Studies in Dutch and Afrikaans (2 to 4 units). Mr. Kirsner

Graduate Courses

234. The Structure of Modern Standard Dutch. A detailed examination, from contrasting theoretical viewpoints, of central problems in Dutch phonology, grammar, and semantics, with attention to related phenomena in German, English, and Afrikaans. Equivalent to Linguistics 225. Mr. Kirsner

596. Directed Individual Study or Research in Dutch and Afrikaans. To be arranged with faculty member who will direct the study or research (course section to be identified by a two-letter code using initials of sponsoring instructor — see department for code). 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 code). 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-101D or equivalent. Conversation, reading, and discussion of literary texts. Ms. Birnbaum

101F. Advanced Hungarian. Prerequisites: courses 101A-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. A study of Hungarian civilization and institutions from the 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.) A 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 the traditions of the smaller Ugric nationalities (Voguls, Ostyaks, etc.). Ms. Birnbaum

199. Special Studies in Hungarian (2 to 4 units). Prerequisite: consent of instructor. A course of independent study 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. A comparison of the journeys of heroes. Readings in mythology, legend, folktale, and epic, including the *Nibelungenlied*, the *Volsunga saga*, the *Eddas*, and *Beowulf*. Cultural and historic backgrounds to the texts. All readings in English. Mr. Byock

Upper Division Courses

139. 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 to the history and culture that produced this literature. Mr. Byock

140. Viking Civilization and Literature. Readings in the history, society, and culture of the early Scandinavians. All texts in English: Old Norse sagas, *Eddas*, and early ballad literature. Mr. Byock

C145. Old Norse Literature and Society. Lecture, three hours. Readings in primary texts in conjunction with the critical literature. Specific issues in medieval Scandinavian studies. May be repeated for credit. Concurrently scheduled with course C223. Mr. Byock

151. Elementary Old Norse. Introduction to the grammar and pronunciation of Old Norse. Selected readings from the sagas and the *Prose Edda*. Mr. Byock

152. Intermediate Old Norse. Prerequisite: course 151 or equivalent. Continued grammar, pronunciation, and readings from the *Eddas* and the sagas of the Icelanders, the Norwegian kings, and the 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. A course of independent study 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 the *Poetic Edda*. Secondary sources used where appropriate. Mr. Byock

C223. Old Norse Literature and Society. Lecture, three hours. Critical issues in medieval Scandinavian studies. May be repeated for credit. Concurrently scheduled with course C145. Mr. Byock

245A. Germanic and Scandinavian Mythology. Lecture, three hours. A study of Northern myth and religion through a close reading of the Eddic texts and secondary sources. 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 a two-letter code using initials of sponsoring instructor — see department for code). May be repeated once; however, only one course in the 500 series may be applied toward the 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 code). S/U grading. Mr. Byock

Yiddish

Lower Division Courses

1. Elementary Yiddish. Introduction to grammar; instruction in listening, speaking, reading, and writing skills. Ms. Hadda

2. Elementary Yiddish. Prerequisite: course 1 or equivalent. Ms. Hadda

3. Elementary Yiddish. Prerequisite: course 2 or equivalent. Ms. Hadda

Upper Division Courses

104. Intermediate Yiddish. Prerequisite: course 3 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 20-century literature. Ms. Hadda

199. Special Studies in Yiddish (2 to 4 units). Prerequisite: consent of instructor. A course of independent study 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 a two-letter code using initials of sponsoring instructor — see department for code). 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 code). S/U grading. Mr. Hadda

Scandinavian Section

332 Royce Hall, (213) 825-2432

Professors

Ross P. Shideler, Ph.D.
Kenneth G. Chapman, Ph.D., *Emeritus*
Erik Wahlgren, Ph.D., *Emeritus*

Associate Professors

James R. Massengale, Ph.D.
Mary Kay Norseng, Ph.D., *Vice Chair*

Adjunct Lecturers

Inkeri A. Rank, M.A., M.Ed. *(Finnish Studies)*
Jules L. Zentner, Ph.D.

Scope and Objectives

Scandinavia consists of five Northern European countries: Denmark, Finland, Iceland, Norway, and Sweden. Together with the Faroe Islands and Greenland, these countries form a geographic bridge between the American and European continents and a political bridge between the West and Eastern Europe. For all students of literature, history, and social planning, 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 will 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 quarters 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.

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 a knowledge of the Scandinavian languages). You must pass the Graduate School Foreign Language Test 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 courses on the upper division or graduate level may be taken in a related field of linguistic or literary study to be determined in consultation with the graduate adviser; at least one of these must be on the graduate level. Comparative Literature 200 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 feel prepared to be examined on both the coursework and the reading list.

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 a 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.

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.

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 of Scandinavian literature and culture. Selected works from the literature of Norway, Sweden, 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.

60. Ingmar Bergman and Other Swedish Filmmakers. Discussion, three hours. Knowledge of a Scandinavian language or of film is not required. Intended for students in general and for those preparing for more advanced studies in Scandinavian literature or culture. A 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.

Upper Division Courses

105. Advanced Swedish. Prerequisite: course 30 or equivalent. Readings, composition, and conversation in Swedish. Mr. Massengale, Mr. Shideler

106. Advanced Swedish. Prerequisite: course 105 or equivalent. Readings, composition, and conversation in Swedish. Mr. Massengale, Mr. Shideler

110. Advanced Danish and Norwegian. 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.) The methods and results of Finnish folklore studies and the mythic traditions of the Finns. Special attention to the oral epic, beliefs, and legends. Ms. Rank

M123B. Finnish Folk Song and Ballad. (Same as Folklore M123B.) Course M123A is not prerequisite to M123B. A survey of Finnish balladry and folk song, with attention to historical development, ethnic background, and poetic and musical values. Ms. Rank

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 the material manifestations of Lappish culture: arts and crafts, textiles, costume, folk technology.
Ms. Rank

130. Elementary Finnish. Introduction to pronunciation and grammar. Ms. Rank

131. Intermediate Finnish. Prerequisite: course 130 or equivalent. Grammatical exercises and readings.
Ms. Rank

132. Advanced Finnish. Prerequisite: course 131 or equivalent. Readings, composition, and conversation. Ms. Rank

138. Survey of Finnish Literature. Conducted in English; knowledge of Finnish is 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.
Ms. Rank

141. Backgrounds of Scandinavian Literature. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language is not required. Readings and discussions of representative texts selected from the literature of the medieval, Renaissance, baroque, and Enlightenment periods. Mr. Massengale

142. Scandinavian Literature of the 19th Century. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language is not required. Readings and discussions of selected works from the literature of Scandinavia in the 19th century.
Mr. Massengale, Ms. Norseng

143. Modern Scandinavian Literature. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language is not required. Readings and discussions of selected works of modern Scandinavian literature.
Mr. Massengale, Ms. Norseng, Mr. Shideler

C144. Henrik Ibsen. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language is not required. Readings and discussions of selected plays by Henrik Ibsen. May be concurrently scheduled with course C251. Ms. Norseng

C145. August Strindberg. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language is not required. Readings and discussions of selected plays by August Strindberg. May be concurrently scheduled with course C252.
Mr. Massengale, Mr. Shideler

C146. Søren Kierkegaard. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language is not required. Readings and discussions of selected works by Søren Kierkegaard. May be concurrently scheduled with course C253. Mr. Massengale

C147. Knut Hamsun. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language is not required. Readings and discussions of selected works by Knut Hamsun. May be concurrently scheduled with course C254. Ms. Norseng

C180. Literature and Scandinavian Society. Knowledge of one Scandinavian language may be required. Discussion of selected aspects of Scandinavian society based on readings of the contemporary literature as well as other documentary 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. Prerequisite: reading knowledge of a Scandinavian language. Reading and analysis of selected texts by major 20th-century Swedish authors, including not only specific novelists, playwrights, and poets, but placing them within a social and historical milieu. Mr. Shideler

C182. The Theory of the Scandinavian Novel. Prerequisite for Scandinavian majors: course 30 or equivalent; for nonmajors: knowledge of a Scandinavian language is not required. The predominant structures of the novel, the Scandinavian novel in particular, starting with its beginnings, concentrating on the rise of the novel in the 19th century, and following the novel's evolution in the 20th century. Emphasis on the works of such writers as Kierkegaard, Andersen, Almquist, Jacobsen, Hamsun, and Hansen. May be concurrently scheduled with course C264.
Mr. Massengale, Ms. Norseng, Mr. Shideler

183. The Scandinavian Ballads. Lecture, three hours. Prerequisite: reading knowledge of a Scandinavian language. A 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. Conducted in English; knowledge of a Scandinavian language is not required. Study of the works of Hans Christian Andersen, the Danish novelist, dramatist, and writer of tales, including a 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

190. Honors Course in Scandinavian. Prerequisites: senior standing with a minimum 3.0 GPA in the major, consent of the 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). 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 a two-letter code using initials of sponsoring instructor — see section for code). A course of independent study 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. Prerequisites: advanced knowledge of Norwegian, consent of instructor. Intensive study of the works of Henrik Ibsen. May be concurrently scheduled with course C144.
Ms. Norseng

C252. August Strindberg. Prerequisites: advanced knowledge of Swedish, consent of instructor. Intensive study of the works of August Strindberg. May be concurrently scheduled with course C145.
Mr. Massengale, Mr. Shideler

C253. Søren Kierkegaard. Prerequisites: advanced knowledge of Danish, consent of instructor. Intensive study of the works of Søren Kierkegaard. May be concurrently scheduled with course C146.
Mr. Massengale

C254. Knut Hamsun. Prerequisites: advanced knowledge of Norwegian, consent of instructor. Intensive study of the works of Knut Hamsun. May be concurrently scheduled with course C147.
Ms. Norseng

C263. Seminar in 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 other documentary 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. The Theory of the Scandinavian Novel. Prerequisites: advanced knowledge of a Scandinavian language, consent of instructor. The predominant structures of the novel, the Scandinavian novel in particular, starting with its beginnings, concentrating on the rise of the novel in the 19th century, and following the novel's evolution in the 20th century. Emphasis on the works of such writers as Kierkegaard, Andersen, Almquist, Jacobsen, Hamsun, and Hansen. May be concurrently scheduled with course C182.
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. A teaching apprenticeship under the 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. To be arranged with faculty member who will direct the study or research. Twelve units may be applied toward the total course requirement, but only four units may be applied toward the 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 the 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, (213) 825-4601

Professors

Edward A. Alpers, Ph.D.
Joyce Appleby, Ph.D.
Kendall E. Bailes, Ph.D. *(U.C. Irvine)*
Amin Banani, Ph.D.
Robert L. Benson, Ph.D.
Rees W. Bolle, Ph.D.
Robert P. Brenner, Ph.D.
Giorgio Buccellati, Ph.D.
E. Bradford Burns, Ph.D.
Robert I. Burns, S.J., Ph.D.
Robert N. Burr, Ph.D.
Mortimer H. Chambers, Jr., Ph.D.
Claus-Peter Clasen, Ph.D.
Stanley Coben, Ph.D.
Robert Dallek, Ph.D.
Christopher Ehret, Ph.D.
Amos Funkenstein, Ph.D.
Frank O. Gatell, Ph.D.
Juan Gómez-Quiñones, Ph.D.
Thomas S. Hines, Ph.D.
Richard Hovannisian, Ph.D.
Daniel W. Howe, Ph.D., *Chair*
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.
Lauro R. Martines, Ph.D.
Ronald J. Mellor, Ph.D.
Eric H. Monkkonen, Ph.D.
Gary B. Nash, Ph.D.
Fred G. Notehelfer, Ph.D.
Boniface I. Obichere, D.Phil.
Merrick Posnansky, Ph.D.
Peter H. Reill, Ph.D.
Hans J. Rogger, Ph.D.
Richard H. Rouse, Ph.D.
David W. Sabean, Ph.D.
Damodar R. SarDesai, Ph.D.
Alexander P. Saxton, Ph.D.
Stanford J. Shaw, Ph.D.
Kathryn Kish Sklar, Ph.D.
Geoffrey W. Symcox, Ph.D.
Speros Vryonis, Jr., Ph.D.
Eugen Weber, M.Litt. *(Professor of Modern European History)*
Richard Weiss, Ph.D.
Robert S. Westman, Ph.D.
James W. Wilkie, Ph.D.
Robert Wohl, Ph.D.
Stanley A. Wolpert, Ph.D.

Emeritus Professors

Milton Anastos, Ph.D.
Truesdell S. Brown, Ph.D.
John G. Burke, Ph.D.
John W. Caughey, Ph.D.
Raymond H. Fisher, Ph.D.
Jere C. King, Ph.D.
Gerhart B. Ladner, Ph.D.
Andrew Lossky, Ph.D.
Lynn White, jr., Ph.D.
Robert A. Wilson, Ph.D.

Associate Professors

Edward G. Berenson, Ph.D.
Robert G. Frank, Ph.D.
Robert A. Hill, M.Sc.
Michael G. Morony, Ph.D.
M. Norton Wise, Ph.D.
Mary A. Yeager, Ph.D.

Assistant Professors

Ruth Bloch, Ph.D.
Margaret W. Creel, Ph.D.
Melissa L. Meyer, Ph.D.
Debora L. Silverman, Ph.D.
Albion M. Urdank, Ph.D.
Scott L. Waugh, Ph.D.

Lecturers

Ludwig Lauerhass, Ph.D.
Albert Hoxie, M.A., *Emeritus*

Adjunct Associate Professor

S. Scott Bartchy, 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 Teaching Credential may not choose science and technology to fulfill their non-Western requirement.

(4) History 99 (for freshmen and sophomores), 101 (for juniors and seniors), or 100.

(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 will 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 will still be 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; 9A-9B-9C; 9D plus one suitable upper division course; 10A-10B. 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-quarter course from the History 6A-6B-6C sequence may be applied toward this requirement, provided the same quarter course is not used to satisfy any other requirement of the major.

By petition, you may replace up to two social science courses with courses in humanities, fine arts, or natural sciences relevant to your program in history. Courses in communication studies do not fulfill this requirement.

Only two courses offered outside the History Department may be applied as major courses without petition: Anatomy (Medical History) 107A-107B.

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 10 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 the Spring Quarter of the junior year; honors students then take courses 199HB and 199HC in the Fall and Winter Quarters of their senior year under the guidance of the sponsoring professor. The Justin Turner Prize is awarded for the outstanding honors thesis.

Teaching Credential in History

If, based on your history major program, you would like a waiver of the national teacher examination for the single subject credential in history, you must complete (1) History 7A-7B or two quarters of courses 6A-6B-6C, (2) courses 1A-1B-1C, (3) course 163, and (4) two upper division courses in modern European history from the 125A-125F or 126A-126E sequences. You may not select history of science as a non-Western field.

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 scores of the Aptitude 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 scores, 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. Applications should be submitted before December 30; notification will be made on or before May 1. Except for extraordinary cases, students are expected to begin their graduate work in the Fall Quarter.

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 the 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, Department of History, 6265 Bunche Hall, UCLA, Los Angeles, CA 90024.

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) United States; (10) history of science; (11) special fields (students in the history of religions, Russian history, and modern Jewish history will normally be 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 GSFLT is required. Students of United States, 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 these three languages. 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 United States history, a minimum of seven of the nine courses must be at the 200 level, including at least one two-quarter seminar and History 245. Students in European history must include course 225, and 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. Students in the United States field must submit the paper from the two-quarter research seminar in United States history.

Field examiners administer the M.A. comprehensive examinations in November, March, and May of each academic year. The committee will recommend 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 will reevaluate your progress after an additional three quarters 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); England, 1485-1763; England since 1763; the British Empire; the Near East, 500-1500; the Near East since 1500; ancient Near East; 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; United States: (1) mastery of the general field of United States 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 United States history, and only two fields in United States 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, 1986-87: 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-quarter 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 requirement 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 of United States history should complete course 245. Students of European history must complete course 225, and students of African history must complete course 275 unless exempted 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 quarter 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 will be 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. A 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 to acquaint them, through reading and critical discussion, with representative contemporary documents and writings of enduring interest.

1AH-1BH-1CH. Introduction to Western Civilization (Honors). Lecture, two hours; discussion, two hours. A 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 to acquaint them, through reading and critical discussion, with representative contemporary documents and writings of enduring interest.
Mr. Berenson, Mr. Sabean

2. History of Technology from Antiquity to the 20th Century. Lecture, three hours. Designed for students in the natural sciences, social sciences, and fine arts. A survey of the 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. Mr. Burke

3A-3B-3C. Introduction to the History of Science. Lecture, three hours; discussion, two hours. History majors may not apply these courses on the science general education requirements:

3A. The Scientific Revolution. A survey of the beginnings of the physical sciences involving the transformation from Aristotelian to Newtonian cosmology, the mechanization of the natural world, the rise of experimental science, and the origin of scientific societies.
Mr. Westman, Mr. Wise

3B. The Physical Sciences since the Enlightenment. A broad survey of the 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.
Mr. Wise

3C. The Biological Sciences, 1800-1955. A survey of the development of the biological sciences from the period of Bichat and Müller to the discovery of the double helix. Mr. Frank

3D. Themes in the 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 the development of modern medicine: the nature of diagnosis, the emergence of surgery, epidemics, the conception and treatment of insanity, and the use of medical technology.
Mr. Frank

4. Introduction to the History of Religions. Lecture, three hours; discussion, one hour. A discussion of the various systems, ideas, and fashions of thought that have dominated Western approaches to the religions of the world since antiquity. Survey of the development from classical Greek and early Christian theories to modern history with its discoveries of the religions of India, China, the ancient Near East, etc., and the problem of the encounter of various religions in the 19th and 20th centuries. Mr. Bolle

5A-5B. Survey of British History. Lecture, three hours; discussion, one hour. Designed for students wanting a general orientation to British history and those in English literature and prelaw. A survey of the history of England and (after the union between England and Scotland) Great Britain. **5A.** The Middle Ages to the Glorious Revolution in 1688; **5B.** 1688 to the 20th Century. Mr. Urdank, Mr. Waugh

6A-6B-6C. History of the American Peoples. Lecture, two hours; discussion, two hours. A survey of the American peoples from the advent of aboriginal society to the present, emphasizing racial and ethnic interaction, industrialization, urbanization, and cultural change. Ms. Appleby, Mr. Nash, Mr. Saxton

6BH. History of the American Peoples (Honors). Lecture, two hours; discussion, two hours. A survey of the American peoples from the advent of aboriginal society to the present, emphasizing racial and ethnic interaction, industrialization, urbanization, and cultural change. Mr. Monkkonen

7A-7B. Survey of the Political History of the U.S. Lecture, two hours; discussion, two hours. This sequence (or two quarters of course 6) is strongly recommended for history majors planning to take more advanced courses in U.S. history. Designed for students in the social sciences and other departments who desire a thorough grounding in American political culture. A survey of the history of the U.S. from the Revolutionary era to the present. Emphasis on political developments and the social, cultural, and economic bases of American politics.
Ms. Appleby, Mr. Gatell, Mr. Howe, Mr. Saxton

8A. Latin America: Reform and Revolution. Lecture, three hours; discussion, one hour. A 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. Movies and discussions complement the topical lectures. Mr. E.B. Burns and the Staff

8B. Latin American Social History. Lecture, three hours; discussion, one hour. Course 8A is not prerequisite to 8B. The historical and contemporary perspective of the 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 and the Staff

8C. Central America: The Struggle for Change. Lecture, three hours; discussion, one hour. The economic growth and accompanying dependency of Central America from independence until the Great Depression and the turbulent consequences of that combination from 1930 to the present. Attention to the common characteristics of the five nations, as well as their individuality. Mr. E.B. Burns

9A-9D. Introduction to Asian Civilizations:

9A. History of India. Lecture, three hours; discussion, one hour. An introductory survey for beginning students of the major cultural, social, and political ideas, traditions, and institutions of Indic civilization.
Mr. Wolpert

9B. History of China. Lecture, three hours; discussion, one hour. Survey of the history of China: the evolution of characteristic Chinese institutions and modes of thought from antiquity to 1950; the problems of political change; China's response to the Western impact in modern times.

9C. History of Japan. Lecture, three hours; discussion, one hour. A survey of Japanese history from earliest recorded time to the present, with emphasis on the development of Japan as a cultural daughter of China. Attention to the manner in which Chinese culture was Japanized and the aspects of Japanese civilization which became unique. The creation of the modern state in the last century and the impact of Western civilization on Japanese culture.
Mr. Notehelfer

9D. History of the Near and Middle East. Lecture, three hours. An introduction to the history of the Muslim world from the advent of Islam to the present day.
Ms. Marsot

10A-10B. Introduction to the Civilizations of Africa. Lecture, three hours; discussion, one hour. Intended for students with a 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.

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 the discovery of America). Mr. Dyck

97H. Three Trials. (Formerly numbered 98H.) Discussion, three hours. Prerequisite: consent of instructor. Limited to 20 students. An 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, the class constitutes itself as a court (prosecution, defense, jury) and reviews the verdict of the original trial.
Mr. Benson

99. Introduction to Historical Practice. Seminar, three hours. Limited to freshmen and sophomores. Discussion classes of not 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.

99H. Introduction to Historical Practice (Honors). Seminar, three hours. Limited to freshmen and sophomores. Discussion classes of not 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.
Mr. E.B. Burns, Mr. Posnansky

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.

100. History and Historians. Lecture, three hours. A study of historiography, including the intellectual processes by which history is written, the results of these processes, and the sources and development of history. Attention also to representative historians.
Mr. Reill

101. Introduction to Historical Practice. Seminar, three hours. Limited to juniors and seniors. Discussion classes of not 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 the history honors program. Discussion classes of not more than 15 students meeting with a faculty member. Emphasis on problems in the philosophy of history, historiography, and historical method.

102. Explorations in Psychoanalysis and History. Lecture, three hours. Limited to 35 students. The 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.) A survey of the aims and methods of historical archaeology as practiced on both sides of the Atlantic, with case studies drawn 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. The political and cultural institutions of ancient Egypt and the 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. Callender (alternate years)

105. History of Ancient Mesopotamia and Syria. Lecture, three hours. The 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 the rise of Islam, the creation of the Islamic Empire, and its development. The 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 Quran; 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. From 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. Mr. Banani

110B. Iran from 1800 to the Present. Ms. Keddie

111A-111B. History of the Turks. Lecture, three hours. A survey of the 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. The 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

112A-112B-112C. Armenian History. Lecture, three hours:

112A. Armenia in Ancient and Medieval Times, 2nd Millenium 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. The uses and techniques of Armenian oral history; the preinterview, the 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. A survey of the political, economic, social, and cultural history of the Caucasus region since 1801. The 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 the Ancient Mediterranean World. Lecture, three hours:

115A. A survey of the history of the ancient East from earliest times to the foundation of the Persian Empire. Mr. Mellor

115B. The history and institutions of the Greeks from their arrival to the death of Alexander. Mr. Chambers, Mr. Mellor

115C. The history and institutions of Rome from the founding of the city to the death of Constantine. Mr. Chambers, Mr. Mellor

116A-116B. History of Ancient Greece. Lecture, three hours:

116A. The Rise of the Greek City-State. Emphasis on the archaic period and the early classical age through the Persian Wars. Mr. Chambers

116B. The Classical Period. The clash between Athens and Sparta, the consequent rise of Macedonia, and the aftermath of Alexander the Great. Mr. Chambers

117A-117B. History of Rome. Lecture, three hours:

117A. To the Death of Caesar. Emphasis on the development of imperialism and on the constitutional and social struggles of the late republic. Mr. Mellor

117B. From the Death of Caesar to the Time of Constantine. The early empire treated in more detail supplemented by a survey of the social and economic changes in the 3rd century. Mr. Mellor

118. Introduction to Roman Law. Lecture, three hours. Survey of the public (constitutional), criminal, and private law of the Romans. Topics include the social context of Roman law, the historical evolution of Roman law, mechanisms and procedures by which the law was administered, and the 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 the Roman Empire and the Germanic kingdoms; governance and institutions of the Church; relations between Church and monarchy; the high tide of papalism; crises of authority on the eve of the Reformation. Mr. Benson

120. The Christian Religion, 100-1350. Lecture, three hours. The religious experience of Christians — conversion, doctrine, belief, heresy, spirituality, worship, liturgy, and art. The 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. Recommended prerequisite: Western civilization. A basic introduction to Western Europe from Latin antiquity to the age of discovery, with emphasis on the medieval use of Greco-Roman antiquity, the history of the manuscript book, and the growth of literacy:

121A. 400 to 1000. Mr. Rouse

121B. 1000 to 1500. Mr. Rouse

121C. Medieval Civilization: The Mediterranean Heartlands. Lecture, three hours. A survey of Western Mediterranean Europe, social-economic-cultural within a political framework, including its relation with other cultures. Mr. R.I. Burns

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. Mr. R.I. Burns

M122A-M122B. Byzantine Civilization:

M122A. (Same as Classics M170A.) Emphasis on Byzantine theology. Mr. Dyck

M122B. (Same as Classics M170B.) Literature, relations with Rome, and the Renaissance. Mr. Dyck

123A-123B. Byzantine History. Lecture, three hours. The political, socioeconomic, religious, and cultural continuity in the millennial history of Byzantium. The reforms of Diocletian. Byzantium's relations with Latin Europe, Slavs, Sassanids, Arabs, and Turks. Mr. Vryonis

125A-125F. History of Modern Europe. (Formerly numbered 125A-125E.) Lecture, three hours:

125A. The Renaissance: Power and Culture in the Italian City-States. Mr. Martines

125B. The Reformation: Church and Religion in 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. The effects of the Reformation on society. Mr. Clasen

125C. Absolutism and Enlightenment: Europe under the Old Regime. State, society, and culture in Europe from the mid-17th century until the eve of the French Revolution. Mr. Sabean

125D. Europe, 1789-1900. The French Revolution and Napoleon. The Industrial Revolution. The uprisings of 1848. The unification of Germany and Italy. Industrialization and imperialism. The rise of socialism. Population growth and changes in social structure. Mr. Reill, Mr. Silverman

125E. Europe in the 20th Century. International rivalries. The First World War and its impact on thought and society. Fascism and Communism. World War II. European recovery and integration. Mr. Loewenberg, Mr. Wohl

125F. Europe: 1945 to the Present. The legacy of World War II. Reconstruction and recovery in Western Europe. The East European revolution. The Jugoslav exception. Scandinavian socialism. The German problem. European integration and the Common Market. Gaullism. The events of 1968 and their aftermath. Eurocommunism and the resurgence of the Left in Western Europe. Poland and the limitations of change in the Soviet Bloc. 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; the art, thought, and manners of the time in a historical context:

126A. 16th Century. Mr. Clasen, Mr. Westman

126B. 17th Century. Mr. Funkenstein

126C. 18th Century. Mr. Reill

126D. 19th Century. Mr. Loewenberg, 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 the growth of the state. Mr. Symcox

127B. 1815 to 1945. The balance of power; the growth of the nation state; imperial and colonial rivalries; the two World Wars. Mr. Symcox

128A-128D. History of Modern France. Lecture, three hours:

128A. France, 1450-1620. Institutions of the French monarchy and territorial formation of France in the 15th century. French humanism. Catholic and Protestant Reformations in 16th-century France. French wars of religion.

128B. France, 1620-1770. Political and intellectual history of France, principally in the 17th century, with special emphasis on the role of Richelieu and Louis XIV.

128C. A Time of Revolutions, 1770-1871. Social and political history of three kingdoms, three republics, and two empires. Mr. Weber

128D. The Making of a Modern France, 1871 to the Present. From oligarchy to democratic bureaucracy in two wars and three republics. Mr. Weber

129A-129B-129C. History of Modern Germany and Austria. Lecture, three hours:

129A. 1500 to 1648. The political structure of empire and territories, the economy, social classes, daily life, book publishing and universities, the Reformation and Counter Reformation, the Thirty Years' War, military entrepreneurship, population losses, the Peace of Westfalia. Mr. Clasen

129B. 1648 to 1848. Survey of social, economic, cultural, and political history, including the rise of absolutist and bureaucratic government, Enlightenment and reform, the emergence of Austro-Prussian dualism, the transformation of the German economy, the impact of the French Revolution and the German reform movement, Restoration and Metternichian reaction, the rise of Romanticism, and the causes and failure of the Revolutions of 1848. Mr. Reill

129C. 1848 to Present. Revolutions of 1848, Prussian constitutional struggle, German unification, the Bismarckian and Wilhelmine eras in Germany and the Ausgleich in Austria, liberalism, industrialism, anti-Semitism, social democracy, the World Wars, revolutions, republics, Fascism and Nazism, occupation, and the Austrian, German Federal, and German Democratic Republics. Mr. Loewenberg

130A-130B-130C. Europe in the Age of Revolution, 1750-1850. Lecture, three hours:

130A. The End of the Old Regime. Economic development from ca. 1750. The agrarian revolution. The Enlightenment: social criticism and political economy. The intellectual origins of the French Revolution. The new sensibility: rococo, neoclassicism, proto-Romanticism. The first signs of discontent: Geneva, Corsica, Poland. The American war of independence and its effect on the European state-system; its intellectual effects. Mr. Symcox

130B. The 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. The impact of war on revolutionary France after 1792 and the spread of the revolution by military force. Jacobism 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 the 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. The continuing revolutionary tradition: 1821, 1830, 1848. Romanticism at its apogee. Conclusion: how the 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; the unification of the Russian state by Muscovy, Autocracy and its Servitors; serfdom. Mr. Krekić

131B. Imperial Russia from Peter the Great to Nicholas II. Westernization of state and society; centralization at home and expansion abroad; the peasant problem; beginnings of industrialization; movements of political and social protest; the non-Russian peoples; political reforms and social changes; the Revolution of 1905; Russia in World War I; the fall of the old regime. Mr. Rogger

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. Rogger

131D. Intellectual History. Social thought and movements in modern Russia, late 18th to early 20th century. Mr. Rogger

132A-132B. History of Italy. Lecture, three hours:

132A. 1530 to 1815. Survey of social, economic, political, and cultural history covering the eclipse of the Italian economy and the city-state, the rise of absolutist governments. Enlightenment reforms and the origins of the Risorgimento. Mr. Symcox

132B. 1861 to the Present. Political, economic, social, diplomatic, and ideological developments. Mr. Wohl

133A-133B. The Social History of Spain and Portugal. Lecture, three hours:

133A. The Age of Silver in Spain and Portugal, 1479-1789. The development of popular history in the Iberian Peninsula. Emphasis on peasants and urban history, gold routes, slave trade, history of women, and the 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. A political, economic, and cultural survey of the independent Balkan states in the Middle Ages. Mr. Krekić

134B. Southeastern Europe, 1500-1918. Lecture, three hours. The Balkans under Ottoman rule, movements of national liberation, and the formation of nation states. Mr. Krekić

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. 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. The 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.

136G. Psychohistory. Mr. Loewenberg, Mr. Wohl

136I. Special Topics.

136J-136K-136L. History of Women in Europe. Lecture, three hours. European women through the ages, prehistory to the present, with emphasis on the role of women in society, the family, religion, the workplace, and politics. **136J.** Ancient and Medieval; **136K.** 1348 to 1814; **136L.** 1814 to the Present. Ms. Norberg

137A-137B. Survey of English History. Lecture, three hours. A basic survey of English history from the Wars of the Roses to the present, dealing with changes in society, economics, and ideas from an agrarian, medieval monarchy to an industrial national and social democracy:

137A. 1450 to 1660.

137B. 1660 to the Present.

138A-138B. Medieval England. Lecture, three hours:

138A. Anglo-Saxon England and the Norman Conquest, 900-1215. The nature of the society that emerged from the Viking invasions; the conquest and colonization by the Normans; the principles of lordship by which they ruled, to the Magna Carta (1215). Mr. Rouse

138B. England in the High Middle Ages: Magna Carta to 1400. Emphasis on the social and economic developments that underlay constitutional change, peasant revolt, the Black Death, and the Hundred Years' War. Mr. Rouse

139. Renaissance England. Lecture, three hours. Culture and society. Emphasis on literary culture (Elizabethans, Jacobeans, Carolines), with readings and lectures on different aspects of political and economic life as required for a serious understanding of the culture. Mr. Martines

140A-140B. Early Modern England, 1450-1700. Lecture, three hours:

140A. The Development of Capitalism in England, Especially the Countryside, 1450-1700. The transformation of class relations; the emergence of political conflicts; state centralization and military aristocracy, Crown versus Parliament, the English Revolution. Mr. Brenner

140B. Analysis of the Transformation of Religious and Political Ideology in Relationship to Socioeconomic and Political Conflicts. Recommended prerequisite: course 140A. The English Reformation and the development of the State; Protestantism and political opposition; religious radicalism and the English Revolution. Mr. Brenner

141A-141B. Modern England. Lecture, three hours. Analysis of the English economy, society, and polity since 1688, focusing on the dynamics of both stability and change:

141A. 18th and 19th Centuries, 1688-1832. Mr. Urdank

141B. 19th and 20th Centuries, 1832 to World War II and its Aftermath. Mr. Urdank

142A-142B. The British Empire since 1783. Lecture, three hours. The political and economic development of the British Empire, including the evolution of colonial nationalism, the development of the commonwealth idea, and changes in British colonial policy. Mr. SarDesai

143. History of Canada. Lecture, three hours. A survey of the growth of Canada into a modern state from its beginnings under the French and British colonial empires.

144. History of Australasia. Lecture, three hours. The history of Australia and New Zealand from the European settlement, with emphasis on the interrelationships between the settlers and the aborigines; comparisons and contrasts between the Australian and New Zealand experience.

145A. Colonial America, 1600-1763. Lecture, three hours. An examination of the molding of an American society in English North America from 1600 to 1763. Emphasis on the 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. An inquiry into the origins and consequences of the American Revolution, the nature of the revolutionary process, the creation of a constitutional national government, and the development of a capitalist economy. Ms. Appleby, Ms. Bloch, Mr. Nash

146A-146B. The United States, 1800-1850. Lecture, three hours:

146A. Jeffersonian America. Jeffersonian Republican ascendancy and the Era of Good Feelings, 1800-1828; disintegration of the Federalist opposition; the testing of American nationality in the second war with Britain; beginnings of the transportation and industrial revolutions; restructuring of politics in an increasingly egalitarian age. Mr. Gatell, Mr. Howe

146B. Jacksonian America and Beyond. The "Jacksonian Revolution" and its aftermath, 1829-1850; the 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. Mr. Gatell, Mr. Howe

147A. The United States: Civil War and Reconstruction. Lecture, three hours. Topics include the rise of sectionalism, the antislavery crusade; the formation of the Confederate States; the war years; political and social reconstruction. Ms. Creel

147B. The United States, 1875-1900. Lecture, three hours. American political, social, and institutional history in a period of great change. Emphasis on the altering concepts of the role of government and the responses to that alteration. Mr. Saxton

148A-148B. The United States: The 20th Century. Lecture, three hours. The political, economic, intellectual, and cultural aspects of American democracy in the 20th century. Mr. Coben, Mr. Weiss

148C. The United States since 1945. Lecture, three hours. A history of the political, social, and diplomatic developments that have shaped the United States since 1945. Mr. Dallek, Mr. Weiss

149A-149B. American Economic History. Lecture, three hours:

149A. 1790 to 1910. The 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 the 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. The 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 the world economy, 1910 to the present. Ms. Yeager

150A-150B. Intellectual History of the United States. Lecture, three hours. The principal ideas about humanity and God, nature and society, which have been at work in American history. The sources of these ideas, their connections with one another, their relationship to American life, and their expression in great documents of American thought. Mr. Howe

150C. History of Religion in the United States. Lecture, three hours. Consideration of the religious dimension of people's experience in the United States. 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. Mr. Howe

151A-151B. Constitutional History of the United States. Lecture, three hours:

151A. The Origins and Development of Constitutionalism in the United States. Particular emphasis on the framing of the Federal Constitution in 1787 and its subsequent interpretation. Topics include judicial review, significance of the Marshall Court, and the effects of slavery and the Civil War on the Constitution. Mr. Gatell

151B. Constitutionalism since the Civil War. Particular emphasis on the development of the Supreme Court, the 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. The establishment of an independent foreign policy, the territorial expansion of the United States, and the emergence of a world power. Mr. Dallek

152B. The Role of the United States in the 20th-Century World. Mr. Dallek

153. The United States and the Philippines. Lecture, three hours. Recommended: knowledge of Southeast Asian or United States history, or both. An examination of the interrelationships of immigration and of colonialism and independence between the United States and the Philippines, focused mainly within the time period of 1898 to the present. Mr. Saxton

154A-154B. United States Urban History. Lecture, three hours:

154A. The Preindustrial and Early Industrial City. Emphasis on the social, spatial, and economic development of U.S. cities. Special attention to the social consequences of the preindustrial and early industrial economic relationships. Mr. Monkkonen

154B. The Industrial and Postindustrial City. Course 154A is not prerequisite to 154B. Emphasis on the mature urban network, with concentration on social, spatial, and economic interaction. The issues of mass society, neighborhood, crime, poverty, ethnicity, and racial discrimination. 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 the allied arts, with emphasis on the development of an architectural consciousness in America, ways in which the built environment has affected its users and observers, and the 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 and European Working Class Movements. Lecture, three hours. Major episodes in the institutional, economic, and cultural development of the American working class from Colonial times to the present, emphasizing both organized and unorganized labor in a comparative context. A.F. of L., rise of industrial unionism, and labor politics. Mr. Laslett

156A-156B. American Social History, 1750-1960. Lecture, three hours. A 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. Mr. Coben

156C-156D-156E. Social History of American Women. Lecture, three hours. A survey of the 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. Ms. Sklar

156D. Victorian and Industrial, 1800-1920. Ms. Sklar

156E. 20th Century, 1900-1975. Ms. Sklar

157A-157B-157C. North American Indian History. Lecture, three hours. History of Native Americans from contact to the present, with emphasis on the ethnohistorical dimensions of culture change, Indian political processes, and the continuity of Native American cultures. Focus on selected Indian peoples in each period:

157A. Contact to 1760. Ms. Meyer

157B. 1760 to 1860. Ms. Meyer

157C. 1860 to the Present. Ms. Meyer

M158A. Comparative Slavery Systems. (Formerly numbered 158A.) (Same as Afro-American Studies M158A.) Lecture, three hours. An examination of the slavery experience in various New World slave societies, with emphasis on outlining the similarities and the 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. (Formerly numbered 158B-158C.) (Same as Afro-American Studies M158B-M158C.) Lecture, three hours. A survey of the Afro-American experience, with emphasis on the three great transitions of Afro-American life: the transition from Africa to New World slavery, the transition from slavery to freedom, the transition from rural to urban milieus. Ms. Creel, Mr. Hill

158D. Afro-American Urban History. Lecture, three hours. An examination of Afro-American urban life prior to 1945, with emphasis on the transformation from slavery to freedom and the shift from Southern to Northern areas. The forces which both propelled Afro-Americans to the cities and which also inhibited their adjustment to them.

158E. Afro-American Nationalism in the First Half of the 20th Century. Lecture, three hours. A critical examination of the Afro-American search in the 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. (Formerly numbered 159A.) (Same as Chicano Studies M159A.) Lecture, three hours. A survey lecture course on the 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 an integrated understanding of change over time in the Mexican community by inquiry into the 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 United States 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. (Formerly numbered 159B.) (Same as Chicano Studies M159B.) Lecture, three hours. A survey lecture course on the historical development of the Mexican (Chicano) community and people of Mexican descent in the United States through the 20th century, with special focus on labor and politics. Provides an integrated understanding of change over time in the Mexican community by inquiry into the 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 United States and Mexico. Lectures, special presentations, reading assignments, written examinations, library and/or field research, and submission of a paper. Mr. Gómez-Quiñones

160. The Immigrant in America. Lecture, three hours. A historical analysis of the social and economic causes and effects of immigration, particularly after the 1880s, emphasizing the problems of acculturation and adjustment. The restrictionists and the implications of immigration policy on U.S. foreign policy. Mr. Laslett

161. Asians in American History. Lecture, three hours. A study of the politically troubling question of entry into the United States of immigrants ineligible for citizenship and their citizen children in American history.

162. The American West. Lecture, three hours. A 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

163. History of California. Lecture, three hours. The economic, social, intellectual, and political development of California from the earliest times to the present. Mr. Hundley

165A-165B. Colonial Latin America. Lecture, three hours. Studies in the general development of Latin America prior to 1825, with emphasis on social history. Mr. Lockhart

165C. Indians of Colonial Mexico. Lecture, three hours. A survey of the social and cultural history of the Indians of Mexico, especially central Mexico, from the time of the European conquest until Mexican independence, emphasizing an internal view of Indian groups and patterns on the basis of records produced by the Indians themselves. Mr. Lockhart

166. Latin America in the 19th Century. Lecture, three hours. An intensive analysis of the economic, social, and political problems of the Latin American nations from their independence to around 1910. Mr. E.B. Burns, Mr. Burr

167A-167D. Latin America in the 20th Century. (Formerly numbered 167A-167B-167C.) 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: the struggle between centralized and decentralized government agencies (emphasized in course 167A), the 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. Mr. Wilkie

167B. Bolivia, Dominican Republic, Argentina, Paraguay, Venezuela. Mr. Wilkie

167C. Panama, Colombia, Ecuador, Honduras, El Salvador. Mr. Wilkie

167D. Brazil, Guatemala, Peru, Nicaragua. Mr. Wilkie

168. History of Latin American International Relations. Lecture, three hours. Emphasis on the developing interests of the Latin American nations in their relationship with one another and with other areas of the world, beginning with 19th-century independence. Mr. Burr

169. Latin American Elitelore. Lecture, three hours. Prerequisite: course 167A, 167B, 167C, or 171. Elitelore (defined as oral or noninstitutionalized knowledge involving the leaders' conceptual and perceptual life history views) in contrast to folklore (the followers' traditional or popular views). Elitelore genres include oral history, literature, and cinema. Mr. Wilkie

170A. Latin American Cultural History. (Formerly numbered 170.) Lecture, three hours. Intellectual, artistic, and folk expressions of the Latin American spirit and character examined in readings and lectures, with emphasis on the unique contribution of Latin Americans to develop self-interpretation. Music, films, and slides supplement discussions. Mr. E.B. Burns, Mr. Wilkie

170B. The 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. The Mexican Revolution since 1910. Lecture, three hours. Examination of the 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

173. Modern Brazil. Lecture, three hours. Selected topics in the 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 the lectures. Mr. E.B. Burns

174. Brazilian Intellectual History. Lecture, three hours. The general intellectual development of Brazil, with emphasis on those introspective movements in which the 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. A survey of the nondocumentary sources of early African history, with particular reference to technological, economic, and cultural developments from the origins of Man until the colonial period. Mr. Posnansky

175B. Africa and the Slave Trade. The social, economic, political, and cultural impact of the slave trade on African society, with emphasis on the Atlantic trade without neglecting those of the 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 the penetration of pre-capitalist social formations by capital, the emergence of classes, the nature of the colonial and postcolonial state, and the struggle for national liberation in a global context. Mr. Alpers, 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. An analysis of the 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, the arts, slavery, and the slave trade. The roles of economic forces and institutions in promoting or inhibiting economic change in West Africa; ethnic diversity and socio-political integration; colonial economic systems and the efforts at economic planning and development since the 1950s. Mr. Obichere

177. Ethiopia and the Horn of Africa. Lecture, three hours. Survey of the history of Ethiopia, Somalia, and Sudan. Mr. Alpers, Mr. Ehret

178A-178B. History of Eastern Africa. Lecture, three hours:

178A. The cultural diversity of Eastern African societies, the growth of more complex political systems, and the impact of international trade to the later 19th century. Mr. Alpers, Mr. Ehret, Mr. Posnansky

178B. The economic, social, and political history of Eastern Africa since the 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:

179A. History of Southern Africa from the Origins to 1870. The origins of the South African peoples and their interactions to 1870. Attention to social and economic as well as political aspects. Mr. Ehret

179B. History of Southern Africa since 1870. The interactions between the inhabitants of Southern Africa since 1870. Attention to social and economic as well as political aspects.

182A-182B-182C. History of China. Lecture, three hours:

182A. Origins to 900. Bronze Age and Iron Age China; the classical thinkers; the birth of the imperial state and the development of an aristocratic society.

182B. 900 to 1500. Prerequisite: course 9B or 182A or equivalent readings. The end of aristocratic rule; the mature imperial state and bureaucratic government; the foreign presence; trade, agriculture, and the growth of cities.

182C. 1500 to 1800. The background to modern China; landholding and agriculture; nascent capitalism; peasant movements; neo-Confucianism and the Manchu state.

183. Modern China, 1840-1920. Lecture, three hours. From the Opium War to the May Fourth Movement, imperialism, semi-colonial China, and popular movements; some attention to contrasts between established and revolutionary interpretations. Mr. Huang

184. The Chinese Revolution. Lecture, three hours. From the founding of the Chinese Communist Party to the present. Special emphasis on the evolution of Mao's thought, the history of the Communist movement, the conditions in the Chinese countryside, the revolutionary developments under the People's Republic. Mr. Huang

186. Diplomatic History of the Far East. Lecture, three hours. The role of the Far Eastern states in the international community, beginning with the establishment of the Treaty System in China and the opening of Japan to intercourse with the rest of the world in 1854.

187A-187B-187C. Japanese History. Lecture, three hours. The political, economic, and cultural development of Japan from prehistory to the present:

187A. Ancient: Prehistory to 1600. Mr. Notehelfer

187B. Early Modern: 1600 to 1868. Mr. Notehelfer

187C. Modern: 1868 to the Present. Mr. Notehelfer

188A. Early History of India. Lecture, three hours. Introduction to the civilization and institutions of India. A survey of the history and culture of the South Asian subcontinent from the earliest times to the founding of the Mughal Empire. Mr. Wolpert

188B. Recent History of India and Pakistan. Lecture, three hours. History of the South Asian subcontinent from the founding of the Mughal Empire through the eras of European expansion, British rule, and the nationalist movement to the present. Mr. Wolpert

190A-190B. History of Southeast Asia. Lecture, three hours:

190A. Early History of Southeast Asia. A political and cultural history of the peoples of Southeast Asia from the earliest times to about 1815. Mr. SarDesai

190B. Southeast Asia since 1815. History of modern Southeast Asia, with emphasis on expansion of European influence in the political and economic spheres, growth of nationalism, and the process of decolonization. Mr. SarDesai

M191A-M191B. Survey of Jewish History. (Same as Jewish Studies M191A-M191B.) Lecture, three hours. A survey of social, political, and religious developments:

M191A. From Biblical Times to the End of the Middle Ages. Mr. Funkenstein

M191B. From the End of the Middle Ages to the Present. Mr. Funkenstein

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 the history of Messianic Movements, the structure of the Jewish communities) through the ages. Mr. Funkenstein

191E-191F. The Third Reich and the Jews. Lecture, three hours:

191E. The history of modern anti-Semitic ideologies and movements. The rise of national socialism in Germany. Development and execution of Nazi anti-Jewish policy to the outbreak of World War II.

191F. The Second World War. Implementation of Nazi plans for the extermination of Jews in Nazi-dominated Europe. Life in the Nazi-imposed ghettos. Forms of Jewish resistance. The fate of the Jewish populations in the occupied territories.

192A-192B. Jewish Intellectual History. Lecture, three hours. The development of Jewish self-understanding in relation to the intellectual climate of the environment as expressed in the halacha, in philosophy, and in cabbalism. **192A.** The Medieval Period; **192B.** The Modern Period. Mr. Funkenstein

193A. History of Religions: Myth. Lecture, three hours. The nature and function of myth in the history of religion and culture. Examples selected from nonliterate as well as from other Asian and European traditions. Mr. Bolle

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. See *Schedule of Classes* for specifics. May be taken independently for credit. Mr. Bolle

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; the religions of Java and Bali; the nonliterate traditions of India and Southeast Asia. See *Schedule of Classes* for specifics. May be taken independently for credit. Mr. Bolle

193D. Religions of the Ancient Near East. Lecture, three hours. The 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 the History of Religions. Lecture, three hours. Topics are announced in the *Schedule of Classes* and include ancient Germanic cults; Renaissance mysticism; mystics of the low countries; goddesses; religion in a secular age. Mr. Bolle

194A. History of the Early Christians. (Formerly numbered 198X.) Lecture, three hours. The Christian movement from its origins to ca. 160 C.E., stressing its continuity/discontinuity with Judaism, the various responses to Jesus of Nazareth, the writings produced during this period, the movement's encounters with its religious, social, and political world, and methods of research. Mr. Bartchy

194B. The Religious Environment of the Early Christians. (Formerly numbered 198G.) Lecture, three hours. The rich variety in religious practice and thought in the Mediterranean world of the 1st century C.E. as in the 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. Bartchy

195A-195D. History of Science. Lecture, three hours. Science and scientific thought in relationship to society:

195A. Medieval and Renaissance Science. Prerequisite: course 3A or consent of instructor. 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 the occult sciences. Mr. Funkenstein, Mr. Westman

195B. Perspectives on the Early Modern Physical Sciences. Prerequisite: course 3A or consent of instructor. A detailed view of selected topics in the development of the physical sciences from 1600 to 1750, with focus on explanations of historical change in science. Normally, four topics are studied in order to cover a broad range of scientific, philosophical, and social issues.

195C. The Classical Physical Sciences: 18th and 19th Centuries. Prerequisite: course 3B or consent of instructor. The development of classical physical science from Newton's mechanics to Maxwell's electromagnetic theory, with special attention to demands of the Enlightenment, the Industrial Revolution, and 19th-century professionalized science. Mr. Wise

195D. Physical Sciences in the 20th Century. Prerequisite: course 3B or consent of instructor. A nonmathematical but nevertheless detailed look at selected physical sciences and scientific issues (e.g., the birth of quantum mechanics and relativity; stellar evolution and cosmological theories; nuclear physics, nuclear weapons, and nuclear policy; and the changing character of industrialized science). Mr. Wise

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 quarter are available in the undergraduate counselor's office (6248 Bunche Hall). May be repeated once for credit. When concurrently scheduled with courses 201A-201U or 203, undergraduates must obtain instructor's consent to enroll.

199. Special Studies in History. An intensive directed research program. Eight units may be applied toward the major requirements.

199HA-199HB-199HC. Directed Studies for Honors. Limited to history honors majors. In Progress grading:

199HA. Seminar meetings to help students define their research topics and explore problems of historical research. Extensive reading and research in the field of the proposed honors thesis.

199HB. Continued reading and research culminating in a draft of the honors thesis.

199HC. Revisions of the draft and preparation of polished honors thesis; oral examination on thesis.

199I. Independent Study for Internships. Prerequisite: maintenance of a 3.0 grade-point average in the major. An independent study course to be supervised jointly by the Field Studies Office and the faculty adviser. Further supervision to be provided by the business for which the student is doing the internship. May not be used to satisfy the requirement for course 197 or 199. Normally, only four units of internship with the History Department are allowed. P/NP grading.

Graduate Courses

Admission to all graduate courses is subject to the instructor's consent 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. **200A.** Ancient Greece; **200B.** Ancient Rome; **200C.** Medieval; **200D.** Early Modern Europe; **200E.** Modern Europe; **200F.** Russia/Eastern Europe; **200G.** Britain; **200H.** United States; **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. May be repeated for credit.

M200V. Advanced Historiography: Afro-American. (Same as Afro-American Studies M200A.) Seminar, three hours. May be repeated for credit. Ms. Creel

M200W. Advanced Historiography: American Indian Peoples. (Same as American Indian Studies M200A.) Seminar, three hours.

200X. Advanced Historiography: Oral History. Seminar, three hours. An introduction to the practice, method, and theory of oral history.

201A-201U. Topics in History. Seminar, three hours. Topic titles are the same as for courses 200A-200U. A graduate course involving reading, lecturing, and discussion of selected topics. Does not fulfill the seminar requirements for the Ph.D. degree. May be repeated for credit. When concurrently scheduled with course 197, undergraduates must obtain instructor's consent to enroll.

202A-202B. Seminar in Comparative Modern Economic History. Discussion, three hours. Prerequisite: graduate standing. The 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

203. Topics in Comparative History. Seminar, three hours. Possible topics include study of European expansion and its impact on non-European societies, the American Revolution in an international perspective, etc.

204A-204B. Seminar in Near and Middle Eastern History. Seminar, three hours. Methodology, socioeconomic and political change in the Arab world. Ms. Marsot

205A-205B. Seminar in Medieval Middle Eastern History. Seminar, three hours. Mr. Morony

206A-206B. Seminar in the Social History of the Middle East. Seminar, three hours. The interrelationship of city, tribe, and village in the Middle East; the role of such definable social groups as women, religious classes, middle classes, landlords, tribesmen, and peasants; social change. Ms. Keddie

M207. Seminar in Ancient Mesopotamia. (Same as Ancient Near East M250.) Seminar, three hours. Selected topics on the political, social, and intellectual history of ancient Mesopotamia. May be repeated for credit. Mr. Buccellati

209A-209B. Seminar in Ottoman and Modern Turkish History. Seminar, three hours. Mr. Shaw

211A-211B. Seminar in Armenian History. Seminar, three hours. Mr. Hovannisian

C212. Methods in Armenian Oral History. Seminar, three hours. Prerequisite: proficiency in the Armenian language. Lectures and laboratory in the methods of taking, processing, and utilizing depositions and other oral sources for Armenian history, including a project assignment in the field. May be concurrently scheduled with course C112D. Mr. Hovannisian

215A-215B. Seminar in Ancient History. Seminar, three hours. Mr. Chambers, Mr. Mellor

216A-216B. Seminar in Byzantine History. Seminar, three hours. Mr. Vryonis

217. Sources and Handbooks of Medieval History. Seminar, three hours. Prerequisite: reading knowledge of German or French. An 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 prerequisite: reading knowledge of Latin and German or French. An examination of aspects of medieval history through the study of paleography, medieval libraries, and the transmission of ancient medieval authors. Mr. Rouse

219A. Paleography I. Seminar, three hours. Prerequisite: reading knowledge of Latin and German or French. A 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. Paleography II. Seminar, three hours. Prerequisite: reading knowledge of Latin and German or French. A 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. Seminar in Church and Monarchy in the Middle Ages. Seminar, three hours. Textual studies and interpretative problems in the constitutional, legal, and intellectual history of the Latin church and of the Western European monarchies, with special attention to the German monarchy, from the 11th to the 14th century. Mr. Benson

221A-221B. Seminar in Medieval History. Seminar, three hours. Mr. R.I. Burns

222A-222B. Seminar in Medieval Intellectual History and History of Science. Seminar, three hours. Selected problems from medieval and early modern philosophy, science, political theory, theology.
Mr. Funkenstein

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. An introduction to the topics, methods, and historiography of modern European history.

226A-226B. Seminar in the Italian Renaissance. Seminar, three hours. Mr. Martines

227A-227B. Seminar in the Reformation. Seminar, three hours. Mr. Clasen

229A-229B. Seminar in Early Modern European History. Seminar, three hours.
Mr. Martines, Mr. Symcox

230A-230B. Seminar in Modern European History. Seminar, three hours.
Mr. Loewenberg and the Staff

231A-231B. Seminar in Modern European Intellectual and Cultural History. Seminar, three hours.
Mr. Loewenberg, Mr. Weber, Mr. Wohl

232A-232B. Seminar in French History of the 19th and 20th Centuries. Seminar, three hours.
Mr. Weber

233A-233B. Seminar in Russian History. Seminar, three hours. Mr. Rogger

234A-234B. Seminar in the Modern History of Spain, Portugal, and Italy. Seminar, three hours.
Mr. Wohl

239A-239B. Seminar in English History: Middle Ages. Seminar, three hours.

240A-240B. Seminar in English History: Modern History. Seminar, three hours.

244A-244B. Seminar in British Empire History. Seminar, three hours.

245. Colloquium in U.S. History. Seminar, three hours. Normally limited to and required of all entering graduate students in U.S. history. A critical introduction to the historical method, with emphasis on new methodological and conceptual approaches, the use of source materials, and the current state of U.S. historiography.

246A-246B-246C. Introduction to United States History. Seminar, three hours. A graduate survey of the significant literature dealing with United States 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.
Mr. Gatell, Mr. Howe, Mr. Saxton

246C. 20th Century.
Mr. Coben, Mr. Dallek, Mr. Weiss

247A-247B. Seminar in Early American History. Seminar, three hours. Ms. Appleby, Mr. Nash

249A-249B. Seminar in Jacksonian America. Seminar, three hours. Mr. Gatell

250A-250B. Seminar in United States History of the Middle 19th Century. Seminar, three hours.
Mr. Gatell, Mr. Howe

252A-252B. Seminar in Recent United States History to 1930. Seminar, three hours.
Mr. Coben, Mr. Hines

253A-253B. Seminar in Recent United States History since 1930. Seminar, three hours.
Mr. Hines, Mr. Weiss

254A-254B. Seminar in United States Social and/or Intellectual History. Seminar, three hours.
Mr. Howe, Mr. Saxton

255A-255B. Seminar in the History of Business and Government in the American Economy. Seminar, three hours. Ms. Yeager

256A-256B. Seminar in American Diplomatic History. Seminar, three hours. Mr. Dallek

257A-257B. Seminar in United States Urban History. Seminar, three hours.
Mr. Hines, Mr. Monkkonen

258A-258B. Seminar in Working Class History. Seminar, three hours. Mr. Laslett, Mr. Saxton

259A-259B. Seminar in Social History of Women in the U.S. Seminar, three hours. Ms. Sklar

260A-260B. Seminar in Native American History. Seminar, three hours.

261A-261B. Seminar in Afro-American History. Seminar, three hours. Social and political history of the Afro-American, including emphasis on the development and structure of race relations in America; racial concepts and dilemmas, black and white.
Ms. Creel, Mr. Hill

262A-262B. Seminar in Chicano History. Seminar, three hours. Mr. Gómez-Quiñones

263A-263B. Seminar in the History of the American West. Seminar, three hours. Mr. Hundley

M264. History of American Education. (Same as Education M201C.) Seminar, three hours. The intellectual and social forces impinging on American education from the 1860s to the present. Analysis of the relation between these forces and the values, curriculum, structural organization, and functions of education. 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 the experience and competency required for future bibliographic and research sophistication as the basis for enhanced research results. Mr. Lauerhass

266A-266B. Seminar in Colonial Latin American History. Seminar, three hours. Mr. Lockhart

267A-267B. Seminar in Latin American History: 19th and 20th Centuries. Seminar, three hours.
Mr. Burr

M268A-M268B. Seminar in Recent Latin American History. (Formerly numbered 268A-268B.) (Same as Latin American Studies M268A-M268B.) Seminar, three hours. Reading knowledge of Spanish and Portuguese is normally required. A seminar devoted to selected topics of an interdisciplinary nature. In Progress grading. Mr. Wilkie

275. Introduction to the 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 the African Area Studies M.A. program. Source identification, research methodologies, historiographical traditions, historical interpretation, and approaches to teaching.

276. African Archaeology: Field Techniques (2 to 8 units). Seminar, three hours. Prerequisite: any introductory course in archaeology and preferably an African history course. A field course on an African excavation to provide the basic skills-reconnaissance, surveying, excavation techniques, conservation, and scientific sampling required by an archaeologist in Africa, together with an 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. A field course to equip students to handle finds from excavations. Analysis, description, illustration, and interpretation of an actual archaeological and/or ethnographic collection.
Mr. Posnansky

278A-278B. Seminar in African History. Seminar, three hours.

282A-282B-282C. Seminar in Chinese History. Seminar, three hours. Mr. Huang

285A-285B. Seminar in Modern Japanese History. Seminar, three hours. Mr. Notehelfer

288A-288B. Seminar in South Asia. Seminar, three hours. Mr. Wolpert

289A-289B. Seminar in Southeast Asia. Seminar, three hours. Mr. SarDesai

291A-291B. Seminar in Jewish History. Seminar, three hours. Studies in the intellectual and social history of the Jewish people from ancient times to the modern period. Mr. Funkenstein

293A-293B. Seminar in the History of Religions. Seminar, three hours. Mr. Bolle

295. Theories of Scientific Change. Seminar, three hours. Historical and philosophical perspectives on science, focusing on the rationality of scientific change and the logic and psychology of scientific discovery. Readings and seminar-style discussions of such authors as Popper, Kuhn, Toulmin, Lakatos, Holton, Buchdahl, Feyerabend, and others.
Mr. Westman

297A-297B. Seminar in the History of Science. Seminar, three hours. Mr. Westman, Mr. Wise

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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. The Teaching of 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 the 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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. 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 the 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)

An intercollege, interdepartmental major in history/art history is open to students in both the College of Letters and Science and the College of Fine Arts. You enroll in the college of your choice and fulfill the general education requirements of that college. For details on the undergraduate major, see Chapter 6 on the College of Fine Arts.

Honors Collegium

A311 Murphy Hall, (213) 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/English B requirement and continuing students with a UCLA grade-point average of 3.0 who have satisfied the Subject A/English B 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 provoke scholarly exchange across the major disciplines in the University. Core courses are offered regularly to provide a foundation in the physical and life sciences, humanities, and social sciences. A wide selection of special courses, varied each year, completes the curriculum.

Each Collegium course is staffed by a director who is distinguished in teaching and scholarship, by a variable number of visiting lecturers, and by additional specialists in their fields. Many Collegium courses satisfy general education requirements and serve as preparation for numerous majors in the College of Letters and Science. Counselors are available in the Division of Honors, A311 Murphy Hall, to advise and help you plan an integrated academic program.

In 1986-87 the Honors Collegium will offer the following one-quarter courses carrying from four to six units of credit each. Those courses marked "CORE" are part of the core curriculum; students are encouraged to take core courses in sequence.

Lower Division Courses

40. Origin and Evolution of the Solar System and the Earth. (CORE) Lecture/discussion, three hours. An investigation into the nature of space (astronomical) and time (geological) of the solar system, including comparative planetology; a study of the formation of the earth, its geological time scale, and the development of its atmosphere and hydrosphere. P/NP or letter grading. Mr. Ernst, Mr. Newman (F)

41. Origin and Evolution of Life and Humans. (CORE) Lecture/discussion, three hours. An investigation into the origin of living systems, the advent of an oxygen-rich atmosphere, the rise of life on land, the emergence of primitive hominids, and the appearance of modern human cultures at the dawn of cultural history. P/NP or letter grading.
Mr. Sackett, Mr. Schopf (W)

42. The Making of a Scientific Culture. (CORE) Lecture, three hours; discussion, one hour. An examination of the way in which science has shaped modern perceptual modes, institutions, and economic and political systems, including such material as Darwinian evolution, thermodynamics, genetics, and the problems of quantum physics. P/NP or letter grading.
Mr. Wise (F)

43. Mind, Brains, Humans, and Computers. Seminar, three hours; computer laboratory, three hours. Prerequisite: consent of instructor. Investigation into the mind/body problem and into current theories of what constitutes the mind, including a study of artificial intelligence and the essentials of programming in LISP (an artificial intelligence program). P/NP or letter grading. Mr. Taylor (F)

47. Brains: Structure, Function, and Evolution. Seminar, three hours. An examination of current perspectives on the structure, function, and evolution of brains to uncover the organization of the brain itself, and the ways in which the two structures correspond. A course in the philosophy of knowledge, not in neuroscience. Mr. Goldberg (Sp)

49. Computers, Science, and Computer Science. Seminar, three hours. A study of computers and the nature of automatic computation, both in theory and in current practice, including discussion of information, processing, artificial intelligence, social effects of computerization, and the capabilities and limitations of computer technology. Mr. Kay (Sp)

50. Greek Views of Humanity. (CORE) Lecture, three hours; discussion, one hour. Greek views of human experience as expressed in the literary forms invented or developed by the Greeks: epic, history, tragedy, comedy, and philosophy; study of the way in which Greek texts provide a foundation for subsequent Western literature and thought. P/NP or letter grading. Ms. Bergren (F)

51. Renaissance Views of Humanity. (CORE) Lecture, three hours; discussion, one hour. A study of the ideals and literary forms of the Renaissance and of the interplay between Christian theology and reborn classical aspirations. Investigation, through authors ranging from Erasmus to Shakespeare, of individualism, authority, and concepts of history and honor. P/NP or letter grading. Ms. King (W)

52. The Rise and Fall of the 19th-Century Novel. (CORE) Lecture, three hours; discussion, one hour. An explanation of the narrative strategies used by such authors as Austen, Stendhal, Balzac, Dickens, Turgenev, Flaubert, and Fontane, including a discussion of the historical and political circumstances, as well as the cultural and ideological assumptions, underlying 19th-century realism. Ms. Re (Sp)

54. Literature and Performance. Seminar, three hours. An exploration of the ways in which literature is affected by readings, by performance, and by oral tradition. Students research the nature either of a specific work (as affected by performance) or a presentation of a work (as in the one-man shows of Dickens and Twain). P/NP or letter grading.
Mr. Hutter (F)

56. Structure and Development of Language. Lecture, four hours; discussion, one hour. A study of the nature of human language, including its formal character (phonetics, syntax), differences and similarities between sign languages and spoken languages, language acquisition, the relationship between languages and other mental abilities, and the autonomous nature of language as a system of knowledge. P/NP or letter grading. Ms. Curtiss (W)

57. Religion and Human Experience: Suffering and Salvation (6 units). Lecture, four hours; discussion, one hour; oral skills seminar, two hours. An investigation into the philosophical, moral, and religious problems raised by the understanding of good and evil; an analysis of potential responses: pessimism, stoicism, rebellion, escapism, etc. Readings include such authors as St. Benedict, Dostoevsky, Euripedes, Hume, Kierkegaard, Rousseau, and Weil. P/NP or letter grading. Ms. Adams (Sp)

58. The Masculine and the Feminine: Politics and Love. Seminar, two and one-half hours. A study of the philosophical and literary imagination of the patriarchal Western tradition as it shapes and is shaped by concepts of masculinity and femininity. Emphasis on comedic texts that address the conflict between the state (masculinity represented in militarism and legal authority) and the feminine principle of a family or a love interest. Ms. Melzer (Sp)

61. Social Theory in the 20th Century (6 units). (CORE) Lecture, three hours; discussion, one hour; writing seminar, two hours. An 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. Alexander, Mr. Entrikin (W)

62. Community and Self-Interest in the History of American Culture. (CORE) Lecture, three hours; discussion, one hour. An exploration of the historical origins of the frequently contradictory values which inform American thought and culture: hierarchy and equality, institutional constraints and voluntarism, a collective sense of mission and a belief in the autonomous individual. Ms. Bloch (W)

63. Evolution of Modern Urban Society. Seminar, three hours. An analysis of the late 20th-century city through a study of the urban past, addressing topics ranging from population process to the nature of community, from crime to finance, from politics to pollution. Includes opportunity for computer analysis of a data base. P/NP or letter grading.
Mr. Monkonnen (Sp)

66. The Classics of Zen. Seminar, two and one-half hours. Introduction to characteristic thought forms and cultural expressions of the people of China, Korea, and Japan through the major classical texts (in translation) of the East Asian tradition of Zen. Discussion of the contemporary relevance of the classical texts. Mr. LaFleur (W)

67. The Trial of Galileo. Seminar, three hours. An appreciation of science as a historical process. The trial and condemnation of Galileo raise questions about the scientific issues at stake, the legal, political, and religious complexities impinging on the decision, the real or apparent conflict between science and religion, and the meaning of the Galileo affair today.
Mr. Westman (Sp)

68. History of Social Thought (6 units). (CORE) Lecture, three hours; discussion, one hour; writing seminar, two hours. A study of the significant forms of social theory and social change from the English Revolution to the beginning of the 20th century, including readings from Hobbes, Rousseau, Smith, Tocqueville, Marx, and Freud. P/NP or letter grading.
Mr. Prager (F)

70. Genetic Engineering in Medicine and Agriculture. Lecture/discussion. An overview of the principles of cell and molecular biology and of the technical details of genetic engineering; discussion of the benefits and detriments of the new biotechnology in relation to medicine, agriculture, and general social issues. Mr. Goldberg (F)

71. The Physics of Music. Seminar, three hours; laboratory/demonstration, two hours. An exploration of the relationship between musical sound as a physical phenomenon and the aesthetic perception of it as music. The physical principles of instruments, the role of room acoustics, and the theoretical basis of sound reproduction, including digital recording and signal processing. Mr. Greene (Sp)

80. The Literature of Diversity: Cultural Experience in America. Seminar, three hours. An examination of the richness and variety of American culture as revealed in literary works generally neglected in traditional surveys. Theories of ethnicity and nationalism, presented in such works as *Black Elk Speaks, Their Eyes Were Watching God,* Mexican Corridos on immigration, and *China Men.* P/NP or letter grading.
Mr. Paredes (F)

81. The City in History and Literature. Seminar. A study of literature, concentrating on the rise of the commercial city, moving to the industrial city and to the postindustrial or "global" city; a parallel study of scholarly hypotheses, research, revision, and critical methodology. Mr. Lehan (W)

83. Politics and the Rhetoric of Literature (6 units). (Formerly numbered 15.) Seminar, four hours; writing seminar, two hours. An examination of the relationship among politics, rhetoric, and literature. The study of literature from classical times to the present, broadening into a general discussion of the development of political discourse in Western thought, particularly the conflict between the self and the state, between ideology and the practical business of living. P/NP or letter grading.
Ms. Wilson (W)

84. Tools of Thought: The Creative Process Dissected. Seminar, three hours. Investigation of the thesis that, despite differences in the products of scientists, artists, and professionals, the creative process by which these people solve their problems is very similar. Readings include classic works in the sciences, humanities, and arts. Students apply course material to their particular field of study. P/NP or letter grading. Mr. Root-Bernstein (Sp)

90. The French Revolution: Ideologies and Images (6 units). Lecture, two and one-half hours; discussion, one hour; writing seminar, two hours. An examination of the history of the French Revolution as a series of world historical events and as a source of dominant ideologies and images that have influenced the culture of France, Western Europe, and North and South America. P/NP or letter grading.
Mr. Maniquis (Sp)

91. Intervention and Democracy. Lecture/discussion. A study of United States intervention — whether by means of overt threat such as force or economic sanctions, or by means of covert action — in the internal affairs of other countries: Vietnam, Zaire, Chile, Greece, Iran, and Cuba. Mr. Zeitlin (W)

92. Technological Hazards. Seminar, three hours. The scientific study of hazards and disasters resulting from failure or misapplication of technologies which threaten the social, physical, and biological support systems of the earth. Hazards range from asbestos in hair dryers to the threat of nuclear war.
Mr. Johnson (Sp)

93. Geopolitics and Strategy in the Modern Era, 1945-1985. Seminar, three hours. An investigation into the geopolitical interests of the United States, the U.S.S.R., and Western Europe, including an analysis of strategies (psychological, guerrilla, and classical warfare, terrorism, etc.) in the conflict between East and West and of strategies appropriate for a nuclear age. P/NP or letter grading. Mr. Chaliand (Sp)

Humanities

334D Royce Hall, (213) 825-7650

Professors

Arnold J. Band, Ph.D. *(Hebrew and Comparative Literature)*
A. R. Braunmuller, Ph.D. *(English)*
Philip Levine, Ph.D. *(Classics)*
Ross P. Shideler, Ph.D. *(Scandinavian and Comparative Literature), Chair*
Pier-Maria Pasinetti, Ph.D., *Emeritus (Italian and Comparative Literature)*

Associate Professors

Albert D. Hutter, Ph.D. *(English)*
Katherine C. King, Ph.D. *(Classics and Comparative Literature)*
Kathleen L. Komar, Ph.D. *(German and Comparative Literature)*

Assistant Professor

Lucia Re, Ph.D. *(Italian and Comparative Literature)*

Lower Division Courses

The following courses are made up of selected masterpieces of world literature. They are recommended to satisfy the humanities general education requirements 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. A study of major texts in world literature, with emphasis on Western civilization. Texts include major works and authors such as the *Iliad* or the *Odyssey*, Greek tragedies, portions of the Bible, Virgil, Petronius, St. Augustine, and others such as *Gilgamesh* or *Tristan and Yseult*.

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. A 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, Calderon, Moliere, 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. A 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.

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. Fulfills the College of Letters and Science English Composition requirement and the College of Fine Arts Critical Reading and Writing requirement. The 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 the *Iliad*, Greek tragedies, the *Aeneid*, Petronious, St. Augustine, or *Tristan and Yseult*.

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. Fulfills the College of Letters and Science English Composition requirement and the College of Fine Arts Critical Reading and Writing requirement. The 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, Calderon, Moliere, 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. Fulfills the College of Letters and Science English Composition requirement and the College of Fine Arts Critical Reading and Writing requirement. The 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

101. The Romantic Dilemma. Prerequisite: one course from Humanities 1A, 1B, 1C, 2A, 2B, 2C, or English 3, or consent of instructor. The theme of Romantic individualism and rebellion, pursued through literary examples of Romantic hero types (and antitypes) from Rousseau and Goethe to Dostoevsky and Hesse.

102. Satire. Prerequisite: one course from Humanities 1A, 1B, 1C, 2A, 2B, 2C, or English 3, or consent of instructor. The changing nature of satire as illustrated by examples of the genre from Horace and Juvenal to Ionesco and Nabokov.

104. The 20th-Century Continental Novel: Mann and Proust. Prerequisite: one course from Humanities 1A, 1B, 1C, 2A, 2B, 2C, or English 3, or consent of instructor. An intensive study of *The Magic Mountain* and *The Remembrance of Things Past* as works of art and as expressions of the sense of social and cultural dissolution felt in early 20th-century Europe.
Mr. Pasinetti

C105. The Comic Spirit. Prerequisites: upper division standing, literature major. Literary masterpieces, both dramatic and nondramatic, selected to demonstrate the varieties of comic expression. May be concurrently scheduled with Comparative Literature C205. Undergraduates read all works in translation.
Mr. Band

M106. Hebrew Literature in English — The Literary Traditions of Ancient Israel: Bible and Apocrypha. (Same as Jewish Studies M150A.) Lecture, three hours. A study of the literary culture of ancient Israel through an examination of the principal compositional strategies of the Hebrew Bible and the Apocrypha (read in translation). Mr. Band

C107. The Classical Tradition: Epic. Seminar, three hours. Prerequisites: upper division standing, literature major, consent of instructor. Analysis of the *Iliad*, the *Odyssey*, the *Aeneid*, the *Gerusalemme Liberata*, and *Paradise Lost* both in relation to their contemporary societies and to the literary traditions. Emphasis on how poets build on the work of their predecessors. May be concurrently scheduled with Comparative Literature C207. Ms. King

C109. The Crisis of Consciousness in Modern Literature. 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 the works of Kafka, Rilke, Woolf, Sartre, and Stevens. May be concurrently scheduled with Comparative Literature C209. Undergraduates read all works in translation. Ms. Komar

110. Man and His Fictions. Prerequisite: one course from Humanities 1A, 1B, 1C, 2A, 2B, 2C, or English 3, or consent of instructor. The art of tale-telling and the nature of narrative. Examination of the wisdom or knowledge the tales possess, how the exchange of tales defines and sustains a community, and how a narrator clarifies form and meaning for the audience.
Ms. Komar

C111. The Classical Tradition: Tragedy. 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. May be concurrently scheduled with Comparative Literature C211.
Ms. King

114. The Short Novel. Prerequisite: one course from Humanities 1A, 1B, 1C, 2A, 2B, 2C, or English 3, or consent of instructor. A study of selected short novels as works of literary art and as relevant intellectual statements. Texts by Melville, Flaubert, Dostoevsky, Kafka, et al. Mr. Pasinetti

115. Four Modern Dramatists. A study of several works by four major modern dramatists, focusing on understanding specific elements in each work and the authors' possible interrelations. Pirandello, Beckett, and Pinter are read; the fourth author is selected from Ionesco, Giradoux, Cocteau. Mr. Braunmuller

116. Man and Society in the Renaissance. 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,* the *Essays of Montaigne, Gargantua and Pantagruel, The Praise of Folly, Utopia.* Mr. Allen

C117. The Mystery Novel. Prerequisites: upper division standing and literature major, or consent of instructor. A study of mystery and detective fiction in England, France, and the United States. Development of the origin, form, and historical significance of mystery fiction through close readings of selected works. May be concurrently scheduled with Comparative Literature C297. Undergraduates read all works in translation. Mr. Hutter

C129. Archetypal Heroes in Literature. Lecture, three hours. Prerequisite: upper division standing. Survey and analysis of the function and appearance of such archetypal heroes as Achilles, Ulysses, Prometheus, Oedipus, and Orpheus in literature from antiquity to the modern period. Concurrently scheduled with Comparative Literature C229. Undergraduates read all works in translation. Ms. King

138. Ancient and Medieval Oral Poetry. Prerequisites: upper division standing, literature major. A study of primary texts believed to be orally composed, their origins, characteristic forms, and function. Readings include such primary texts as the *Odyssey, Beowulf, The Song of Roland,* and selections of Norse poetry, as well as comparative material such as the *Aeneid,* the Norse sagas, and discussions of modern African and Yugoslavian oral poetry.

C139. Early Medieval Literature. Prerequisites: upper division standing, literature major. A survey of the Latin and Germanic literatures from the fall of Rome to the beginning of the 12th century. May be concurrently scheduled with Comparative Literature C239. Undergraduates read all works in translation.
Mr. Calder

C140. Medieval Epics. Prerequisites: upper division standing, literature major. Consideration of five medieval epics *(Beowulf, El Cid, Chanson de Roland, Nibelungenlied,* and *Njalssaga),* with two objectives: first, a critical understanding of each work, and second, an understanding of the nature of epic literature. Assignments consist of an extended seminar paper and short oral reports. May be concurrently scheduled with Comparative Literature C240. Undergraduates read all works in translation. Mr. Condren

C141. The Literary Mediation of History in the Renaissance. Seminar, three hours. Prerequisites: upper division standing, literature major. An analysis of the presence and the treatment of history in the rhetoric of Renaissance authors ranging from the Italian humanists to Machiavelli and Shakespeare. Other authors include Poliziano and Lorenzo de' Medici. May be concurrently scheduled with Comparative Literature C241. Undergraduates read all works in translation. Ms. Re

C145. Renaissance Drama. Prerequisites: upper division standing and literature major, or consent of instructor. A broad introduction to the 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 C245. Undergraduates read all works in translation. Mr. Braunmuller

C165. The French Revolution and European Literature. Seminar, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. Part of the UCLA French Revolution Bicentennial Program. A course in cultural criticism using plays, poetry, popular tracts, etc., to explore the context and connections of the French Revolution to European culture. Authors range from Voltaire and Rousseau to Tom Paine, Coleridge, Wordsworth, Goethe, and Kant. Concurrently scheduled with Comparative Literature C265. Undergraduates read all works in translation; term paper required.
Mr. Maniquis

C168. Romantic Autobiography. Discussion, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. The evolution of the autobiography from spiritual (Augustine) and secular (Cellini) sources to the transition in the 18th century which blended features of the epic poem and the quest-romance. Wordsworth's *Prelude* came to represent the best example of this mixture. Major examples of the Romantic autobiography to be studied include Rousseau's *Confessions,* Wordsworth's *Prelude,* and Goethe's *Wilhelm Meister's Apprenticeship.* Later novels that develop and extend the genre include Joyce's *Portrait of the Artist as a Young Man* and Proust's *Swann's Way.* May be concurrently scheduled with Comparative Literature C268. Undergraduates read all works in translation.
Ms. Packer

C170. The Dream in English and German Romantic Literature. Lecture, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. A study of the use of the dream as a standard narrative technique in English and German Romantic literature. May be concurrently scheduled with Comparative Literature C270. Undergraduates read all works in translation. Mr. Burwick

C171. Dramatic Theory and Criticism in German and English Romanticism. Seminar, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. The generic conception of drama in the critical essays of the Schlegels, Tieck, Jean Paul, Coleridge, De Quincey, and Hazlitt, with emphasis on the role of the actor and the idea of dramatic action as discussed by the critics. May be concurrently scheduled with Comparative Literature C271. Undergraduates read all works in translation.
Mr. Burwick

C172. The Grotesque in Romantic Literature and Art. Prerequisites: upper division standing and literature major, or consent of instructor. A study of the grotesque in the visual and verbal arts of the Romantic period; the aesthetics of tragic-comic interaction, the demonic vision, and the satirical sketches of man's abnormality and perversity. May be concurrently scheduled with Comparative Literature C272. Undergraduates read all works in translation.
Mr. Burwick

C173. Theory and Texts of the Fantastic. Seminar, three hours. Prerequisites: upper division standing, literature major. An 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 Hoffman, Nerval, James, Poe, Borges, Casares, Cortazar, Landolfi, and Calvino. May be concurrently scheduled with Comparative Literature C273. Undergraduates read all works in translation. Ms. Re

C175. The 19th-Century Novel. Seminar, three hours. Prerequisites: upper division standing, literature major. A comparative study of the 19th-century novel in England and on the continent. Novels are selected so as to allow the seminar to concentrate on a particular tradition or critical problem. May be concurrently scheduled with Comparative Literature C275. Undergraduates read all works in translation.
Mr. Lehan

C176. Fiction and History. Seminar, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. Analysis of the use of historical events, situations, and characters in literary works of the Renaissance and/or the modern period. Texts and individual assignments range from Renaissance historical narratives (the Italian humanists, Machiavelli) to 19th- and 20-century novels by authors such as Stendahl, Verga, Tomasi di Lampedusa, Carpentier, and Kundera. Use of fictional methods by historians. Emphasis on how aesthetic, ideological, and political factors influence the authors' choice and use of historical material. May be concurrently scheduled with Comparative Literature C276.
Mr. Pasinetti, Ms. Re

C178. Darwinism and Literature. (Formerly numbered 178.) Seminar, three hours. Prerequisite: upper division standing or consent of instructor. The impact of Darwin's theories on European and American literature. While texts include major works in the development of naturalism, such as novels by Zola, Hardy, Crane, or Dreiser and plays by Strindberg and Ibsen, the course moves forward into the continuing influence of other "determinist" and behaviorally oriented theories in works by authors such as Mann, Sartre, Camus, Stevens, and Skinner. May be concurrently scheduled with Comparative Literature C278.
Mr. Shideler

C180. The Symbolist Tradition in Poetry. Prerequisites: upper division standing and literature major, or consent of instructor. A study of the symbolist tradition in 19th- and 20th-century English, French, and German poetry. May be concurrently scheduled with Comparative Literature C280. Undergraduates read all works in translation. Mr. Shideler

C181. Poetry and Poetics of the Post-Symbolist Period. Prerequisites: upper division standing and literature major, or consent of instructor. A study of some of the dominant poetic trends and figures in American and European poetry in the first half of the 20th century, including such surrealists as Pound, Eliot, Valery, Rilke, George, and Stevens. May be concurrently scheduled with Comparative Literature C281. Undergraduates read all works in translation.
Ms. Komar, Mr. Shideler

182. The Semiotics of Story and Film: An Introduction to Narrative Semiotics. Discussion, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. An investigation of the theoretical aspects of semiotics and their application to specific narratives in prose and film.
Mr. Haidu

C183. Novel, Crime, Ritual. Discussion, three hours. Prerequisites: upper division standing and literature major, or consent of instructor. An investigation of a range of novels dealing with ritual and crime and their relation to the novel form. Readings include such texts as de Ayala's *Belarmino and Apolonio,* Singer's *The Magician of Lublin,* selected stories from Babel's *Red Cavalry,* a Dickens' novel, and Laclos' *Liasions Dangereuses.* Concurrently scheduled with Comparative Literature C283. Undergraduates read all works in translation. Mr. Baumgarten

C184. The Alternative Tradition: In Search of a Female Voice in Contemporary Literature. 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 C284. Undergraduates read all works in translation. Ms. King, Ms. Komar

C185. The Modern Continental Novel. Lecture, 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. Authors such as Gide, Proust, Mann, Joyce, Nabokov, and Grass are used to focus on the development of themes such as primitivism vs. authority, change vs. stability, and the self-conscious narrative. Concurrently scheduled with Comparative Literature C285. Undergraduates read all works in translation. Mr. Lehan

Indo-European Studies (Interdepartmental)

1037 Graduate School of Management, (213) 825-4242

Professors

Raimo A. Anttila, Ph.D. *(Linguistics)*
Henrik Birnbaum, Ph.D. *(Slavic Languages and Literatures)*
Patrick K. Ford, Ph.D. *(Celtic Languages and Literatures)*
Marija Gimbutas, Ph.D. *(Slavic Languages and Literatures, Archaeology)*
Bengt T. M. Löfstedt, Ph.D. *(Classics)*
Jaan Puhvel, Ph.D. *(Classics, Indo-European Studies)*
Hartmut E. F. Scharfe, Ph.D. *(East Asian Languages and Cultures)*
Hanns-Peter Schmidt, Ph.D. *(Near Eastern Languages and Cultures)*
Alan H. Timberlake, Ph.D. *(Slavic Languages and Literatures)*
Terence H. Wilbur, Ph.D. *(Germanic Languages)*

Associate Professor

Joseph F. Nagy, Ph.D. *(Celtic Languages and Literatures)*

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 Folklore and Mythology Center, 1037 GSM, UCLA, Los Angeles, CA 90024.

Admission to the program itself constitutes admission to the doctoral program; there is no master's degree 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 Educational Testing Service (ETS) examination 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), 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 Linguistics (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 reexamination. 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

The final oral examination is designed to allow the committee to evaluate the dissertation within the discipline and within your own specialization. Although it is stated as a requirement, individual circumstances have on occasion dictated waiver of the final oral examination.

Upper Division Courses

131. European Archaeology: Proto-Civilizations of Europe. A survey of European cultures from the beginning of the food-producing economy in the 7th Millennium B.C. to the beginning of the Bronze Age in the 3rd Millennium B.C. Mrs. Gimbutas

132. European Archaeology: The Bronze Age. Prerequisite: course 131 or consent of instructor. A survey of European cultures from around 3000 B.C. to the period of the destruction of the Mycenaean culture about 1200 B.C. The Aegean area and the rest of Europe. Mrs. Gimbutas

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. A survey of the 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 (F)

250A-250B. European Archaeology. (Formerly numbered M250A-M250B.) 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. Mrs. Gimbutas

280A-280B. Seminar in 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 in Ancient Near Eastern Archaeology
261. Practical Field Archaeology
Anthropology 110. World Archaeology
112. Old Stone Age Archaeology
115Q. Archaeological Research Techniques
115R. Strategy of Archaeology
116P. Laboratory Analysis in 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 in Classical Archaeology: The Aegean Bronze Age
260. Topics in Ancient Religion
268. Seminar in Comparative Mythology
East Asian Languages and Cultures 160. Elementary Sanskrit
161. Intermediate Sanskrit
162. Advanced Sanskrit
165. Readings in Sanskrit
214A-214B. Pali and Prakrits
221A-221B. Introduction to Panini's Grammar
247. Selected Readings in Sanskrit Texts
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 in Historical and Comparative German Linguisitics
Greek (Classics) 240A-240B. History of the Greek Language
242. Greek Dialects and Historical Grammar
243. Mycenaean Greek
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 100. Introduction to Linguistics
103. Introduction to General Phonetics
110. Introduction to Historical Linguistics
120A, 120B. Linguistic Analysis
Old Norse Studies (Germanic Languages) 140. Viking Civilization and Literature
151. Elementary Old Norse
152. Intermediate Old Norse
245A. Germanic and Scandinavian Mythology
Semitics (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, (213) 825-3862

Scope and Objectives

The Special Undergraduate Program 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 science in the secondary schools. These students should structure their programs primarily to meet the preparation requirements of the professional school or teaching 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 Program

Required: Political Science 20, 50, and two courses from 10, 40, 70, 80; History 1A-1B-1C or any three courses from 5A, 5B, 8A, 8B, 8C, 9A, 9B, 9C, 9D, 10A, 10B; Economics 1 and 2, or 100; Sociology 1; Anthropology 5 or 22; Geography 3 or 5.

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, Field V, or Field VI.

Other required social science courses include one course from Geography 140, 181, 182A, 182B, 183, 184, 185, 186, 187, 188, 189, 190; one course from Anthropology 171, 173P, 173Q, 174P, 174Q, 175P, 175Q, 175R, 175S, 176, 177; two courses from Economics 110, 111, 112, 180, 181A, 181B, 182, 190, 191, 192; two courses from History 116A, 116B, 117A, 127A, 127B, 142A, 142B, 148C, 152A, 152B, 168, 186.

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 Portuguese, Italian, Germanic Languages, Near Eastern Languages and Cultures, African Languages, and East Asian Languages and Cultures. 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 Latin America, Africa, the Atlantic area, the Soviet sphere, East Asia, Southeast Asia, South Asia, or the Middle East.

For further information, contact Vicki Waldman, Political Science Counselor, in the program office.

Islamic Studies
(Interdepartmental)

10286 Bunche Hall, (213) 825-1181

Professors

Amin Banani, Ph.D. *(Near Eastern Languages and Cultures and History)*
Leonard Binder, Ph.D. *(Political Science)*
Andras Bodrogligeti, Ph.D. *(Near Eastern Languages and Cultures)*
Seeger A. Bonebakker, Ph.D. *(Near Eastern Languages and Cultures)*
Robert I. Burns, S.J., Ph.D. *(History)*
Herbert A. Davidson, Ph.D. *(Near Eastern Languages and Cultures)*
Richard Hovannisian, Ph.D. *(History)*
Nikki Keddie, Ph.D. *(History)*
John G. Kennedy, Ph.D. *(Anthropology and Psychiatry)*
Afaf Marsot, D.Phil. *(History)*
Ismail Poonawala, Ph.D. *(Near Eastern Languages and Cultures), Chair*
Georges Sabagh, Ph.D. *(Sociology)*
Damodar R. SarDesai, Ph.D. *(History)*
Stanford J. Shaw, Ph.D. *(History)*
Speros Vryonis, Jr., Ph.D. *(History)*
Stanley A. Wolpert, Ph.D. *(History)*

Associate Professors

Gerry A. Hale, Ph.D. *(Geography)*
Ioli Kalavrezou-Maxeiner, Ph.D. *(Art History)*
Michael G. Morony, Ph.D. *(History)*
Thomas Penchoen, Ph.D. *(Near Eastern Languages and Cultures)*
A. Jihad Racy, Ph.D. *(Music)*

Assistant Professors

Irene Bierman, Ph.D. *(Art History)*
Nazif M. Shahrani, Ph.D. *(Anthropology)*

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 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 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 and Iranian 102A-102B-102C or Turkic Languages 102B-102C. In addition, you should have completed the equivalent of two years of Near Eastern history (classical and modern). Some coursework in Islamic culture and institutions may be applied toward the history requirement. Deficiencies in any of these prerequisites will 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 overseas applicants. No screening examination is required.

A departmental brochure may be obtained by writing to the G.E. von Grunebaum Center for Near Eastern Studies, 10286 Bunche Hall, UCLA, Los Angeles, CA 90024.

Major Fields or Subdisciplines

Arabic, Persian, Turkish, history of the Near East, political science, anthropology, sociology, Islamic art, Near Eastern music.

Foreign Language Requirement

You are required to show proficiency in either French or German. You are expected to pass the Educational Testing Service (ETS) graduate foreign language reading examination in French or German by the end of your third quarter in residence.

Course Requirements

A minimum of nine courses is required, five of which must be graduate. You must take no fewer than four courses on the appropriate level in the two Near Eastern languages 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.

Comprehensive Examination Plan

The thesis plan is not available in this program. You must pass written examinations in two Near Eastern languages and literatures, the history of the Near East, and one other social science. 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. 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 overseas applicants.

A departmental brochure may be obtained by writing to the G.E. von Grunebaum Center for Near Eastern Studies, 10286 Bunche Hall, UCLA, Los Angeles, CA 90024.

Major Fields or Subdisciplines

Arabic, Persian, Turkish, history, anthropology, sociology, political science, Islamic art, Near Eastern music.

Foreign Language Requirement

At the beginning of your first quarter 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 pass the graduate foreign language reading examination in both languages by the end of your second year in residence. For work in some fields, a reading knowledge of Italian, Spanish, or Russian may be substituted for one of the above European languages after satisfactory advisement. The Educational Testing Service (ETS) examination is acceptable.

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 other social science field (anthropology, political science, sociology). After successfully completing the written examinations, you must pass the University Oral Qualifying Examination in order to be advanced to doctor-

al 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. The Study of Culture
133P. Social and Psychological Aspects of Myth and Ritual
150. Comparative Society
156. Comparative Religion
161. Development Anthropology
M163. Women in Culture and Society
167. Urban Anthropology
176. Cultures of the Middle East
215. Field Training in Archaeology
230P. Ethnology
230Q. Cultural Anthropology
M232P. Cultural Modes of Thought
232Q. Myth and Ritual
239P. Selected Topics in Field Training in Ethnography
239Q. Analysis of Field Data
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
114A-114B-114C. Spoken Moroccan Arabic
120. Islamic Texts
130. Classical Arabic Texts
132. Philosophical and Kalam Texts
140. Modern Arabic Texts
141. Modern Arabic Literature
150A-150B. Survey of Arabic Literature in English
199. Special Studies in Arabic
220. Seminar in Islamic Texts
230. Medieval Literary Texts
240. Seminar in Arab Historians and Geographers
250. Seminar in 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 (Art, Design, and Art History) 104A. Western Islamic Art
104B. Eastern Islamic Art
C104C. Problems in Islamic Art
105E. Byzantine Art
213. Problems 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 M170A, M170B. Byzantine Civilization

French 121A. Franco-African Literature
221A. Introduction to the Study of the French-African Literatures
221C. 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. Seminar in Later Greek and Byzantine Literature

Hebrew (Near Eastern Languages) 230. Seminar in 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. Recent History of India and Pakistan
190A-190B. History of Southeast Asia
204A-204B. Seminar in Near and Middle Eastern History
205A-205B. Seminar in Medieval Middle Eastern History
206A-206B. Seminar in the Social History of the Middle East
209A-209B. Seminar in Ottoman and Modern Turkish History
216A-216B. Seminar in Byzantine History
596. Directed Studies
597. Directed Studies for Graduate Examinations
599. Ph.D. Research and Writing

Iranian (Near Eastern Languages) 101A-101B-101C. Elementary Persian
102A-102B-102C. Intermediate Persian
103A-103B-103C. Advanced Persian
140. Contemporary Persian Belle 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, the Mystic Poet of Islam
250. Seminar in Classical Persian Literature
251. Seminar in Contemporary Persian Literature
596. Directed Individual Study
597. Examination Preparation
599. Ph.D. Dissertation Research and Preparation

Islamics (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

Jewish Studies (Near Eastern Languages) 110. Social, Cultural, and Religious Institutions of Judaism

Linguistics 220. Linguistic Areas
225. Linguistic Structures

Music 282. Music of Iran and Other Non-Arabic-Speaking Communities
284. Music of the Arabic-Speaking Near East

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 in 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
C250F. Seminars in Regional and Area Political Studies: Middle Eastern Studies
250K. Seminars in Regional and Area Political Studies: North African Studies

Semitics (Near Eastern Languages) 215A-215B. Syriac

Sociology 132. Population and Society in the Middle East
133. Comparative Sociology of the Middle East
151. Culture and Personality
236. Social Change in the Middle East
237. Social Stratification in the Middle East

Turkic Languages (Near Eastern Languages) 101A-101B-101C. Elementary Turkish
102A-102B-102C. Intermediate 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 Diplomatics
220A-220B-220C. Chagatay
230A-230B-230C. A Historical and Comparative Survey of the Turkic Languages
235A-235B. Middle Turkic
240A-240B-240C. Advanced Ottoman
250A-250B-250C. Islamic Texts in Chagatay
280A-280B. Seminar in Modern Turkish Literature
290A-290B. Seminar in Classical Turkish Literature
596. Directed Individual Study
597. Examination Preparation
599. Ph.D. Dissertation Research and Preparation

Italian

340 Royce Hall, (213) 825-1940

Professors

Franco Betti, Ph.D., *Chair*
Giovanni Cecchetti, Ph.D., Dottore in Lettere
Fredi Chiappelli, Dottore in Lettere, Dott. Lett. "Honoris Causa"
Margherita Cottino-Jones, Ph.D., Dottore in Lettere
Edward F. Tuttle, Ph.D.
Pier-Maria Pasinetti, Ph.D., Dottore in Lettere, *Emeritus*

Assistant Professor

Lucia Re, Ph.D., Dottore in Lettere

Lecturers

Mirella Cheeseman, Dottore in Legge
Althea Reynolds, B.A., *Emeritus*

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, a 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 are 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 101, 102A-102B-102C, 113A-113B, 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: Classics 143, 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, 100 Dodd 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 quarter 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 quarter 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, Design, and Art History, Classics (Latin), English, French, History, Linguistics, Music, Philosophy, Political Science, Spanish and Portuguese, and Theater, Film, and Television. 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 quarter 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.

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 in 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 quarter before the comprehensive examination.

Course Requirements

Italian Literature Specialization

(1) For the thesis plan, 12 courses are required, including Italian 200A, 200B, 200C, and 205B. 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, and 205B. 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 100 or 140 or both. 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, 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 the Spring Quarter of your second year 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 of the 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.

Prerequisite for entering the department's doctoral program is an M.A. in Italian literature from UCLA or another university in the United States or the equivalent. Students with a master's degree from another institution, or the equivalent, will be required to pass part 1 of the Ph.D. qualifying examinations by the end of their third quarter in residence. They should expect to take part 2 of the examinations after approximately eight quarters.

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 quarter in residence, carrying a normal course load.

Students holding the M.A. from UCLA will normally take part 2 of the qualifying examinations at the end of their sixth quarter in residence.

Major Fields or Subdisciplines

Two centuries of Italian literature in the medieval, Renaissance and baroque, or modern areas 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 Educational Testing Service (ETS) 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 will 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 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 quarter. Normally taken six quarters 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 quarter 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, you may be required to 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 the 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 the 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 the capacity and desire to learn the language at a much faster pace than normal. Encompasses the 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 the 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 the capacity and desire to learn the language at a much faster pace than normal. Encompasses the 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 quarters of language instruction and have developed considerable skills in Italian. Designed to improve further students' spoken proficiency through constant exposure and practice of the language. Each course may be repeated once for credit. Mrs. Reynolds in charge

25. Advanced Italian. Lecture, five hours. Prerequisite: course 5. An 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. A general survey of the history, literature, art, music, and architecture audiovisually illustrated, with emphasis on Italy's cultural contributions to Western civilization. A service course designed to meet the general education requirements:

42A. From the Origins through the Renaissance.
Mrs. Cottino-Jones, Mr. Tuttle

42B. From the Enlightenment to Modern Italy.

46. Italian Cinema and Culture. (Formerly numbered 46A-46B-46C.) Lecture, two hours; discussion, one hour; film screenings, two to three hours. A survey of the development of Italian cinema and culture from the 1900s to the present through an analysis of the principal aesthetic, literary, artistic, and philosophical movements in Italy as reflected in the works of the nation's filmmakers and writers.
Ms. Re (F,W,Sp)

50A-50B. Main Trends in Italian Literature:

50A. Italian Literature to the Baroque Period. A study of selected works of the major writers of the period, including Dante, Petrarch, Boccaccio, Ariosto, Machiavelli, Castiglione, Tasso, Bruno, Galileo, Marino.

50B. Italian Literature from 1700 to the Present. A study of selected works by the major writers of the period, including 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.

101. Preparation for Advanced Italian Studies. Lecture, three hours. Designed to acquaint juniors with the research tools fundamental to the study of Italian culture, with emphasis on how to find texts and collateral material, how to utilize bibliographies, dictionaries, encyclopedias, manuals, and periodicals, and how to proceed in literary analysis.
Mr. Chiappelli

102A-102B-102C. The Italian Cultural Experience. Lecture, three hours. A study of the cultural development of Italy conducted especially with a view to contemporary situations:

102A. From the 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 the stresses to which the industrializing state currently is subject. Mr. Tuttle

110A-110B. The *Divine Comedy* in English. Lecture, three hours.

113A-113B. Dante's *Divina Commedia.* Lecture, three hours. Focus on the *Divine Comedy.* Selected readings from the text integrated with relevant information on scholasticism, classical tradition, medieval literature and poetics, and the sociopolitical structure of Dante's world:

113A. General Introduction and Readings from *Inferno.*

113B. Readings from *Purgatorio* and *Paradiso.*
Mr. Cecchetti

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 the works of Foscolo and Leopardi and to the sociohistorical novels of Foscolo, Manzoni, and Verga. Mr. Betti

120. Italian Literature of the 20th Century. Lecture, three hours. A 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. Cecchetti

121. Italian Cinema. Lecture, three hours. A comparative study of specific literary works and their translations into films and of the different techniques in the two forms of expression. Texts include literary works, screenplays, and works on literary and film theory.

122. The Italian Theater. Lecture, three hours. Emphasis on what is alive today (read and performed) in the Italian theater. Texts range from the Renaissance to the present. Mrs. Cottino-Jones

130. Advanced Grammar and Composition (Teaching). Lecture, three hours. A study in depth of the idiomatic phenomena of the language from both the grammatical and syntactical points of view.
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.
Mrs. Reynolds

M140. From Boccaccio to Basile (in English). (Same as Folklore M140.) Lecture, three hours. A study of the origins and the development of the Italian novella in its themes, in its structure, in its historical context, and in its European ramifications. Designed for students in other departments who wish to become acquainted with either the premises or the growth of similar literary genres. Also intended for students majoring in folklore and mythology, who are given an 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.

M158. Women in Italian Culture. (Same as Women's Studies M158.) Lecture, three hours. Designed with the intent of examining the role that women have played in Italian society. Concentration alternatively on the world of the medieval and Renaissance "matriarch" and on the "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 are 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. The 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 the 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 a 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 is graded by an ad hoc committee of faculty from the department, with the chair in charge.

199. Special Studies (2 to 4 units). Prerequisite: consent of instructor. A course of independent study for advanced undergraduates who wish to pursue a special research project under the direction and close supervision of a faculty member.

Graduate Courses

200A. Readings in Italian Literature. Lecture, three hours. Prerequisite: graduate standing. The literature of the generation dominated by the Franciscan movement, proceeding through the culture of Frederick II's court to the three classics of the 14th century — Dante, Petrarch, and Boccaccio. The early humanists, the postclassic generation, and the cultural booming under Lorenzo il Magnifico.
Mr. Chiappelli, Mrs. Cottino-Jones

200B. Readings in Italian Literature. Lecture, three hours. Prerequisites: course 200A, graduate standing. The literature of the High Renaissance of central Italy in its three most popular genres (lyric poetry, chivalric poem, and theater), proceeding through the counter-reformistic culture, especially of northern and southern Italy. The main Enlightenment figures and the cultural evolution stemming from them.
Mr. Betti, Mr. Chiappelli

200C. Readings in Italian Literature. Lecture, three hours. Prerequisites: course 200B, graduate standing. The literature of the Romantic era, proceeding through a study of the literary figures of the Italian "Risorgimento." The various "novecentisti" movements, the literature between the two wars, and the contemporary generation.
Mr. Betti, Mr. Cecchetti, Ms. Re

201. Bibliography and Methods of Research. Lecture, three hours. Mrs. Cottino-Jones

205A-205B. Methods of Literary Criticism. Lecture, three hours:

205A. Brief History of Literary Criticism.

205B. Discussion of Modern Critical Approaches. Mrs. Cottino-Jones

210A-210B-210C. Early Italian Literature. Lecture, three hours:

210A. The Origins of Italian Language and Early Texts. Mr. Tuttle

210B. The *Scuola Siciliana* and Early Poetry in Central and Northern Italy. Mr. Tuttle

210C. The *Dolce Stil Novo.*

212A. Theory of Textual Criticism. Prerequisite: graduate standing. A presentation and discussion of the methods to be employed in the preparation of a critical edition of a medieval and/or Renaissance literary text. Mr. Chiappelli

214A-214G. Italian Literature of the 14th Century. Lecture, three hours:

214A. Dante's *Vita Nuova* and *Rime.* Mr. Chiappelli

214B. *Convivio and De Vulgari Eloquentia.*

214C. The *Commedia* and the *Monarchia.* Mr. Chiappelli

214D. Petrarca. Mr. Chiappelli

214E. The *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. Mr. Chiappelli

215B. Writings of the Humanists.

215C. The Age of Lorenzo de' Medici and Poliziano. Mr. Betti

216A-216E. Italian Literature of the 16th Century. Lecture, three hours:

216A. Machiavelli. Mr. Chiappelli

216B. Ariosto.

216C. Bembo, Folengo, Aretino, and the Theater. Mrs. Cottino-Jones

216D. Prose (Castiglione, Della Casa, Guicciardini, Cellini).

216E. Tasso. Mr. Chiappelli

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. The Prose from Vico to Cesarotti. Mr. Betti

218B. Essayists and Autobiographical Writers. Mr. Betti

218C. The Theater, Especially Metastasio, Goldoni, C. Gozzi. Mr. Pasinetti

218D. Parini and the Poets of Arcadia. Mr. Pasinetti

218E. Alfieri. Mr. Betti

219A-219F. Italian Literature of the 19th Century. Lecture, three hours:

219A. Foscolo. Mr. Chiappelli

219B. Leopardi. Mr. Cecchetti

219C. Manzoni. Mr. Pasinetti

219D. Trends in Fiction before Verga. Mr. Betti

219E. Verga. Mr. Cecchetti

219F. Italian Literature at the Turn of the Century. Mr. Pasinetti

220A-220B-220C. Italian Literature of the 20th Century. Lecture, three hours:

220A. From D'Annunzio to Futurism and the Early Twenties. Mr. Cecchetti

220B. Contemporary Italian Poetry. Mr. Cecchetti

220C. Contemporary Italian Fiction. Mr. Pasinetti

M230A-M230B. Folk Tradition in Italian Literature. (Same as Folklore M230A-M230B.) Lecture, two hours.

250A-250D. Seminar on Dante. Seminar, three hours. Mr. Chiappelli

251. Seminar on Petrarch. Seminar, three hours. Mr. Chiappelli

252. Seminar on Boccaccio. Seminar, three hours. Mrs. Cottino-Jones

253A-253B-253C. Seminar on Chivalric Poetry in Italy. Seminar, three hours. The relationship between the genre and its French medieval sources, with a study of its evolution in Italy through Pulci, Boiardo, Ariosto, and Tasso. Mrs. Cottino-Jones

254. Seminar on Machiavelli. Seminar, three hours. Mr. Chiappelli

255A-255B. Seminar on the Baroque. Seminar, three hours. Mrs. Cottino-Jones

256A-256B. Seminar on the 18th Century. Seminar, three hours. Mr. Pasinetti

257A-257B. Seminar on Romanticism. Seminar, three hours. Mr. Pasinetti

258A-258B. Seminar on Contemporary Italian Literature. Seminar, three hours. Mr. Cecchetti

259A-259B-259C. Studies in the History of Italian Language:

259A. History of the Italian Language. Prerequisite: graduate standing. A historical survey of the development of the language from medieval times to the unification of the country (1861). *Questione della lingua,* general acceptance of Florentine speech, and its evolution into the national language. Mr. Tuttle

259B. The Structure of Modern Italian. Prerequisite: graduate standing. Various tendencies in modern and contemporary Italian. Foreign influences in today's Italian language. Relationship between the national language and the various dialects. Mr. Tuttle

259C. Italian Dialectology. The historical differentiation of the Italian dialects considered in its areal dimension. Specific geolinguistic problems and solutions illustrating the 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 the Teaching of 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. A teaching apprenticeship under the 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. The Teaching of Italian at the 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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. S/U grading.

596. Directed Individual Studies (4 to 8 units). May be repeated twice. S/U grading.

597. Preparation for Comprehensive Examinations (4 to 8 units). S/U grading.

599. Ph.D. Research and Writing (4 to 8 units). May be repeated. S/U grading.

Kinesiology

2834 Slichter Hall, (213) 825-3891

Professors

R. James Barnard, Ph.D.
Bryant J. Cratty, Ed.D.
V. Reggie Edgerton, Ph.D., *Chair*
Glen H. Egstrom, Ph.D.
Jack L. Feldman, Ph.D.
Gerald W. Gardner, Ph.D.
Louis J. Goldberg, D.D.S., Ph.D.
Jack F. Keogh, Ed.D.
Richard A. Schmidt, Ph.D.
Judith L. Smith, Ph.D.

Emeritus Professors

Serena E. Arnold, Ed.D.
Camille Brown, Ed.D.
Donald T. Handy, Ed.D.
Valerie V. Hunt, Ed.D.
Wayne W. Massey, Ph.D.
Ben W. Miller, Ph.D.
Norman P. Miller, Ed.D.
Laurence E. Morehouse, Ph.D.
Raymond A. Snyder, Ed.D.

Associate Professors

Robert J. Gregor, Ph.D.
Tara K. Scanlan, Ph.D.
Ronald F. Zernicke, Ph.D.
Marjorie E. Latchaw, Ph.D., *Emeritus*

Assistant Professors

Scott H. Chandler, Ph.D. *(Neuroscience)*
Arthur C. Vailas, Ph.D.

Lecturer

Dorothy Phillips, M.S.

Adjunct and Visiting Assistant Professors

Alan J. Garfinkel, Ph.D., *Adjunct*
Thomas P. Martin, Ph.D., *Visiting*

Scope and Objectives

Kinesiology is the study of the biochemical, morphological, and general physiological responses of the human to exercise and environmental conditions; the description of movement and the neuromuscular and biomechanical determinants of motor performance; and the development, acquisition, and modification of motor performance. The purpose of this study is intended to develop and integrate principles and concepts of human movement.

Bachelor of Science Degree

Pre-Kinesiology Major

All students intending to major in kinesiology are identified as pre-kinesiology majors until the premajor requirements have been satisfied. Transfer students with 80 or more units must have completed one year of general chemistry with laboratory in order to be admitted as pre-kinesiology majors.

The pre-kinesiology major requirements are Kinesiology 12A, 12B, 14; Chemistry 11A, 11B/11BL, 11C/11CL, 21, 23, 25; Biology 5 or 7; Physics 3A and 3B (or 6A and 6B, or 8A and 8C); one introductory statistics course; Psychology 10; and an additional course from one of the following departments: Anthropology, Psychology, or Sociology.

Premajor courses outside the department may be taken for a letter grade or on a P/NP basis; Kinesiology 12A, 12B, and 14 must be taken for a letter grade (certain certification and graduate programs also require letter grades for courses). All premajor 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.

The Student Affairs Office in 2834 Slichter Hall petitions you into the major after you complete the premajor courses.

If you are in the kinesiology major or premajor, you must confer with the departmental counselor on a regular basis. If you are interested in this major and are transferring from another college or university, you should consult with the departmental counselor at least six months prior to your expected enrollment date at UCLA. Call the Student Affairs Office for an appointment.

The Major

Required Core Courses: Kinesiology 120, 122, 124, 126.

A total of five upper division electives (20 units) is required. Although all five courses may be taken in kinesiology, three upper division courses (12 units) must be taken in the department. Courses 193, 196A-196B, and 400-level courses may not be applied toward this requirement. One or two of the five courses (up to eight units) may be taken in other departments related to your course of study. A list of approved extra-departmental courses is available in the Student Affairs Office.

A C average must be maintained in all upper division courses taken in the department. All upper division courses required for the major (including extra-departmental electives) must be taken for a letter grade.

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 3.5 GPA in upper division kinesiology courses, completion of the premajor courses, and identification of a sponsoring faculty adviser. After completion of all requirements and with the recommendation of the faculty adviser, the undergraduate affairs committee confers departmental honors at graduation.

Preparation for Graduate Study

Undergraduate students who plan to do doctoral studies in kinesiology are advised to complete Mathematics 3A and 3B. Students who wish to pursue doctoral studies in biomechanics must complete two full years of calculus. Students interested in graduate study (master's degree or Ph.D.) in areas of physiological kinesiology must complete two full years of chemistry (11A, 11B/11BL, 11C/11CL, 21, 23, 25). Consult the Student Affairs Office for additional information.

Graduate Study

The department offers Master of Science and Doctor of Philosophy degrees in the following fields:

(1) Exercise physiology — cardiovascular adaptations of exercise, environmental factors influencing work capacity, neuromuscular and metabolic adaptations to exercise, and neuromotor control.

(2) Biomechanical determinants of motor performance.

(3) Motor control, perceptual motor development, and social/psychological determinants of human motor performance.

When applying for graduate work, you should specify an interest in one of these general fields.

Admission

Applicants for graduate study are expected to have completed an undergraduate degree in kinesiology or the equivalent as outlined below under the master's and doctoral programs. A grade-point average of at least 3.0 (B) in all upper division undergraduate coursework is required. A departmental faculty committee considers applicants on the following bases: (1) prior scholastic performance, (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) specific courses in the department to be taken and one or two departmental faculty members whose research area parallels the study interest.

A list of faculty names and research interests is available from the Department of Kinesiology, 2834 Slichter Hall, UCLA, Los Angeles, CA 90024. Applicants are encouraged to communicate directly with the faculty, and personal interviews are encouraged.

Aptitude tests, including the Graduate Record Examination (GRE) or Miller's Analogies, are not required but may be submitted for consideration.

Applications for all quarters must be submitted by Fall Quarter deadlines, since applications for all quarters are reviewed only in January/February each year.

Master of Science Degree

Applicants without an undergraduate degree in kinesiology will receive serious consideration, particularly if undergraduate or other experiences provide a strong relationship to kinesiology. However, applicants are expected to complete minimum undergraduate preparation prior to graduate work. Completion of course deficiencies may take as much as an additional year of coursework, which may not be applied toward the master's degree. Required undergraduate preparation is equivalent to the following: (1) four required courses selected from cellular biology, inorganic chemistry, organic chemistry, introductory psychology, physics (mechanics), physics (electricity), calculus (differential), and calculus (integral), (2) one course each in statistics, human anatomy, and human physiology required for the B.S. degree in Kinesiology, (3) the four kinesiology core courses required for the B.S. degree, and (4) one elective from the proposed area of graduate study. Additionally, applicants in the field of exercise physiology should have completed one year of inorganic chemistry, one year of organic chemistry/biochemistry, and two quarters of calculus.

Course Requirements

The Master of Science in Kinesiology requires nine courses: five graduate-level kinesiology courses, two courses from a related field, one second-level statistics or research design course, and one other course from either kinesiology or a related field.

A minimum of six of the nine courses must be graduate-level (200) courses, toward which one 596 course may be applied. Lists of approved related field and statistics or research design courses may be obtained from the department.

A total of eight units of Kinesiology 596 may be taken for credit; only one course (four units) may be applied toward the minimum course requirement for the master's degree. Courses 597 and 598 may not be applied toward any of the course requirements for the degree. There is no limit on the number of times a master's student may enroll in course 597 or 598.

Thesis Plan

Students who elect the thesis plan for the master's degree must report the results of an original research investigation. Under the guidance of the thesis committee, you must pro-

pose 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 the competency of the candidate.

If you fail the comprehensive examination, you may not repeat it until the following quarter. Only one repetition is allowed.

Ph.D. Degree

Doctoral students are expected to have the basic preparation coursework in kinesiology required of master's students. Six of the eight preparation courses required for the M.S. are required of doctoral students. You must show a solid educational background in one of three general fields of kinesiology, and undergraduate and prior graduate work is evaluated in terms of your declared field of interest.

Major Fields or Subdisciplines

From the three general content fields of the department's instructional and research programs, six *areas of concentration* have been identified: (1) biomechanics; (2) cardiorespiratory function and adaptation; (3) movement performance and learning; (4) musculoskeletal function and adaptation; (5) neural control of movement; (6) social psychological aspects of human movement.

You select one of the six areas of concentration as a major and one area as a minor. These areas are expected to relate to your proposed dissertation problem.

Course Requirements

Fourteen courses are specified for the doctoral degree, some of which may be satisfied by prior graduate work. Selection of all courses must be approved by the guidance committee and is determined in part by the selection of major and minor areas of concentration.

A total of eight departmental courses is required, two of which must be seminars. One seminar course requirement may be met by enrolling in two quarters of Kinesiology 290. Two 596 courses may be applied toward the degree requirements.

A minimum of three courses or 12 units in a related field outside the department is required. An approved list of courses in anatomy, biological chemistry, biology, biomathematics, education, engineering, neuroscience, pharmacology, physiology, psychology, public health, and radiological sciences is maintained by the department. A fourth course, either departmental or in a related field outside the department, and two department-approved advanced statistics courses are also required.

First-Year Doctoral Review

After completion of three quarters of coursework, the graduate affairs committee conducts a doctoral review to determine whether you (1) continue in the doctoral program, (2) enter the master's program, or (3) discontinue graduate study in the department. The review must be completed by the end of the fourth quarter of graduate work as a doctoral student.

Teaching Experience

Each candidate must complete two quarters as a teaching assistant. All teaching evaluations become a permanent part of your departmental record.

Qualifying Examinations

Each doctoral student must take two written qualifying examinations: one in a major area and one in a minor area. Written qualifying examinations may be taken when the student and guidance committee consider appropriate. These examinations, administered in Fall and Spring Quarters, are scored (1) passed at the Ph.D. level of achievement, (2) passed at the master's level of achievement, or (3) failed. To continue in the doctoral program, you must pass each examination at the Ph.D. level of achievement. If you fail to do so, you may (1) complete the master's degree, (2) discontinue graduate work in the department, or (3) reschedule the area examinations once at the discretion of the guidance committee.

After successfully passing the departmental written qualifying examinations, a University Oral Qualifying Examination is conducted by the doctoral committee. Normally, the examination is held the quarter following the completion of written examinations, all coursework, and two quarters of research work with your major professor. If you do not pass, the examination may be rescheduled at the discretion of the doctoral committee.

After advancement to candidacy, you must complete and submit a dissertation which meets the approval of the doctoral committee.

Final Oral Examination

A final oral examination is generally required, although the members of the doctoral committee who are to approve the dissertation have the option to waive it in exceptional cases. The major emphasis in this examination is a defense of the dissertation.

Lower Division Courses

12A. Introduction to Human Physiology. (Formerly numbered 12.) Lecture, three hours; laboratory, 90 minutes. Prerequisites: Biology 5 or 7, Chemistry 25, Physics 3B. An introduction to human physiology. Topics include cell and muscle physiology, cellular neurophysiology, and endocrinology.
Mr. Chandler, Mr. Vailas (W)

12B. Introduction to Human Physiology. (Formerly numbered 12.) Lecture, three hours; laboratory, 90 minutes. Prerequisite: course 12A. An introduction to human physiology. Topics include respiration and cardiovascular, renal, and gastrointestinal physiology. Mr. Barnard, Mr. Gardner (F,Sp)

13. Introduction to Human Anatomy (6 units). Lecture, four hours; laboratory, four hours. Not intended for kinesiology majors; a combination of courses 13 and 14 is equivalent to nine units. A structural survey of the human body, including the skeletomuscular, nervous, circulatory, respiratory, digestive, and genitourinary systems. Laboratory includes examination of human cadaver specimens. Ms. Phillips (W)

14. Human Neuromuscular Anatomy (6 units). Lecture, four hours; laboratory, four hours. A thorough study of the skeletal, articular, muscular, and nervous systems. Special emphasis on relating these body structures to human movement capabilities. Laboratory includes examination of prosected human cadaver specimens. Ms. Phillips (F,Sp)

Upper Division Courses

115. Aquatic Kinesiology. Lecture, three hours; laboratory, two hours. Prerequisite: course 124. A study of man's adaptation to the aquatic environment.
Mr. Egstrom (F)

116. Exercise and Cardiovascular Function. Prerequisites: courses 120, 122, 124, 126. A consideration of the acute and chronic effects of exercise in the diagnosis, prevention, and treatment of cardiovascular disorders and physical fitness.
Mr. Barnard, Mr. Gardner (F)

117. Conditioning for Maximum Performance. Prerequisite: course 124. Study of factors and conditions accelerating and retarding levels of performance and work under various physiological and environmental conditions. Mr. Egstrom (W)

118. Cellular Dynamics of Exercise. Prerequisites: courses 124, 126. Cellular responses to acute and chronic exercise. Mr. Martin (W)

120. Behavioral Bases of Movement (6 units). Lecture, four hours; laboratory, three hours. Prerequisite: completion of premajor coursework (except for course 12B). An examination of motor performance and motor learning and the influence of selected psychological variables on human movement.
Ms. Scanlan, Mr. Schmidt (F,Sp)

122. Biomechanical Bases of Movement (6 units). Lecture, four hours; laboratory, three hours. Prerequisite: completion of premajor coursework (except for course 12B). Kinematic and kinetic principles underlying human movement, focusing on the human neuromuscular and skeletal systems.
Mr. Gregor, Mr. Zernicke (W)

124. Cardiorespiratory Bases and Environmental Factors Affecting Movement (6 units). Lecture, four hours; laboratory, three hours. Prerequisite: completion of premajor coursework. Response of the cardiovascular and respiratory systems to acute and chronic exercise, environmental stress, and adaptation. Mr. Barnard, Mr. Egstrom, Mr. Gardner (W)

126. Neuromuscular and Metabolic Bases of Movement (6 units). Lecture, four hours; laboratory, three hours. Prerequisite: completion of premajor coursework. Metabolic, muscular, and neural processes underlying movement and adaptation to exercise.
Mr. Chandler, Mr. Edgerton, Ms. Smith (F,Sp)

C132. Biomechanics of Musculoskeletal Injury. (Formerly numbered 132.) Prerequisites: course 122, consent of instructor. Anatomical, physiological, and mechanical characteristics of cartilaginous, fibrous, and bony tissues in normal and abnormal stress situations. Analysis of connective tissue growth processes, normal physiology, and repair mechanisms in conjunction with musculoskeletal injuries and effects of exercise and physical activity. Concurrently scheduled with course C232. Mr. Zernicke (F)

134. Electromyographic Assessment. (Formerly numbered 134A.) Lecture, two hours; laboratory, three hours. Prerequisite: course 122. Techniques of electromyographic analysis combining theoretical aspects with laboratory experiences. Mr. Gregor (Sp)

139. Dissection Anatomy. Lecture, two hours; laboratory, six hours. Prerequisites: course 122, consent of instructor. Study and dissection of upper and lower extremities of human cadavers; dissection of thorax and abdomen limited to musculature and neurovascular supply. Ms. Phillips (F,Sp)

140. Mechanisms of Neuromuscular Control. Prerequisite: course 126. Recommended: Psychology 15 or 115. Advanced topics in the neurophysiology of the sensorimotor systems. Mr. Chandler, Ms. Smith (W)

C153. Acquisition of Motor Skills. Prerequisite: course 120. An investigation into the principles of the acquisition of motor skills, such as those applicable to industry, musical performance, or sport. Major topic areas include methodological considerations, the structure of practice sessions, feedback and knowledge of results, theories of motor learning, and retention of skills. May be concurrently scheduled with course C253. Mr. Schmidt (W)

C156. Motor Behavior and Motor Control. Prerequisite: course 120. An analysis of primarily human movement behavior and control, with emphasis on a behavioral level of analysis. Topic areas include methodological issues, open- and closed-loop control, and individual differences. May be concurrently scheduled with course C256. Mr. Schmidt

160. Human Movement Development. Prerequisite: course 120. Movement development throughout life, with emphasis on individual and societal determinants. Mr. Cratty, Mr. Keogh (F,W)

165. Perceptual Motor Education. Prerequisites: courses 120, 160. Movement problems of the minimally neurologically handicapped, with emphasis on the clumsy child syndrome. Mr. Cratty, Mr. Keogh (W)

C178. Group Dynamics in Sport. (Formerly numbered 178.) Prerequisite: course 120 or consent of instructor. Examination of group dynamics in sport. Topics include group productivity, group structure, leadership, motivational factors, cohesion, conflict. May be concurrently scheduled with course C278. Mr. Cratty, Ms. Scanlan (F)

191A-191Z. Proseminars in Kinesiology. Prerequisites: upper division standing, consent of instructor. Limited to 15 students. Advanced study of special topics. May be repeated for credit with topic change.

193. Field Studies in Kinesiology (2 units). Lecture, one hour; fieldwork, six hours. Prerequisites: courses 120, 122, 124, 126, or equivalent, consent of instructor via course application. Supervised field studies in specific careers related to kinesiology. May be repeated once but may not be applied toward the major. P/NP grading. Mr. Keogh (F,W,Sp)

196A-196B. Laboratory Practicum in Kinesiology (2 units each). Laboratory, four hours. Prerequisites or corequisites: course 139, consent of instructor. Supervised practicum and training for advanced students who serve as undergraduate assistants in the basic anatomy course in the preparation of laboratory materials and innovative projects. May not be applied toward the major.

197A-197Z. Variable Topics in Kinesiology. Prerequisite: consent of instructor. A variable topics course which covers specific subjects of special interest to undergraduate students. Eight units may be applied toward the B.S. degree requirements.

199A-199ZZ. Special Studies in Kinesiology (2 or 4 units). Prerequisites: kinesiology major with advanced junior standing and a 3.0 GPA in the major, or senior standing, and consent of instructor and department chair. Directed independent research with a faculty member (identified in course title by two initials). A course application (available in 2834 Slichter Hall) must be submitted to the chair on or before the first day of class. A total of eight units of 199 and 199H may be applied toward the B.S. degree requirements.

199HA. Honors Thesis. (Formerly numbered 199HA-199HZZ.) Directed independent research for departmental honors with a faculty member, involving definition of a research topic and extensive reading and research in the field of the proposed honors thesis. In Progress grading.

199HB. Honors Thesis. (Formerly numbered 199HA-199HZZ.) Prerequisite: course 199HA. Continued reading and research that culminates in a final honors thesis. A total of eight units of 199H may be applied toward the major and the B.S. degree requirements.

Graduate Courses

206. Metabolism of Organ Systems Affected by Exercise. Prerequisite: Chemistry 23. The key regulatory mechanisms of metabolism involved in the exercise response and adaptation. Mr. Vailas

207. Respiratory Function during Exercise. Prerequisite: course 124. Topics include the acute and chronic effects of exercise on pulmonary gas exchange, gas transport and ventilatory control, and limiting factors to aerobic function. Mr. Gardner

208. Neuromuscular and Metabolic Factors in Exercise. Prerequisite: course 118 or consent of instructor. Fundamental aspects of skeletal muscle contraction and metabolic demands under various exercise and training conditions, including neural and endocrine mechanisms potentially involved in inducing specific training effects on skeletal muscle, liver, kidney, gastrointestinal tract, and brain. Mr. Edgerton

209. Environmental Factors in Exercise. Prerequisites: courses 122, 124, and 126, or consent of instructor. Environmental pressure of high altitude and underwater diving, as well as temperature factors, as they affect work performance; adaptation to unusual environments. Mr. Egstrom (Sp)

211. Exercise Cardiovascular Physiology. Prerequisite: Physiology 101. Attention to cardiovascular adaptations to acute exercise as well as adaptations associated with regular exercise training. Mr. Barnard (Sp)

212. Cardiovascular Research Techniques. Lecture, one hour; laboratory, four hours. Prerequisites: course 211, consent of instructor. Experience in working with experimental animals, in conducting surgery, and in understanding the use of flow meters, radioactive microspheres, pressure transducers, and other techniques commonly used in cardiovascular research. Mr. Barnard

221. Underwater Kinesiology. Prerequisites: courses 122 and 124, or consent of instructor. Biomechanical, physiological, methodological, and behavioral limitations to underwater activities. Mr. Egstrom

230A. Muscle Dynamics. Prerequisite: course 122. Recommended: course 134. 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 (F)

230B. Musculoskeletal Mechanics. Prerequisites: course 122, Mathematics 3A, 3B. Mechanical parameters of the moving human musculoskeletal system, including the use of cinematographic, force platform, and digital computer techniques. Topics include biostatistics, biodynamics, and empirical data modeling. Mr. Zernicke (W)

C232. Biomechanics of Musculoskeletal Injury. Prerequisites: course 122, consent of instructor. Anatomical, physiological, and mechanical characteristics of cartilaginous, fibrous, and bony tissues in normal and abnormal stress situations. Analysis of connective tissue growth processes, normal physiology, and repair mechanisms in conjunction with musculoskeletal injuries and effects of exercise and physical activity. Concurrently scheduled with course C132. Mr. Zernicke (F)

235A-235B. Dynamical Systems Modeling (2 units, 4 units). Prerequisite: consent of instructor. Concepts of dynamical systems as applied to systems studied by biomechanics, motor control, and behavioral theories. Six units may be taken for credit; however, only four units may be applied toward the minimum graduate course requirement. In Progress grading. Mr. Garfinkel

240. Neural Systems for Motor Control. Prerequisites: course 140, Psychology 115 (or equivalent). Proprioception, the skeletomotor and fusimotor systems and their control by spinal reflexes and supraspinal centers, including the cerebellum, basal ganglia, and cerebral cortices. Ms. Smith (Sp)

241. Theories of Voluntary Motor Control. Prerequisites: courses 240, 250. Exploration and discussion of neural control system for voluntary movement, including alpha-gamma linkage and closed versus open loops. Some attention to neural models for motor learning and memory. Ms. Smith

M243. Brainstem Control of Rhythmical Movements. (Same as Anatomy M226; lecture is the same as Oral Biology 207, which is two units only.) Lecture, two hours; discussion, two hours. Discussion of the central nervous system mechanisms which coordinate and control the contraction patterns of the muscles which are involved in behaviors such as suckling, chewing, swallowing, speech, respiration, and locomotion. Emphasis on the interaction among brainstem reflexes, pattern generators, and "voluntary" control centers. Mr. Chandler, Mr. Goldberg

250. Behavioral Approach to Motor Control. Prerequisites: course 120, consent of instructor. An information processing approach to skill acquisition and performance. Particular emphasis on current theories of motor control from the behavioral literature.

C253. Acquisition of Motor Skills. Prerequisite: course 120. An investigation into the principles of the acquisition of motor skills, such as those applicable to industry, musical performance, or sport. Major topic areas include methodological considerations, the structure of practice sessions, feedback and knowledge of results, theories of motor learning, and retention of skills. May be concurrently scheduled with course C153. Mr. Schmidt (W)

C256. Motor Behavior and Motor Control. Prerequisite: course 120. An analysis of primarily human movement behavior and control, with emphasis on a behavioral level of analysis. Topic areas include methodological issues, open- and closed-loop control, and individual differences. May be concurrently scheduled with course C156. Mr. Schmidt

260. Motor Development. Prerequisite: course 160. Critical analysis of behavioral approaches in the formulation of motor development theory. Mr. Keogh

262. Movement Disorders in Children. Prerequisite: course 160 or 165 or consent of instructor. Current research in developmental and behavioral aspects of movement disorders in children. Topics include early identification and intervention, perceptual and cognitive relationships, and evaluation of movement training programs. Mr. Cratty, Mr. Keogh

272. Motivation in Movement Contexts. Prerequisites: course 120, one course in psychology, and/or consent of instructor. Examination of the social, cultural, and psychological antecedents of achievement behavior in movement contexts. Current theories of achievement motivation, related research, and pertinent issues specific to physical activity; review of methodologies and motivation intervention techniques. Specific attention to sex, age, and environment-related influences on motivation and achievement patterns. Ms. Scanlan

M273. Social Psychological Aspects of Competitive Youth Sport. (Formerly numbered 273.) (Same as Psychology M234.) Prerequisite: course 120 or consent of instructor. Review of research concerning the 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

C278. Group Dynamics in Sport. Prerequisite: course 120 or consent of instructor. Examination of group dynamics in sport. Topics include group productivity, group structure, leadership, motivational factors, cohesion, conflict. May be concurrently scheduled with course C178. Mr. Cratty, Ms. Scanlan (F)

290. Research Issues in Kinesiology (2 units). Seminar. Prerequisite: consent of instructor. Discussion of current research issues. Topics selected by participants in the class. Two 290 courses may be used to satisfy one seminar course requirement for the graduate program.

291A-291B-291C. Seminars in Cardiorespiratory Function and Adaptation (2 to 4 units each). Prerequisites: courses 207 and 208, or consent of instructor. Selected topics on cardiorespiratory function and adaptation. Students are required to present a two-hour seminar.

292A-292B-292C. Seminars in Biomechanics (2 to 4 units each). Prerequisites: courses 230A, 230B, consent of instructors. Selected topics in biomechanics of movement. Students are required to present a two-hour seminar.

293A-293B-293C. Seminars in Musculoskeletal Function and Adaptation (2 to 4 units each). Prerequisites: courses 118 and 208, or consent of instructor. Selected topics on the muscular determinants of movement, the metabolic aspects of exercise, and the mechanics of connective tissue. Students are required to present a two-hour seminar.

294A-294B-294C. Seminars in Neural Control of Movement (2 to 4 units each). Prerequisites: courses 140 and either 240 or M243. Selected topics on the neural determinants of movement behavior. Students are required to present a two-hour seminar.

295A-295B-295C. Seminars in Movement Performance and Learning (2 to 4 units each). Prerequisites: courses 250 or C253 and C256, or consent of instructor. Selected topics on current issues in acquisition and control of human movement. Students are required to present a two-hour seminar.

297A-297B-297C. Seminars in Social Psychological Aspects of Human Movement (2 to 4 units each). Prerequisite: course 272 or M273 or consent of instructor. Selected topics on current issues in the social psychological aspects of human movement. Students are required to present a two-hour seminar. Ms. Scanlan

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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 Kinesiology (2 units). Prerequisite: consent of instructor. Required of all teaching assistants. Supervised practicum in teaching laboratory courses in kinesiology; 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). Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. S/U grading.

596. Individual Studies for Graduate Students (2 to 8 units). A petition signed by the faculty sponsor, graduate adviser, and graduate affairs committee chair must be submitted prior to the second week of class. Eight units may be taken for credit; however, only four units may be applied toward the minimum of five graduate courses required for the M.S. Eight units may be applied toward the eight kinesiology courses required for the Ph.D.

597. Preparation for M.S. Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 16 units). To be arranged with faculty member serving as the student's comprehensive examination chair or doctoral committee chair. Course section is identified by a two-letter code using faculty member's initials (see department for code). May not be applied toward the 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). To be arranged with faculty member serving as the student's thesis committee chair. Course section is identified by a two-letter code using faculty member's initials (see department for code). May not be applied toward the 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). Course section is identified by a two-letter code using faculty member's initials (see department for code). May not be applied toward the Ph.D. course requirements. May be repeated as necessary. S/U grading.

Latin American Studies
(Interdepartmental)

10347 Bunche Hall, (213) 206-6571

Professors

Rodolfo Alvarez, Ph.D. *(Sociology)*
Shirley L. Arora, Ph.D. *(Spanish)*
Rubén A. Benítez, Ph.D. *(Spanish)*
Charles F. Bennett, Ph.D. *(Geography)*
C. Rainer Berger, Ph.D. *(Anthropology, Geography, and Geophysics)*
Daniel M. Berry, Ph.D. *(Computer Science)*
William O. Bright, Ph.D. *(Linguistics and Anthropology)*
E. Bradford Burns, Ph.D. *(History), Acting Chair, B.A. Committee*
Leland S. Burns, Ph.D. *(Architecture and Urban Planning)*
Robert N. Burr, Ph.D. *(History)*
Bertram Bussell, Ph.D. *(Computer Science)*
Alfonso F. Cardenas, Ph.D. *(Computer Science)*
Martin L. Cody, Ph.D. *(Biology)*
Roger Detels, M.D., M.S. *(Public Health)*
Christopher B. Donnan, Ph.D. *(Anthropology)*
Elsie Dunin, M.A. *(Dance)*
David K. Eiteman, Ph.D. *(Management)*
Walter A. Fogel, Ph.D. *(Management)*
Howard E. Freeman, Ph.D. *(Sociology)*
Ralph R. Frerichs, D.V.M., Dr.P.H. *(Public Health)*
John Friedmann, Ph.D. *(Architecture and Urban Planning)*
Mario Gerla, Ph.D. *(Computer Science)*
Juan Gómez-Quiñones, Ph.D. *(History)*
Edward Gonzalez, Ph.D. *(Political Science)*
Patricia M. Greenfield, Ph.D. *(Psychology)*
John N. Hawkins, Ph.D. *(Education)*
Claude L. Hulet, Ph.D. *(Portuguese)*
Derrick B. Jelliffe, M.D. *(Public Health)*
Allen W. Johnson, Ph.D. *(Anthropology)*
Marvin Karno, M.D., *in Residence (Psychiatry)*
John G. Kennedy, Ph.D. *(Anthropology and Psychiatry)*
David M. Kunzle, Ph.D. *(Art History)*
James Lockhart, Ph.D. *(History)*
O. Raynal Lunt, Ph.D. *(Biology)*
Gerardo Luzuriaga, Ph.D. *(Spanish), Chair, M.A. Committee*
Robert Hal Mason, Ph.D. *(Management)*
Clement W. Meighan, Ph.D. *(Anthropology)*
Frank G. Mittelbach, M.A. *(Management)*
Pamela L. Munro, Ph.D. *(Linguistics)*
Alfred K. Neumann, M.D. *(Public Health)*
Henry B. Nicholson, Ph.D. *(Anthropology)*
Park S. Nobel, Ph.D. *(Biology)*
Antony R. Orme, Ph.D. *(Geography)*
C. P. Otero, Ph.D. *(Spanish and Romance Linguistics)*
José Miguel Oviedo, Ph.D. *(Spanish)*
Amado M. Padilla, Ph.D. *(Psychology)*
Richard L. Perrine, Ph.D. *(Civil Engineering)*
Jorge R. Preloran, B.A. *(Theater, Film, and Television)*
Jonathan D. Sauer, Ph.D. *(Geography)*
Carol Scothorn, M.A. *(Dance)*
Allegra Snyder, M.A. *(Dance)*
Edward W. Soja, Ph.D. *(Architecture and Urban Planning)*
Robert M. Stevenson, Ph.D. *(Music)*
Norman J. W. Thrower, Ph.D. *(Geography)*
Hartmut Walter, Ph.D. *(Geography)*
Louis Jolyon West, M.D. *(Psychiatry)*
Johannes Wilbert, Ph.D. *(Anthropology)*
James W. Wilkie, Ph.D. *(History)*
Telford H. Work, M.D., M.P.H. *(Public Health)*
Joe Yamamoto, M.D., *in Residence (Psychiatry)*
Maurice Zeitlin, Ph.D. *(Sociology)*

Emeritus Professors

Lester Breslow, M.D., M.P.H. *(Public Health)*
Henry J. Bruman, Ph.D. *(Geography)*
Thomas R. Howell, Ph.D. *(Biology)*
Frederick C. Kintzer, Ed.D. *(Education)*
Mildred E. Mathias, Ph.D. *(Biology)*
Russell R. O'Neill, Ph.D. *(Mechanical, Aerospace, and Nuclear Engineering)*
Stanley L. Robe, Ph.D. *(Spanish)*
Milton I. Roemer, M.D., M.P.H. *(Public Health)*
Charles A. Schroeder, Ph.D. *(Biology)*
Robert M. Williams, Ph.D. *(Management)*

Associate Professors

Paul R. Abramson, Ph.D. *(Psychology)*
Theodore A. Andersen, Ph.D. *(Management)*
George D. Bedell, Ph.D. *(Linguistics)*
Albert Chang, M.D., M.P.H. *(Public Health)*
E. Mayone Dias, Ph.D. *(Spanish and Portuguese)*
Timothy Earle, Ph.D. *(Anthropology)*
Sebastian Edwards, Ph.D. *(Economics)*
Leobardo Estrada, Ph.D. *(Architecture and Urban Planning)*
Teshome H. Gabriel, Ph.D. *(Theater, Film, and Television)*
Henry A. Hespenheide, Ph.D. *(Biology)*
Robert A. Hill, M.Sc. *(History)*
Cecelia F. Klein, Ph.D. *(Art History)*
David E. López, Ph.D. *(Sociology)*
Alfred E. Osborne, Jr., Ph.D. *(Management)*
David O'Shea, Ph.D. *(Education and Sociology)*
Susan Plann, Ph.D. *(Spanish)*

A. Carlos Quícoli, Ph.D. *(Portuguese and Romance Linguistics)*
Dwight Read, Ph.D. *(Anthropology)*
Richard M. Reeve, Ph.D. *(Spanish)*
Hans Schöllhammer, D.B.A. *(Management)*
Susan C. Scrimshaw, Ph.D. *(Public Health and Anthropology)*
A. John Skirius, Ph.D. *(Spanish)*
Concepción Valadez, Ph.D. *(Education)*
Simon González, Ed.D., *Emeritus (Education)*

Assistant Professors

Carole H. Browner, Ph.D., *in Residence (Psychiatry)*
Donald G. Buth, Ph.D. *(Biology)*
John W. Du Bois, Ph.D. *(Linguistics)*
Margaret FitzSimmons, Ph.D. *(Architecture and Urban Planning)*
Jeffry A. Frieden, Ph.D. *(Political Science)*
Barbara Geddes, M.A., *Acting (Political Science)*
Rebecca Morales, M.A. *(Architecture and Urban Planning)*
Sylvia Rodríguez, Ph.D. *(Anthropology)*
Michael Storper, Ph.D. *(Architecture and Urban Planning)*

Lecturers

José M. Cruz-Salvadores, M.A. *(Spanish)*
Ludwig Lauerhass, Ph.D. *(History)*
Linda Rodríguez, Ph.D. *(History)*
George L. Voyt, J.D. *(Spanish)*

Visiting Associate Professor

Jorge Schement, Ph.D. *(Library and Information Science)*

Visiting Assistant Professor

Susanna B. Hecht, Ph.D. *(Architecture and Urban Planning)*

Visiting Lecturers

Clifford A. Behrens, Ph.D. *(Anthropology)*
Jeffrey Bortz, Ph.D. *(History)*
Emilio Pulido-Huizar, B.A.C. *(Dance)*
Romulus E. Zamora, M.F.A. *(Theater, Film, and Television)*

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) students 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 science or language; and (4) students preparing for advanced academic study of Latin America.

Preparation for the Major

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 is designed for students with a background in Spanish. An indigenous language of Latin America 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 Portuguese M44; Art History 55 or Music 81K and Dance 73B.

Core Area: Ten upper division courses from the approved list distributed as follows:

(1) *Core Concentration:* Five courses from literature and folklore or fine 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 Elitelore

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. The 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 the Study of Literature: Prose

119B. Introduction to the Study of Literature: Poetry and Drama

199. Special Studies

(2) Fine Arts

Art History (Art, Design, and Art History) C117A. Advanced Studies in Pre-Columbian Art: Mexico

C117B. Advanced Studies in Pre-Columbian Art: Central America

C117C. Advanced Studies in Pre-Columbian Art: The Andes

118B. The Arts of Pre-Columbian America

Dance 173B. Dance of Mexico

183A. Dance in Latin America

Motion Picture/Television (Theater, Film, and Television) 106C. History of African, Asian, and Latin American Film

Music 131A-131B. Music of Hispanic America

157. Music of Brazil

Theory and Methods

Anthropology *118A, 118B. Museum Studies

*133R. Aesthetic Anthropology

*137. Ethnography on Film

Art History (Art, Design, and Art History) *199. Special Studies in Art

Dance *199. Special Studies in Dance

Motion Picture/Television (Theater, Film, and Television) 199. Special Studies in Theater Arts

Music *M180. Analytical Approaches to Folk Music

*C190A-C190B. Proseminar in Ethnomusicology

*199. Special Studies in Music

(3) Linguistics

Portuguese (Spanish and Portuguese) 100A. Phonology and Morphology

*100B. Syntax

*M118A. The History of Portuguese and Spanish: Phonology

*M118B. The History of Portuguese and Spanish: Morphology and Syntax

Spanish (Spanish and Portuguese) *100A. Introduction to the Study of Spanish Grammar: Phonology and Morphology

*100B. Introduction to the Study of Spanish Grammar: Syntax

*115. Applied Linguistics

*M118A. The History of Portuguese and Spanish: Phonology

*M118B. The History of Portuguese and Spanish: Morphology and Syntax

*119A. Introduction to the Study of Literature: Prose

*119B. Introduction to the Study of Literature: Poetry and Drama

*170C. Senior Honors Seminar: Topics in Hispanic Linguistics

Theory and Methods

Anthropology *143A, 143B. Field Methods in Linguistic Anthropology

Linguistics *100. Introduction to Linguistics

*103. Introduction to General Phonetics

*110. Introduction to Historical Linguistics

*120A. Linguistic Analysis: Phonology

*120B. Linguistic Analysis: Grammar

*164. Modern Theories of Language

*C165A. Linguistic Theory: Phonology

*C165B. Linguistic Theory: Grammar

*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

Folklore and Mythology *118. Folk Art and Technology

Latin American Studies 197. Interdisciplinary Topics in Latin American Studies

199. Special Studies in Latin American Studies

Motion Picture/Television (Theater, Film, and Television) 112. Film and Social Change

Music *M154A-M154B. The Afro-American Musical Heritage

Portuguese (Spanish and Portuguese) 140. Portuguese, Brazilian, and African Literature in Translation

Spanish (Spanish and Portuguese) 160B. Hispanic Literatures in Translation: Spanish America and Brazil

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*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.

Core Area: Ten upper division courses from the approved list 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

173P. Cultures of Middle America

173Q. Latin American Communities

174P. Ethnography of South American Indians

*174Q. Ethnology of South American Indians

Sociology 131. Latin American Societies

Theory and Methods

Anthropology *115P. Archaeological Field Training

*115Q. Archaeological Research Techniques

*115R. Strategy of Archaeology

116P. Laboratory Analysis in Archaeology

*M116Q. Dating Techniques in Environmental Sciences and Archaeology

*118A, 118B. Museum Studies

*136P. Ethnology: Field Training

*M136Q. A Laboratory for Naturalistic Observations: Developing Skills and Techniques

*137. Ethnography on Film

*138. Methods and Techniques of Ethnohistory

*186A-186B. Quantitative Methods and Models in Anthropology

*199. Special Studies in Anthropology

Sociology *109. Introduction to Sociological Research Methods

*115. Experimentation and Laboratory Methodology in Sociology

*116. 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 Seminar: Applications of Economic Theory

*M135. Economic Models of Public Choice

*199. Special Studies in Economics

Management *197. Special Topics in Management

(3) History

History 165A-165B. Colonial Latin America

165C. Indians of Colonial Mexico

166. Latin America in the 19th Century

167A-167B-167C. Latin America in the 20th Century

168. History of Latin American International Relations

169. Latin American Elitelore

170A. Latin American Cultural History

170B. The Classic Travel Accounts of Latin America since 1735

171. The Mexican Revolution since 1910

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 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. The Statistical Analysis of Political Data

*104A-104B. Introduction to Survey Research

*M105. Economic Models of Public Choice

*119A-119Z. Special Studies in Political Theory

*C137A-137B. International Relations Theory

*146. Political Behavior Analysis

*168S. Comparative Political Analysis

(5) Geography

Geography 121. Conservation of Resources: Underdeveloped World

*128. The World's Ecosystems: Problems and Issues

*142. Population Geography

181. Middle America

182A. Spanish South America

182B. Brazil

*199. Special Study

Theory and Methods

Geography *171. Quantitative Analysis

(6) Electives

Anthropology *132. Technology and Environment

*134. Personality and Cultural Systems: Enculturation

*150. Comparative Society

*153A-153B. Production and Exchange in Traditional Societies

*161. Development Anthropology

*M163. Women in Culture and Society

*167. Urban Anthropology

*M168. Health in Culture and Society

Economics *120. Introduction to Urban and Regional Economics

*121. Urban Economic Analysis

*180. Comparative Economic Systems

Geography *108. World Vegetation

*129. Problems of the Environment: Seminar

*140. Political Geography

*148. Economic Geography

*150. Urban Geography

*152. World Cities

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

*183. Administration of International Agencies and Programs

*188A. Comparative Public Administration

*188B. Comparative Urban Government

*191. Urban and Regional Planning and Development

Sociology *120. Social Change

*123. Social Stratification

*126. Social Demography

*140. Political Sociology

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*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 or Geography 5; Mathematics 50; Computer Science 10S.

Core Area: Ten upper division courses from the approved list 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

Geography 121. Conservation of Resources: Underdeveloped World

128. The World's Ecosystems: Problems and Issues

*142. Population Geography

181. Middle America

182A. Spanish South America

182B. Brazil

*199. Special Study

Public Health M115. Disease Problems of Socioeconomic and Political Impact in Latin America

174E. Health, Disease, and Health Services in Latin America

*186. The World's Population and Food

Theory and Methods

Anthropology *186A-186B. Quantitative Methods and Models in Anthropology

Geography *171. Quantitative Analysis

Public Health 100A, 100B, 100C. Introduction to Biostatistics

181. Introduction to Social Research Methods in Health

Electives

Anthropology *132. Technology and Environment

*153A-153B. Production and Exchange in Traditional Societies

155. Illness in Non-Western Societies

*167. Urban Anthropology

M168. Health in Culture and Society

Economics *120. Introduction to Urban and Regional Economics

Geography *108. World Vegetation

129. Problems of the Environment: Seminar

*140. Political Geography

*148. Economic Geography

*150. Urban Geography

*152. World Cities

Latin American Studies 197. Interdisciplinary Topics in Latin American Studies

199. Special Studies in Latin American Studies

Public Health *161. Nutrition and Health

186. The World's Population and Food

Sociology *126. Social Demography

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*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 Aptitude Test (combined verbal and quantitative sections) of the Graduate Record Examination (GRE).

(5) A resume or curriculum vitae describing academic and Latin American experience.

Students are admitted each quarter. Application deadlines are November 1 for Winter Quarter, February 1 for Spring Quarter, and May 15 (or July 1 by special petition) for Fall Quarter.

Fellowship applications for the academic year are due on January 15 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.

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, engineering, education, 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. 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 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, to be distributed among three fields or disciplines either on a 3-3-3 or 4-3-2 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, to be distributed on a 4-3-3 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 prepare a research paper on an approved topic that integrates two of the three fields in which coursework has been undertaken. Your research paper committee must approve your topic in advance and must receive a draft of the paper at least five weeks prior to the end of the quarter in which you plan to graduate. Committee members make recommendations for revision, evaluate the final draft and, if your work meets the University standards of scholarship, recommend the award of the M.A. degree.

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 quarter 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 respective 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 Architecture/Urban Planning) and Management (M.B.A.).

Individual Ph.D. Programs

You may design an individual doctoral program in Latin American studies. An explicit proposal must be submitted to your M.A. committee for analysis and endorsement, and then be submitted to the Graduate Council for approval.

Lower Division Course

99. Introduction to Latin American Problems. Limited to 15 students. An interdisciplinary seminar for lower division students. May be repeated for credit with topic change.

Upper Division Courses

M155. Disease Problems of Socioeconomic and Political Impact in Latin America. (Same as Public Health M115.) Lecture, six hours; discussion, six hours. Prerequisite: one upper division course in Latin American studies. Social, economic, and political impact of important disease problems in Latin American countries. Mr. Work

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. An intensive directed research program in which students conduct interdisciplinary research or complete an 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 the experience and competency required for future bibliographic and research sophistication as the basis for enhanced research results. Mr. Lauerhass

201. Statistical Resources for Latin American Research. The contemporary statistical materials important for research in Latin American studies. Discussion on the qualitative and interpretative aspects of the material, especially as it relates to data developed for publication in the Latin American Center's *Statistical Abstract of Latin America* and its Supplement Series.

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 the 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 the literature and research topics related to Indian cultures of South America. May be repeated for credit. Mr. Wilbert

250B. Interdisciplinary Seminar in Latin American Studies. Lecture, three hours. Prerequisite: consent of instructor. Problem-oriented seminar on critical areas stressed in the University's cooperative programs in Latin America.

250C. Interdisciplinary Topics in Latin American Studies. Prerequisite: consent of instructor. Reading knowledge of Spanish or Portuguese is normally required. A seminar devoted to selected topics of an interdisciplinary nature.

M268A-M268B. Seminar in Recent Latin American History. (Same as History M268A-M268B.) Seminar, three hours. Prerequisite: consent of instructor. Reading knowledge of Spanish and Portuguese is normally required. A 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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. 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 grading.

597. Preparation for M.A. Comprehensive Examination (2 to 8 units). Ordinarily taken only during the quarter in which the 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 (Art, Design, and Art History) *201. Historiography of Art History

220. Oceanic, Pre-Columbian, African, and Native North American Art

Dance *280A-280E. Advanced Studies in Dance Ethnology

Motion Picture/Television (Theater, Film, and Television) *M209C. Ethnographic Film

*298A-298B. Special Studies in Theater Arts

Music *280. Seminar in Ethnomusicology

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

*105A. Intermediate Composition

*105B. Advanced Composition

Linguistics

Anthropology 240. Seminar in Language and Culture

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. The Development of the Portuguese and Spanish Languages

Spanish (Spanish and Portuguese) *202. Phonology and Morphology

*204A-204B. Generative Grammar

*M205A-M205B. The Development of the 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: The 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

239. Special Topics in Urban and Regional Development Policy

246. Housing in Social and Economic Development Policy

253. Social Theory for Planners

Education *203. Educational Anthropology

*204A. Topics and Issues in International and Comparative Education

*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

*207. Politics and 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)

Law *270. International Law

*271. International Business Transactions

Library and Information Science *207. Seminar on International and Comparative Librarianship

*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

*208. Selected Topics in Business Economics

*234A. Multinational Business Finance

*234B. Advanced Studies in International Finance

*261B. International 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 *214. Infectious and Tropical Disease Epidemiology

*216A. Ecology of Exotic Diseases

*221. Seminar in Epidemiology: Methodology

*222. Seminar in Epidemiology: Infectious and Tropical Disease

*240. Health Care Issues in International Perspective

*260E. Advanced Nutrition: Vitamins

*260F. Advanced Nutrition: Proteins

*260G. Advanced Nutrition: Lipids

260H. Advanced Nutrition: Minerals

*262. Seminar in Nutrition

*270. Maternal and Child Nutrition

*M271. Medical Anthropology

*272. Seminar on Current Issues in Maternal and Child Health

*M274A-M274B. Population Policy and Fertility

*M274C. Seminar in Population Policy and Fertility

*M276. Culture and Human Reproduction

*596. Directed Individual Study or Research

Social Science

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

233P. Symbolic Anthropology

*239P. Selected Topics in Field Training in Ethnography

*239Q. Analysis of Field Data

*240. Seminar in Language and Culture
*M241. Topics in Linguistic Anthropology
*M247A. Ethnographic Film
251Q. Cultural Ecology of Lowland South America
*253. Economic Anthropology
*260. Urban Anthropology
*261. Comparative Minority Relations
262. The Cultural Context of Health Care
M263. Medical Anthropology
*264. Ethnography of the Mexican/Chicano People in North America
*M267B. Ethnographic Film Direction
M272. Indians of South America
*282. Research Design in Cultural Anthropology
Archaeology *200. Archaeology Colloquium
*259. Fieldwork in Archaeology
Economics *211. Economic Development
*212. Applied Topics in Economic Development
*213A-213B. Selected Problems of Underdeveloped Areas
*221. Urban and Regional Economic Analysis I
*222. Urban and Regional Economic Analysis II
*291. International Trade Theory
*292. International Finance
*293A-293B-293C. International Economics: Selected Topics
Folklore and Mythology *201A, 201B. 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
266A-266B. Seminar in Colonial Latin American History
267A-267B. Seminar in Latin American History: 19th and 20th Centuries
M268A-M268B. Seminar in Recent Latin American History
Latin American Studies M200. Latin American Research Resources
M250A. Indians of South America
250B. Interdisciplinary Seminar in Latin American Studies
250C. Interdisciplinary Topics in Latin American Studies
Political Science 204A. Quantitative Applications
*C218A. Public Administration and Democratic Government
*224A. Studies in Politics: Politics and Economy
*CM229. Urban Government
*C230. Comparative Development Administration
*C231D. Studies in International Relations: International Relations Theory
*235. Selected Topics in Comparative Politics
C250A. Seminars in Regional and Area Political Studies: Latin American Studies
*C253. Seminar in International Relations
Sociology *259. Social Structure and Economic Change: Historical and Comparative Perspectives
*263. Social Stratification
M287A-M287B. Population Policy and Fertility
*292A-292B-292C. Research Development

*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.

Law and Society

4256 Bunche Hall, (213) 825-3862

Scope and Objectives

The Special Undergraduate Program in Law and Society 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 law and society. The program is designed to allow students to explore the relationships of law with ethics, economics, crime, and social and political institutions and theories.

Special Undergraduate Program

Preparation for the Program

Required: Political Science 10, 40, 70, and 20 or 50; two courses from History 7A, 7B, Philosophy 4, 6, 22.

Upper Division

The political science major should be completed as follows: Political Science 117; one course in Field I other than course 117; two courses in Field III; four courses in Field V; two other political science electives; six courses from Anthropology 152, Economics 172, History 151A, 151B, Philosophy 150, 151A, 151B, 157A, 157B, 166, Sociology 145, 146, 147, 162.

For further information, contact Vicki Waldman, Political Science Counselor, in the program office.

Linguistics

2113 Campbell Hall, (213) 825-0634

Professors

Stephen R. Anderson, Ph.D.
Raimo A. Anttila, Ph.D. *(Indo-European and General Linguistics)*
William O. Bright, Ph.D.
Victoria A. Fromkin, Ph.D.
Edward L. Keenan, Ph.D.
Mazisi R. Kunene, M.A. *(African Languages and Literature)*
Peter N. Ladefoged, Ph.D. *(Phonetics)*
Pamela L. Munro, Ph.D.
Paul M. Schachter, Ph.D., *Chair*
Russell G. Schuh, Ph.D. *(Linguistics and African Languages)*
Robert P. Stockwell, Ph.D.
William E. Welmers, Ph.D., *Emeritus*

Associate Professors

George D. Bedell, Ph.D.
Bruce P. Hayes, Ph.D.
Thomas J. Hinnebusch, Ph.D. *(Linguistics and African Languages)*
Patricia A. Keating, Ph.D.

Assistant Professors

John W. Du Bois, Ph.D.
Hilda J. Koopman, Ph.D. *(Linguistics and African Languages)*
Timothy A. Stowell, Ph.D.
Eric Wehrli, Ph.D.

Adjunct Associate Professors

Susan R. Curtiss, Ph.D.
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), syntax, and semantics. A grammar is a system of rules which characterize the phonology, 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 teacher 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, with a C – or better in each, is required for all of the 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: Completion of the equivalent of the sixth quarter in each of two foreign languages or the sixth quarter in one foreign language and the third quarter in each of two other foreign languages. In addition you must take two of the following: Philosophy 31, Psychology 10, one course in cultural anthropology.

The Major

Required: A minimum of 11 upper division or graduate courses, including Linguistics 100, 103, 110, 120A, 120B, and either 164, C165A, or C165B (both C165A and C165B are strongly recommended for students planning linguistics graduate work; course 164 is recommended for students *not* planning linguistics graduate work). The remaining five courses are electives, three of which must be linguistics courses. The other two 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 C104, 125, 127, 130, C135, 140, M146, M150, 164, C165A, C165B, 170, 175, C180, 185, 195, 199 (if four units), African Languages 190, Anthropology 143A, 143B, Philosophy 127A, 127B, 172, Psychology 122, 123, English 121, 122, or upper division courses in a foreign language beyond the sixth quarter. In addition to the 11 upper division courses, at least three courses (which may be either upper or lower division) are required in a language other than those in the Romance, Slavic, or Germanic families. These courses may be applied toward the foreign language requirement described above under "Preparation for the Major." 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 100A, you have automatically satisfied the requirement of the sixth quarter of work in one language).

Linguistics 195, or 196A and 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, (2) completing Program in Computing 10A, 10B, 10C, 60, Linguistics C180, 185. You graduate with a bachelor's degree in your major and a specialization in computing.

Honors in Linguistics

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 Computer Science

Pre-Linguistics and Computer Science Major

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 100, Philosophy 31, Program in Computing 10A, 10B, 10C.

Preparation for the Major

Required: Mathematics 31A, 31B, Philosophy 31, Program in Computing 10A, 10B, 10C, 30, completion of the sixth quarter in one foreign language and the third quarter 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 100, 103, C104, 120A, 120B, either 164, C165A, or C165B (the last of these being most strongly recommended for this major), C180, 185, one upper division elective in linguistics, Computer Science 111 or 181, 131, 132, 141, 163.

Bachelor of Arts in Linguistics and East Asian Languages and Cultures

Preparation for the Major

Required: Completion of the sixth quarter in either Chinese or Japanese; Philosophy 31; one course in cultural anthropology; either East Asian Languages and Cultures 40A or 40B, as appropriate; completion of the sixth quarter in one other foreign language or the third quarter in each of two other foreign languages.

The Major

Required: Linguistics 100, 103, 110, 120A, 120B, either 164, C165A, or C165B, one upper division elective in linguistics; for the classical Japanese track: East Asian Languages and Cultures 119A-119B, 129, 137, CM176, 179A, 179B; for the modern Japanese track: East Asian Languages and Cultures 119A-119B, CM176, three courses from 134A, 134B, 145, C166, C178, C181, C182; for the classical Chinese track: East Asian Languages and Cultures 113A-113B-113C, four courses from 152A, 152B, 163A, 163B, 163C; for the modern Chinese track: East Asian Languages and Cultures 121A-121B-121C, four courses from 122A, 122B, 124A, 124B, 124C, 126, 151A, 151B.

Bachelor of Arts in Linguistics and English

Preparation for the Major

Required: English 3, 10A, 10B, 10C, Philosophy 31, completion of the sixth quarter in each of two foreign languages or the sixth quarter in one foreign language and the third quarter in each of two other foreign languages.

The Major

Required: Fifteen upper division courses as follows: Linguistics 100, 103, 110, 120A, 120B, either 164, C165A, or C165B, two upper division electives from other linguistics courses; 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: French 1, 2, 3, 4, 5, 6, 12, 15, completion of the sixth quarter in one other foreign language or the third quarter in each of two other foreign languages.

The Major

Required: Sixteen upper division courses as follows: Linguistics 100, 103, 110, 120A, 120B, either 164, C165A, or C165B, two upper division electives in linguistics, French 100A, 100B, 100C, 103, 105, 106, and two elective upper division French literature courses.

Bachelor of Arts in Linguistics and Italian

Preparation for the Major

Required: Italian 1, 2, 3, 4, 5, 25, Latin 1, 2, 3, completion of the third quarter in one other foreign language or the sixth quarter in Latin, Philosophy 31, one course in cultural anthropology.

The Major

Required: Thirteen upper division courses as follows: Linguistics 100, 103, 110, 120A, 120B, either 164, C165A, or C165B, two upper division electives in linguistics, Italian 102A, 190, and three additional upper division electives in Italian.

Bachelor of Arts in Linguistics and Philosophy

Preparation for the Major

Required: Philosophy 31, 32, and two courses from 1, 6, 7, 21; completion of the sixth quarter in each of two foreign languages or the sixth quarter in one foreign language and the third quarter in each of two other foreign languages.

The Major

Required: Fourteen upper division courses as follows: Linguistics 100, 103, 120A, 120B, C165B, three upper division electives in linguistics; six upper division courses in philosophy, including at least five from Philosophy 126A through 135, 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: Psychology 10, 41, 42, completion of the sixth quarter in one foreign language and the third quarter in a second foreign language. Program in Computing 10A is strongly recommended.

The Major

Required: Fourteen upper division courses as follows: Linguistics 100, 103, 120A, 120B, 130, two upper division electives in linguistics, Psychology 110, 120, 121, 122 or 123, 130, and the remaining elective to be selected from 112A, 112B, 112C, 112E, 115, 116, 124B, 135, 137A. Linguistics 164 and Psychology 115 are strongly recommended.

Bachelor of Arts in Linguistics and 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, and 25, 30, completion of the sixth quarter in one other foreign language or the third quarter in each of two other foreign languages.

The Major

Required: Fourteen upper division courses as follows: Linguistics 100, 103, 110, 120A, 120B, either 164, C165A, or C165B, 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: Spanish 1, 2, 3, 4, 5, 25, M42, M44, completion of the sixth quarter in one other foreign language or the third quarter in each of two other foreign languages.

The Major

Required: Fifteen upper division courses as follows: Linguistics 100, 103, 110, 120A, 120B, either 164, C165A, or C165B, two additional upper division courses in linguistics (preferably 130 and 170), Spanish 100A, 100B, 115 or M118A, 119A, 119B, and two additional upper division courses in Spanish.

Bachelor of Arts in African Languages

Preparation for the Major

Required: Nine courses from African Languages 1A through 42C and 199 (six in one language and three in another).

The Major

Required: A minimum of 15 upper division courses, including three courses in an African language; African Languages 150A-150B, 190, 192; Linguistics 100, 103; three courses selected from English 114, Geography 189, History 125A, 125B, 125C, 126A, 126B, 127A, 127B, 128A, 128B, Linguistics 110, 120A, 120B or 127, 140, M146, 170, Music 143A, 143B, Political Science 166A, 166B, 166C. Linguistics 164 and completion of the sixth quarter in one of the following non-African languages are strongly recommended: French, Dutch and Afrikaans, German, Portuguese, Arabic.

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 the Fall Quarter only (exceptions may be made by the chair). The deadline for submission of applications for the Fall Quarter is December 31 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 at least two 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 100, 103, 110, 120A, 120B, C165A, C165B 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, 2113 Campbell Hall, UCLA, Los Angeles, CA 90024. This brochure explains, in particular, advising procedures and procedures for the formation of M.A. and Ph.D. guidance committees.

Specialization

At the M.A. level, six core courses in phonetics, phonology, syntax, semantics, and historical linguistics are required. The remaining three (of the nine graduate courses required) may be taken in any area of linguistics, generally aiming toward a doctoral specialization. Except for these electives, no specialization is possible at the M.A. level.

Foreign Language Requirement

You must demonstrate knowledge of one research language before receiving an 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) an Educational Testing Service (ETS) graduate language examination. 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 unless English was the language of instruction in their elementary and secondary education. 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. The following eight courses are required: Linguistics C165A/C200A, C165B/C200B, 201A, 202, 203, 206A, 206B, 207. One elective is required and must be a graduate linguistics course. Students who enter without deficiencies will already have taken courses C165A and C165B or the equivalent, so they must take three electives in all. The core courses in the relevant areas are normally considered prerequisite to the proseminars (courses 251 through 259B), which may be repeated for credit with topic change. No more than four units of course 596A or 596B and no more than eight units of course 501 may be applied toward the required nine courses. Courses in the 260 series may be applied as electives for the M.A. if taken for four units.

The following undergraduate courses or the equivalent are prerequisite to graduate courses in the corresponding areas: Linguistics 100, 103, 110, 120A, 120B, C165A, C165B. Course 103 must have been passed with a grade of B or better as prerequisite to courses 210A and 210B. If course 103 is waived on the basis of training elsewhere, you must pass a department examination in practical phonetics. This requirement must be completed before admission into the doctoral program.

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.

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 quarter. 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 quarter 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 to the evaluation committee a paper equal in depth and scope to a thesis. A committee is appointed and, in either case, once the committee has approved the thesis or paper, it is submitted to the entire faculty who evaluate its quality and your accomplishments and promise.

Major Fields or Subdisciplines

You may specialize in syntax, semantics, phonology, phonetics, language change, typology, sociolinguistics, neurolinguistics, 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 and 210B, unless they have been used to fulfill the M.A. requirement, and eight units in an area distinct from that of the student's 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 substantive research papers of publishable quality 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 quarters 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, scheduled at a time, and with advance notice, that will enable a substantial number of students and faculty to attend. The defense is not restricted to the doctoral committee.

General Linguistics

Lower Division Courses

1. Introduction to the Study of Language. A summary, for the general undergraduate, of what is known about human language; the 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.

10. The Structure of English Words. Lecture, three to four hours. An introduction to the structure of English words of classical origin, including the most common base forms and the 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

97. Lower Division Seminar. Variable topics; consult *Schedule of Classes*, College of Letters and Science, or department for current topic. May be repeated for credit.

Upper Division Courses

100. Introduction to Linguistics. An introduction to the theory and methods of linguistics: universal properties of human language; phonetic, phonological, morphological, syntactic, and semantic structures and analysis; the nature and form of grammar.

103. Introduction to General Phonetics. Lecture, three hours; laboratory, two hours. Prerequisite or corequisite: course 100 or equivalent. The phonetics of a variety of languages and the phonetic phenomena that occur in languages of the world. Extensive practice in the perception and production of such phenomena. Ms. Keating, Mr. Ladefoged

C104. Experimental Phonetics. Lecture, four hours; laboratory, two hours. Prerequisite: course 103. Survey of the principal techniques of experimental phonetics. Use of laboratory equipment for recording and measuring phonetic phenomena. Concurrently scheduled with course C204.
Mr. Anderson, Ms. Fromkin, Ms. Keating, Mr. Ladefoged

110. Introduction to Historical Linguistics. Prerequisites: courses 100, 103, 120A, and 120B or 127. The methods and theories appropriate to the historical study of language, such as the comparative method and method of internal reconstruction. Sound change, grammatical change, semantic change.
Mr. Anttila, Mr. Schuh, Mr. Stockwell

114. American Indian Linguistics. (Formerly numbered 114A, 114B.) Strongly recommended prerequisite: course 100. 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)

120A. Linguistic Analysis: Phonology. Prerequisites: courses 100, 103. Descriptive analysis of phonological structures in natural languages; emphasis on insight into the nature of such structures rather than linguistic formalization.
Mr. Bedell, Mr. Bright, Mr. Hayes

120B. Linguistic Analysis: Grammar. Prerequisite: course 100. Course 120A is not prerequisite to 120B. Descriptive analysis of morphological and syntactic structures in natural languages; emphasis on insight into the nature of such structures rather than linguistic formalization.
Mr. Bedell, Mr. Bright, Mr. Stowell

125. Semantics. Prerequisite: course 120B. A survey of the most important theoretical and descriptive claims about the nature of meaning.
Ms. Thompson

127. Syntactic Typology and Universals. Prerequisite: course 100. A study of the essential similarities and differences among languages in the 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, Ms. Thompson

130. Child Language Acquisition: Introduction. Prerequisites: courses 100, 120A, and 120B, or consent of instructor. A survey of contemporary research and theoretical perspectives in the 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. Keating

C135. Theoretical Issues in Disorders of Language Development. (Formerly numbered CM135.) Prerequisites: courses 1 or 100, 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 the relationship of these disorders to each other. Such questions as the relationship of cognition to linguistic ability. Concurrently scheduled with course C235.

140. Linguistics in Relation to Language Teaching. Prerequisites: courses 120A, 120B. Aspects of linguistics in relation to the teaching of language, with particular focus on the special problems entailed in the teaching of non-European languages.
Mr. Stockwell

M146. Language in Culture. (Same as Anthropology M140.) Prerequisite: upper division standing or consent of instructor. The study of language as an aspect of culture; the relation of habitual thought and behavior to language; and language and the classification of experience. A holistic approach to the study of language, with emphasis on the relationship of linguistic anthropology to the 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. A survey of the Indo-European languages from ancient to modern times; their relationships and chief characteristics.
Mr. Anttila

164. Modern Theories of Language. Prerequisites: courses 120A, 120B. A critical and historical survey of some of the central claims and types of supporting evidence put forward by transformational theory and by at least one other influential school of contemporary linguistics. About one third of the course deals with phonology, the remainder with syntax and semantics. Students who plan to take courses C165A, C165B should not take 164.
Mr. Bedell, Mr. Schachter, Mr. Stowell

C165A. Linguistic Theory: Phonology. Prerequisite: course 120A. Recommended for students who plan to do graduate work in linguistics. The theory of generative phonology; the form of phonological rules; formal and substantive phonological universals. Concurrently scheduled with course C200A.
Mr. Anderson, Mr. Hayes

C165B. Linguistic Theory: Grammar. Prerequisite: course 120B. Recommended for students who plan to do graduate work in linguistics. The form of grammars; word formation and sentence formation; formal and substantive universals in syntax; relation between syntax and semantics. Concurrently scheduled with course C200B.
Mr. Schachter, Mr. Stowell

170. Language and Society: Introduction to Sociolinguistics. Prerequisite: course 100 or consent of instructor. Study of the patterned covariation of language and society; social dialects and social styles in language; problems of multilingual societies.
Mr. Du Bois

175. Linguistic Change in English. Prerequisites: courses 110, 120A, 120B. Principles of linguistic change as exemplified through a detailed study of the history of English pronunciation, lexicon, and syntax.
Mr. Stockwell

M176. Introduction to the Structure of Japanese. (Same as East Asian Languages and Cultures CM176.) Lecture, three hours. Prerequisite: two years of Japanese. Knowledge of linguistics is not required. Discussion of many seemingly idiosyncratic characteristics of Japanese syntax and semantics in light of word-order typology and universal grammar, often in the form of a contrastive analysis of Japanese and English. Ms. Akatsuka

C180. Mathematical Backgrounds for Linguistics. Prerequisites: courses 120A, 120B. Prior mathematics knowledge is 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 quarter. Concurrently scheduled with course C208.
Mr. Keenan

185. Introduction to Computational Linguistics. (Formerly numbered 145.) Prerequisites: courses 120B, C180, Program in Computing 10B. Recommended: course C165B, Program in Computing 60. Basic training in computational linguistics. Overview of the field and discussion of some applications, focusing on computational models and parsing algorithms, including transition networks and chart parsers. Students expected to complete programming exercises. Mr. Wehrli

195. Senior Essay. Prerequisite: consent of instructor. Limited to senior linguistics majors. An extended piece of writing is undertaken on a linguistic topic selected by the student to be completed under the supervision of a faculty member. Consult the professor in charge to enroll.

196A. Honors Essay. Prerequisites: 3.5 GPA, course C165A or C165B (may be taken concurrently). Recommended (but not required): completion of both courses C165A and C165B before or during the quarter in which course 196A is taken. A draft of an extended piece of writing on a linguistic topic selected by the student is prepared under the supervision of a faculty member. Consult the 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. The piece of writing drafted in course 196A is presented in a seminar, revised, and put into final form under the supervision of a faculty member. Consult the professor in charge to enroll. (F)

197. Special Topics in Linguistics. Prerequisite: course 1 or 100 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

C200A. Linguistic Theory: Phonology. Prerequisite: course 120A. The theory of generative phonology; the form of phonological rules; formal and substantive phonological universals. Concurrently scheduled with course C165A. While the topics of coverage are the same for undergraduate and graduate students, the depth of reading required of graduate students is greater, with more primary sources included. Also, graduate students are expected to produce a substantially deeper and more thorough research paper. Mr. Anderson, Mr. Hayes

C200B. Linguistic Theory: Grammar. Prerequisite: course 120B or 127. The form of grammars; word formation and sentence formation; formal and substantive universals in syntax; relation between syntax and semantics. Concurrently scheduled with course C165B. While the topics of coverage are the same for undergraduate and graduate students, the depth of reading required of graduate students is greater, with more primary sources included. Also, graduate students are expected to produce a substantially deeper and more thorough research paper.
Mr. Schachter, Mr. Stowell

201A. Phonological Theory: Current Issues. Prerequisite: course C165A/C200A. Survey of current issues in phonological theory.
Mr. Anderson, Mr. Bedell, Mr. Hayes

201B. Phonological Theory in the 20th Century. Prerequisite: course C165A/C200A. Survey of the development of phonological theory in the 20th century. Mr. Anderson, Mr. Bedell

202. Theory of Language Change. Prerequisite: course 110. Survey of current issues in language change.
Mr. Anttila, Ms. Munro, Mr. Schuh, Mr. Stockwell

203. Theory of Phonetics. Prerequisite: course 120A. The preliminaries to speech analysis. Functional anatomy of the vocal organs; fundamental principles of acoustics and of the acoustic theory of speech production; issues in the perception of speech; the nature and design of feature systems for phonetic and phonological analysis.
Mr. Anderson, Ms. Keating, Mr. Ladefoged

C204. Experimental Phonetics. Lecture, four hours; laboratory, two hours. Prerequisite: course 103. Survey of the principal techniques of experimental phonetics. Use of laboratory equipment for recording and measuring phonetic phenomena. Concurrently scheduled with course C104. Graduate students are expected to produce a substantial research paper.
Mr. Anderson, Ms. Fromkin, Ms. Keating, Mr. Ladefoged

205. Morphological Theory: Current Issues. Prerequisites: courses C165A/C200A, C165B/C200B, or equivalent. 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. Anderson, Mr. Hayes

206A. Syntactic Theory: Current Issues in Formal Syntax. Prerequisite: course C165B/C200B. Survey of current issues in formal syntactic theory.
Mr. Schachter, Mr. Stowell

206B. Syntactic Theory: Current Issues in Functional and Typological Approaches to Syntax. Prerequisite: course C165B/C200B. Survey of current issues in functional and typological approaches to syntax. Mr. Du Bois, Ms. Thompson

207. Semantic Theory. Recommended prerequisite when theoretical perspective is that of formal semantics: course C180 or equivalent. Approaches to the study of meaning. Different offerings of the course approach semantics from different theoretical perspectives (e.g., formal semantics, functional semantics, interpretive semantics). May be repeated for credit if theoretical approach is different.
Mr. Du Bois, Mr. Keenan

C208. Mathematical Backgrounds for Linguistics. Prerequisites: courses 120A, 120B. Corequisite: course C200B. Prior mathematics knowledge is 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 quarter. Concurrently scheduled with course C180. Graduate students are expected to complete additional problem sets.
Mr. Keenan

209. Natural Language Processing. Recommended prerequisites: courses C165B, C180, 185, or equivalent. Computational models of language processing, with emphasis on syntactic processing. Overview of field. Artificial vs. natural language processing techniques. Discussion and evaluation of several parsing strategies (ATN, two-stage parsers, deterministic parsers, etc.) from computational and psychological points of view. Mr. Wehrli

210A. Field Methods I (6 units). Prerequisites: courses C165A/C200A, C165B/C200B. Analysis of a language unknown to members of the class from data elicited from a native speaker of the language. Term papers are relatively full descriptive sketches of the language. May be repeated for credit with topic change.

210B. Field Methods II (6 units). Prerequisite: course 210A in preceding quarter. Because different languages are investigated in different years, course 210B can only be taken as a direct continuation of 210A in the same year. When there are multiple sections, continuation must be in the same section. May be repeated for credit with topic change.
Mr. Bright, Ms. Munro, Mr. Schachter

220. Linguistic Areas. Prerequisites: courses 120A, and 120B or 127. Recommended: courses C165A/C200A, C165B/C200B. Analysis and classification of languages spoken in a particular area (e.g., Africa, the Balkans, South Asia, Southeast Asia, Australia, Aboriginal North America, Aboriginal Latin America, Far East, etc.). May be repeated for credit with topic change.

225. Linguistic Structures. Prerequisites: courses 120A, and 120B or 127. Recommended: courses C165A/C200A, C165B/C200B. 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.

C235. Theoretical Issues in Disorders of Language Development. (Formerly numbered CM235.) Prerequisites: courses 1 or 100, 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 the relationship of these disorders to each other. Such questions as the relationship of cognition to linguistic ability. Concurrently scheduled with course C135. Graduate students are expected to apply more sophisticated knowledge and produce a research paper of greater depth.

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). Prerequisite: course C165A/C200A. Courses 201A and/or 203 may be required. Specialized topics in phonetics and phonology. May not be applied toward the 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). Prerequisite: course C165B/C200B. Course 206A, 206B, or 207 may be required. Specialized topics in syntax and semantics. May not be applied toward the 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 the 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). Prerequisites: courses C165A/C200A, C165B/C200B, consent of instructor. Course 201A, 201B, 202, 203, 206A, 206B, or 207 may be required. Individual proseminars on topics such as child language, sociolinguistics, history of linguistic theory, neurolinguistics, languages of the world, psycholinguistics, etc. May not be applied toward the 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 C165A/C200A. Courses 201A and/or 203 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 C165B/C200B. Courses 206A, 206B, and/or 207 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 C165A/C200A, C165B/C200B, consent of instructor. Course 201A, 201B, 202, 206A, 206B, or 207 may be required. 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. 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. Seminar in Phonetics (2 or 4 units). Discussion, three hours. Prerequisite: consent of instructor. Each course may be taken independently for credit. May not be applied toward the M.A. or Ph.D. degree requirements when taken for two units. May be repeated for credit. S/U grading.

261A-261B-261C. Seminar in Phonology (2 or 4 units). Discussion, three hours. Prerequisite: consent of instructor. Each course may be taken independently for credit. May not be applied toward the M.A. or Ph.D. degree requirements when taken for two units. May be repeated for credit. S/U grading.

262A-262B-262C. Seminar in Syntax and Semantics (2 or 4 units). Discussion, three hours. Prerequisite: consent of instructor. Each course may be taken independently for credit. May not be applied toward the M.A. or Ph.D. degree requirements when taken for two units. May be repeated for credit. S/U grading.

263A-263B-263C. Seminar in Language Variation (2 or 4 units). Discussion, three hours. Prerequisite: consent of instructor. Each course may be taken independently for credit. May not be applied toward the M.A. or Ph.D. degree requirements when taken for two units. May be repeated for credit. S/U grading.

264A-264B-264C. Seminar in Special Topics in Linguistic Theory (2 or 4 units). 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 the 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 the 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. A teaching apprenticeship under the 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.

411A-411B-411C. Research Orientation (1 unit each). (Formerly numbered 411A-411B.) Prerequisite: graduate standing. Sequence of lectures by all faculty of the department, plus faculty from closely related departments and programs, to acquaint new graduate students with the research directions and resources of the department and elsewhere on campus. May not be applied toward the M.A. or Ph.D. requirements. S/U grading.

422. Practicum in Phonetic Data Analysis (2 units). Prerequisite: graduate standing. Workshop in the examination of phonetic data, such as sound spectrograms, oscillographic records, and computer output. May not be applied toward the M.A. or Ph.D. degree requirements. S/U grading.

Ms. Keating, Mr. Ladefoged

433. The Use of Computers in Linguistics (2 units). Prerequisite: graduate standing in linguistics. Guided use of the departmental computer facilities. May not be applied toward the M.A. or Ph.D. degree requirements. S/U grading.

Mr. Hayes, Mr. Ladefoged

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.

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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. 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 the 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 the quarters in which students expect to take the comprehensive or qualifying examination. May not be applied toward the 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 the 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 the 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. The 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. The most widely spoken of the Nguni languages of South Africa; mutually intelligible with other members of this group. Mr. Kunene

8A-8B-8C. Intermediate Zulu. Prerequisites: courses 7A-7B-7C or consent of instructor.

Mr. Kunene

11A-11B-11C. Elementary Yoruba. Lecture, five hours. Prerequisite: consent of instructor. The 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. The major language of Mali, also widely spoken in adjacent parts of West Africa; includes Maninka (Malinke), Dyula, and other mutually intelligible dialects.

32A-32B-32C. Intermediate Bambara. Prerequisites: courses 31A-31B-31C or consent of instructor.

41A-41B-41C. Elementary Hausa. Lecture, five hours. The 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). The 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.

97. Elementary and Intermediate Studies in African Languages. Prerequisite: consent of instructor. Instruction at an elementary or intermediate level, based on the needs of the students, in any language for which appropriate facilities are available. Those taught in the past included Akan, Efik, 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.

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

150A-150B. African Literature in English Translation. (Formerly numbered 150A-150B-150C.) Prerequisite: History 10A or 10B. Course 150A is prerequisite to 150B. Narrative and didactic oral prose and poetry of sub-Saharan Africa and written prose and poetry of South Africa. Mr. Kunene

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.

190. Survey of African Languages. An introduction to the languages of Africa, their distribution and classification, and their phonological and grammatical structures; illustrations from several representative languages, with appropriate language laboratory demonstrations and drills.

192. Comparative Studies in African Languages. Prerequisites: two quarter courses in an African language or course 190. Recommended prerequisite or corequisite: Linguistics 110. Comparison of structural and lexical features of a group of closely related languages, such as Southern Bantu, Southwestern Mande, Akan, or Senufo.

199. Special Studies in African Languages (1 to 6 units). Prerequisite: consent of instructor. Instruction at an advanced level or supervised research, based on the needs of individual students, in any language or group of languages for which appropriate facilities are available.

Graduate Courses

201A-201B. Comparative Niger-Congo. Prerequisites: Linguistics C165A, C165B, 220. Recommended: three quarter courses in one Niger-Congo language selected from courses 1A through 32C, 199. Investigation of relationships within the Niger-Congo family as a whole or within selected branches of the family.

202A-202B-202C. Comparative Bantu. Prerequisites: Linguistics 110, C165A, C165B. Recommended: three quarter courses in one Bantu language selected from courses 1A through 8C, 199. Investigation of relationships among the Bantu languages; the extent and external relationships of Bantu.
Mr. Hinnebusch

270. Seminar in African Literature. Mr. Kunene

596. Directed Studies (1 to 8 units). Directed individual study or research. Four units may be applied toward the 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. The 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 the M.A. course requirements. May be repeated for credit. S/U grading.

Related Courses in Other Departments (Other than Language Courses)

Anthropology 143A. Field Methods in Linguistic Anthropology: Practical Phonetics

143B. Field Methods in Linguistic Anthropology: Syntax, Semantics, Textual Cohesion

Armenian (Near Eastern Languages) 210. History of the Armenian Language

Dutch and Afrikaans (Germanic Languages) 234. The Structure of Modern Standard Dutch

East Asian Languagea and Cultures CM176. Introduction to the Structure of Japanese

223. Seminar: Linguistic Analysis of Japanese Narratives

English 121. The History of the English Language

122. Introduction to the Structure of Present-Day English

210. History of the English Language

218. Celtic Linguistics

240. Studies in the History of the English Language

241. Studies in the Structure of the English Language

English (ESL) 241K. Contrastive and Error Analysis in the ESL Context

260K. Psycholinguistics and Language Teaching

280K. Language Policy in Developing Countries

Folklore and Mythology 217. Folk Speech

French 204A. Phonology and Morphology from Vulgar Latin to French Classicism

204B. Syntax and Semantics from Vulgar Latin to French Classicism

206. French Linguistics

German (Germanic Languages) 137. Language and Linguistics

217. History of the German Language

230. Survey of Germanic Philology

251. Seminar in Syntax and Phonology of German

252. Seminar in Historical and Comparative German 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 in Indo-European Linguistics

Italian 259A. History of the Italian Language

259B. The Structure of Modern Italian

259C. Italian Dialectology

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. The History of Portuguese and Spanish: Phonology

M118B. The History of Portuguese and Spanish: Morphology and Syntax

M205A-M205B. The Development of the 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 122. Language and Communication

123. Psycholinguistics

260A-260B. Proseminar in Cognitive Psychology

Russian (Slavic Languages) 121. Russian Phonology

122. Russian Morphology

123. Historical Commentary on Modern Russian

204. Introduction to the 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. The History of the Russian Literary Language

265. Advanced Russian Syntax

266. Russian Lexicology

Semitics (Near Eastern Languages) 280A-280B-280C. Seminar in 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 in Slavic Linguistics

282. Seminar in Structural Analysis

Slovak (Slavic Languages) 222. The Structure of Slovak

Sociology C144A. Conversational Structures I

266. Selected Problems in the Analysis of Conversation

267. Selected Problems in Communication

Spanish (Spanish and Portuguese) 100A. Introduction to the Study of Spanish Grammar: Phonology and Morphology

100B. Introduction to the Study of Spanish Grammar: Syntax

115. Applied Linguistics

M118A. The History of Portuguese and Spanish: Phonology

M118B. The History of Portuguese and Spanish: Morphology and Syntax

202. Phonology and Morphology

204A-204B. Generative Grammar

M205A-M205B. The Development of the 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

Turkic Languages (Near Eastern Languages) 230A-230B-230C. A Historical and Comparative Survey of the Turkic Languages

Mathematics

6363 Math Sciences, (213) 825-4701

Professors

Richard F. Arens, Ph.D.
Donald G. Babbitt, Ph.D.
Kirby A. Baker, Ph.D.
Robert J. Blattner, Ph.D.
Robert F. Brown, Ph.D.
David G. Cantor, Ph.D
Lennart Carleson, Ph.D.
C. C. Chang, Ph.D.
S. Y. Alice Chang, Ph.D.
S. Y. Cheng, Ph.D.
Earl A. Coddington, Ph.D.
Philip C. Curtis, Jr., Ph.D.
Henry A. Dye, 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.
David A. Gieseker, Ph.D.
David Gillman, Ph.D., *Vice Chair, Undergraduate*
Basil Gordon, Ph.D.

Mark L. Green, Ph.D.
Robert E. Greene, Ph.D.
Nathaniel Grossman, Ph.D.
Alfred W. Hales, Ph.D.
Alfred Horn, Ph.D.
Robert I. Jennrich, Ph.D.
Paul J. Koosis, Ph.D.
Charles G. Lange, Ph.D., *Vice Chair, Graduate*
Thomas M. Liggett, Ph.D.
D. Anthony Martin
Ronald J. Miech, Ph.D., *Director, Program in Computing*
John J. Millson, Ph.D.
Yiannis N. Moschovakis, Ph.D., *Chair*
Barrett O'Neill, Ph.D.
Stanley J. Osher, Ph.D.
Sidney C. Port, Ph.D.
James V. Ralston, Jr., Ph.D., *Vice Chair, Administrative*
Raymond M. Redheffer, Ph.D.
Paul H. Roberts, Ph.D., D.Sc.
Bruce L. Rothschild, Ph.D.
Murray M. Schacher, Ph.D.
Lloyd S. Shapley, Ph.D.
Robert Steinberg, Ph.D.
Masamichi Takesaki, Ph.D.
V. S. Varadarajan, Ph.D.
James H. White, Ph.D.
N. Donald Ylvisaker, Ph.D.

Emeritus Professors

John W. Green, Ph.D.
M. R. Hestenes, Ph.D.
Paul G. Hoel, Ph.D.
S. T. Hu, Ph.D., D.Sc.
Paul B. Johnson, Ph.D.
Lowell J. Paige, Ph.D.
William T. Puckett, Ph.D.
Leo R. Sario, Ph.D.
Robert H. Sorgenfrey, Ph.D.
Angus E. Taylor, Ph.D.
Frederick A. Valentine, Ph.D.

Associate Professors

F. Michael Christ, Ph.D.
Rodolfo De Sapio, Ph.D.
Robert K. Lazarsfeld, Ph.D.
Ker-Chau Li, Ph.D.
Daniel Michelson, Ph.D.
William I. Newman, Ph.D.
Jonathan D. Rogawski, Ph.D.
John R. Steel, Ph.D.

Assistant Professors

Christopher R. Anderson, Ph.D.
Mladen Bestvina, Ph.D.
Kenneth P. Bube, Ph.D.

Lecturers

James Caballero, M.A.
David Cohen, M.A.
Bjorn Ellertson, M.A. *(Program in Computing)*
Herbert Enderton, Ph.D.
John McGhee, M.A.

Adjunct and Hedrick Assistant Professors

Erazm Behr, Ph.D., *Adjunct*
Leonid Brevdo, D.Sc., *Hedrick*
Koji Cho, Ph.D., *Adjunct*
Steven Hudson, Ph.D., *Hedrick*
Michael Kelly, Ph.D., *Adjunct*
Geoffrey Mess, Ph.D., *Hedrick*
Karen Messer, Ph.D., *Adjunct*
Motohico Mulase, D.Sc., *Hedrick*
Peter S. Pacheco, Ph.D., *Adjunct (Program in Computing)*
John F. Pedersen, Ph.D., *Adjunct (Program in Computing)*
John Stembridge, Ph.D., *Hedrick*
Wei-Shih 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 aims to provide courses of study that will 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 A or 1, you are required to take the mathematics section of the Chemistry/Mathematics Preliminary Examination; if you wish to enroll in Mathematics 3A or 31A, you must pass the examination.

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 Tuesday, September 23, 1986, for Fall Quarter 1986; Wednesday, October 29, 1986, for Winter Quarter 1987; and Wednesday, February 4, 1987, for Spring Quarter 1987. For information, contact the Undergraduate Mathematics Office, 6375 Math Sciences (206-6857).

Advanced Placement in Calculus

Students who have taken the Advanced Placement (AP) Calculus AB test and obtained a score of 3 or higher receive five units of credit and Mathematics 31A equivalency. Those who take the BC test and obtain a score of 3 or higher receive 10 units of credit and Mathematics 31A, 31B equivalency.

If you have 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 Undergraduate Mathematics Office for further details.

Credit Limitations

Credit will be given for at most one course in each of the following groups: (1) 3A, 31A, 31AH; (2) 3B, 31B, 31BH; (3) 3C, 3E; (4) 110A, 117; (5) 131C, 131CH, 132; (6) 140A, 141A; (7) 150A, 152A.

Mathematics 2, 38A, 38B, and 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 (or former course 124A.)

Mathematics 150A-150B and 152A-152B are not open for credit to students with credit for Electrical Engineering 131A (or former course 120A.)

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).

Program in Computing

The Program in Computing is not a major, but a supplement to existing Letters and Science majors. The purpose of the program is to offer all students an opportunity to obtain elementary education in computer science.

Program in Computing 1 is designed for students who wish a broad, general introduction to the topic of computers and computation. It is also strongly recommended for those who wish to take course 3 or 10A, but who have no prior experience in computing.

The balance of the curriculum is designed for several constituencies:

(1) Letters and Science majors who wish to obtain an extensive education in basic computer science and then apply this knowledge to their discipline should take Program in Computing 10A, 10B, 10C and, depending on the advice of their major department, either course 30 or 60 or both.

(2) Pre-mathematics majors who wish to advance to the mathematics of computation major must take Program in Computing 10A, 10B, 10C or 30, and the related required courses in mathematics and physics.

(3) Physical science students who would like one course in programming should take either Program in Computing 3 (uses FORTRAN) or 10A (uses PASCAL), on the advice of their major department.

Pre-Mathematics Major

All students who wish to enter one of the majors offered by the Mathematics Department must first register as a pre-mathematics major. 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 Undergraduate Mathematics Office, 6375 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 for the operations research plan under the mathematics/applied science major differ from those stated above (see "Operations Research Plan" later in this section). Petitions to enter the operations research plan and the mathematics of computa-

tion major are processed once per year and must be submitted by the deadlines indicated in the descriptions of those programs.

Admission Requirements: Students entering UCLA directly from high school who declare themselves as pre-mathematics majors at the time they apply for admission are automatically admitted as such.

UCLA students who wish to enter the pre-mathematics 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 pre-mathematics 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 pre-mathematics major.

Undergraduate Majors

The Mathematics Department offers four majors: mathematics, applied mathematics, mathematics of computation, and mathematics/applied science. In addition one program is offered in cooperation with the School of Engineering and Applied Science: the mathematics/computer science major, described following this departmental listing.

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; and the mathematics/applied science major for those with substantial interest in the applications of mathematics to a particular outside field of interest. 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-quarter sequence of graduate-level courses during your senior year.

Bachelor of Science in Mathematics

Preparation for the Major

Students officially admitted to the mathematics major for Fall Quarter 1985 or thereafter must fulfill the following preparation requirements.

Those admitted prior to Fall Quarter 1985 may fulfill the preparation requirements listed in the 1984-85 *UCLA General Catalog.*

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 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

Students officially admitted to the mathematics major for Fall Quarter 1985 or thereafter and those admitted prior to Fall Quarter 1985 with less than 90 quarter units completed prior to Fall Quarter 1984 must fulfill the following major requirements. Those admitted prior to Fall Quarter 1985 with 90 or more quarter units completed prior to Fall Quarter 1984 may fulfill the major requirements listed in the 1984-85 *UCLA General Catalog.*

Required: Mathematics 110A, 110B, 115A, 120A, 131A-131B, 131C, and at least five additional courses from 106 through 199. 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 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-quarter sequences from two of the following categories: *numerical analysis* — courses 140A-140B or 141A-141B, *probability and statistics* — courses 150A-150B or 152A-152B, *differential equations* — courses 135A-135B; four additional courses from 110A through 199 (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

Applications for admission are accepted during Spring Quarter only and must be submitted by May 15. All preparation courses for the major must be completed by the end of the quarter in which you apply for admission. Resources for the program are limited, and the number of students admitted may be restricted accordingly.

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 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 courses, including Mathematics 115A, 117, 131A, two additional courses from 110A through 199, 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-140B, 150A-150B or 152A-152B, and 153A-153B; three upper division computer science courses (12 units) selected from an approved list available in the Undergraduate Mathematics Office.

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 faculty adviser, 6375 Math Sciences, during your sophomore year. A proposed program is drawn up and 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. Additional preparation, varying with the individual program, may be required.

The Major

Required: Fourteen courses, seven in mathematics selected from Mathematics 110A through 199 and seven upper division courses in a related field selected from one or two other departments. The seven mathematics 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 quarter 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. 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 courses, including Mathematics 115A, 140A or 141A, 144, 152A-152B, and two courses from 113, 140B or 141B, 151, 153A; seven outside courses, including Economics 101A, 101B, 102, 147A, 160, and two additional courses from Management 130, 190, English 131A through 131H, Economics 145 through 199.

Mathematics/Economics Plan

Preparation for the Major: Mathematics 31A, 31B, 32A, 32B, 33A, 33B, Economics 1, 2, Program in Computing 10A, and one other social science course.

The Major: Seven mathematics courses, including Mathematics 110A or 117, 115A, 131A, 144, 150A or 152A, and two additional courses from 110A through 199; seven economics courses, including Economics 101A, 101B, 102, 144, 145, 147A, and one additional course from 147A through 199.

Operations Research Plan

Enrollment in this plan, designed for students interested in careers and graduate study in operations research and management science, is limited. You must have completed Mathematics 33A and one economics course before the application deadline of April 15, 1987. The admissions committee bases its decisions on your grades in preparation for the major courses, motivation, and intellectual promise. Application forms and further information are available in the department.

Preparation for the Major: Mathematics 31A, 31B, 32A, 32B, 33A, 33B, 61, Economics 1, 2, Program in Computing 10A, 10B, 30, 60.

The Major: Seven courses in mathematics and seven in economics and management. Consult the department for recommended courses. Programs will be designed so that students in this plan qualify for a specialization in computing.

Specialization in Computing

Majors in mathematics, applied mathematics, or mathematics/applied 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, 30, 60, and Mathematics 61 with a minimum grade of C in each course, (3) completing at least two courses from Mathematics 141A, 141B, 169, 169HS. 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 Undergraduate Mathematics Office). You graduate with a bachelor's degree in your major and a specialization in computing.

The Teaching of Mathematics

The department offers a major in the teaching of mathematics. Consult the Mathematics Department for information.

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 (206-1286) for further details.

Honors Program

Students majoring in mathematics, applied mathematics, or mathematics of computation who wish to graduate with departmental honors should apply for admission to the honors program in the Undergraduate Mathematics 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, 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 advanced calculus, algebra, differential equations, 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) Aptitude Test and Advanced Test in Mathematics and must submit three letters of recommendation from mathematicians who know your recent work.

Applications and a booklet, *Graduate Studies in Mathematics at UCLA,* are available from the Graduate Adviser, Department of Mathematics, 6356 Math Sciences, UCLA, Los Angeles, CA 90024.

Master of Arts Degree

You may earn the M.A. degree under the comprehensive examination plan, either in the basic *(pure mathematics)* program or an interdisciplinary program in *applied mathematics.*

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. With consent of the graduate vice chair, students in the applied mathematics program 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.

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

For the basic (pure mathematics) M.A., the comprehensive examination consists of two written four-hour tests, one in algebra and one in analysis. For students in the applied mathematics program, the comprehensive examination consists of a four-hour written test in analysis and a similar test selected from numerical analysis, methods of applied mathematics, or probability/statistics. These tests, prepared by a comprehensive examination committee, are offered early in Fall Quarter or 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 quarter 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 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 100A, 100B, 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.

At present, no education courses or practice teaching are required for the community college credential. To qualify for this credential, it is sufficient to have the M.A.T. degree.

In exceptional cases, an M.A.T. program may be individually designed for candidates for a credential other than the two already mentioned.

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 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 370 or for any mathematics course numbered 104 through 109, except course 106. In addition, you may not receive degree credit for more than two quarters of course 596 or for more than two quarters 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 or under an interdisciplinary program in *applied mathematics*. There are many possible choices of fields within both of 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.

Foreign Language Requirement

You are required to pass two written departmental language examinations in French, German, or Russian (with the consent of the graduate vice chair, students in the applied program may substitute a computer language project for one of the languages). International students whose principal language of instruction in elementary and secondary education was not English may substitute English for one of the foreign languages, but their other language must be one of French, German, or Russian (even if they are in the applied program).

These examinations, offered in the Fall and Spring Quarters, require the translation of material in some basic field of mathematics without the use of a dictionary. They may be retaken any number of times until passed. One of the language examinations must be passed within seven quarters of registered full-time study, the second within 13 quarters. In any event, one examination must be passed before taking the first oral qualifying examination.

Course Requirements

In the pure mathematics program, 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 quarters after passing the written qualifying examinations, the other within five quarters.

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

In the pure mathematics program, you are required to take four written qualifying examinations in the following fields: algebra, real analysis, complex analysis, and one field selected from geometry-topology, statistics-probability, logic, or numerical analysis. The examinations are given in the Fall or Spring Quarter. You must pass two examinations within a period of six registered quarters and all four examinations within a period of nine registered quarters after being admitted to graduate study.

In the applied mathematics program, you must pass four qualifying examinations. The first three consist of one written examination in applied real and complex analysis and two written examinations selected from three areas (applied differential equations, numerical analysis, and probabililty-statistics). Two of these three examinations are to be completed by the end of six quarters after being admitted to graduate study; the third by the end of nine quarters. The fourth qualifying examination, either written or oral, is in your specialized "outside" field, testing your competence at a research level.

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.

Program in Computing

Lower Division Courses

1. Introduction to Computers and Computing. Lecture, three hours; discussion, one hour; computer terminals, five hours. Not open to students with credit for course 10A or equivalent. Fundamentals of computers and computing: machine organization and computer hardware; algorithm and software development; data representation; social impact of computing; contemporary computer applications.

3. Introductory FORTRAN Programming. Lecture, three hours; discussion, two hours; computer terminals, 10 hours. Students with credit for course 10A will receive only two units of credit for this course. Basic principles of programming, using FORTRAN as the example language. A terminal course intended for physical science 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. (Formerly numbered 10.) Lecture, three hours; discussion, two hours; computer terminals, 10 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 the 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. Lecture, three hours; discussion, two hours. Prerequisite: course 10A. Review of sets, arrays, records; text processing; stacks; queues; linked lists; static and dynamic allocations; binary trees; binary search; quicksort.

10C. Advanced Programming. Lecture, three hours; discussion, two hours. Prerequisite: course 10B. Review of simple sorts; shellsort; heapsort; external mergesorting, binary search trees; hashing; multiway trees; lexical analysis; parsing; C language.

30. Machine Organization and Assembly Language Programming. Lecture, three hours; discussion, two hours; computer terminals, 15 hours. Prerequisite: course 10B. Not open for credit to students with credit for 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; computer terminals, 10 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.

Mathematics

Lower Division Courses

A. Intermediate Algebra (No credit). (Formerly numbered 1A.) Lecture, five hours. Prerequisite: Level I Chemistry/Mathematics Preliminary Examination. Mathematics A displaces four units on the student's Study List but yields no credit toward a 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 a review of elementary and intermediate algebra. Arithmetical operations on the real numbers, algebraic notation, polynomials, rational exponents, linear and quadratic equations and inequalities, coordinate geometry. (F,W,Sp)

1. Precalculus. (Formerly numbered 1B.) Lecture, three hours; discussion, two hours. Prerequisites: course A with a grade of C – or better, or two and one-half years of high school mathematics and successful completion of the Level I Chemistry/Mathematics Preliminary Examination. The function concept. Linear and polynomial functions and their graphs, zeros of polynomials. Inverse, exponential, and logarithmic functions. Trigonometric functions.

2. Finite Mathematics for Social Science Students. Lecture, three hours; discussion, one hour. Prerequisite: course 1 or three years of high school mathematics. Not open for credit to students with credit for any course from Mathematics 110A through 199. Finite mathematics consisting of elementary logic, sets, combinatorics, probability, vectors, and matrices.

3A. Calculus for Life Science Students. Lecture, three hours; discussion, one hour. Prerequisites: three and one-half years of high school mathematics (including trigonometry) and successful completion of the Level II Chemistry/Mathematics Preliminary Examination, or completion of course 1 with a grade of C – or better. Not open for credit to students with credit in another calculus sequence. Techniques and applications of the differential calculus.

3B. Calculus for Life Science Students. Prerequisite: course 3A with a grade of C – or better. Techniques and applications of the integral calculus.

3C. Calculus for Life Science Students. Prerequisite: course 3B with a grade of C – or better. Functions of several variables, vectors, partial differentiation, and multiple integration.

3E. Calculus for Economics Students. Lecture, three hours; discussion, two hours. Prerequisite: course 3A or 31A with a grade of C – or better. Not open for credit to students with credit for course 3C. Functions of several variables; techniques of graphing, partial derivatives, maxima and minima, Lagrange multipliers. Exponential functions.

5. Introduction to Calculus. Lecture, three hours; discussion, one hour. Not open for credit to students with credit for courses 3A, 3E, or 31A. Satisfies the Letters and Science quantitative reasoning requirement. A brief look at the source of many of the quantitative methods in the physical, biological, and social sciences. The concepts, techniques, and applications of the differential and integral calculus of polynomial, rational, and exponential functions. Applications, with emphasis on the use of calculus in business and economics.

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 the Level II Chemistry/Mathematics Preliminary Examination, or completion of course 1 with a grade of C – or better. Differential calculus and applications; introduction to integration.

31AH-31BH. Calculus and Analytic Geometry (Honors Sequence). Lecture, three hours; discussion, one hour. Prerequisites: successful completion of the Level II Chemistry/Mathematics Preliminary Examination or an additional honors placement examination, consent of instructor. An honors sequence parallel to courses 31A, 31B.

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.

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 Sequence). Prerequisites: course 31BH, or 31B with a grade of A and consent of instructor. An honors sequence parallel to courses 32A, 32B.

32B. Calculus of Several Variables. Lecture, three hours; discussion, one hour. Prerequisite: course 32A with a grade of C – or better. Introduction to the integral calculus of several variables.

33A. Matrices and Differential Equations. Prerequisite: course 32A or 32AH. Introduction to matrix theory; introduction to differential equations.

33AH-33BH. Matrices, Differential Equations, and Infinite Series (Honors Sequence). Prerequisites: course 32BH, or 32B with a grade of A and consent of instructor. An honors sequence parallel to courses 33A, 33B.

33B. Infinite Series. Prerequisite: course 33A or 33AH or consent of instructor. Infinite sequences and series; complex numbers.

38A. Fundamentals of Arithmetic. 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 a one-year sequence for prospective elementary teachers in the Diversified Liberal Arts Program. Counting numbers and other subsystems of the real numbers; sets; operations, relations, algorithms; applications and problem solving. Emphasis on understanding arithmetic procedures.

38B. Fundamentals of Arithmetic. Lecture, three hours; discussion, one hour; laboratory, one hour to be arranged. 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. A continuation of course 38A. Elementary number theory; probability and statistics; the microcomputer and simple instructional programs; measurement and approximation; coordinate geometry. Other topics appropriate for the elementary classroom.

50. Elementary Statistics. (Formerly numbered 50A-50B.) Lecture, three hours; discussion, one hour. Prerequisite: three years of high school mathematics or course 1 or consent of instructor. Not open for credit to students with credit for any course from Mathematics 110A through 199 or Economics 40. Descriptive statistics, elementary probability, random variables, binomial and normal distributions. Large and small sample inference concerning means.

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.

Upper Division Courses

Mathematics 110A, 115A, 117, 120A, 131A-131B, 144, 152A, and 152B are offered each quarter. 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 Undergraduate Mathematics Office in February.

General and Teacher Training

104. Fundamental Concepts of Geometry. Lecture, three hours; discussion, one hour. Prerequisite: two years of high school mathematics including geometry. Designed for prospective elementary teachers (also see Mathematics 38A, 38B). The following topics may be included: the number lattice and Pick's theorem; graphs of equations and relations in the Cartesian plane, including examples with a finite field; the Pythagorean theorem from several points of view; an introduction to the theory of area, volume, and similarity; regular polygons and polyhedra, regular tilings of the plane; enumerative and counting problems, including some in spaces of four or more dimensions; selected topics in topology such as the Euler characteristic of the plane; and an introduction to synthetic and analytic plane geometry. Although primary emphasis is on the subject itself, rather than its social setting, in recent years the course has illustrated a number of class-tested teaching strategies that have been successful with school-age children.

106. History of Mathematics. Prerequisite: course 32A. Topics in the history of mathematics, with emphasis on the development of modern mathematics.

Algebra, Number Theory, and Logic

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 or former courses 101A-101B. The 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 Sequence). Prerequisite: consent of instructor. An 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 the theory of primes, algebraic number theory, Diophantine equations.

112A-112B-112C. Set Theory and Logic. Lecture, three hours; discussion, one hour. Prerequisites: courses 32B, 33B. **112A.** Informal axiomatic set theory presented as a foundation for modern mathematics. **112A-112B.** Predicate logic, formalized theories; Gödel's completeness and incompleteness theorems.

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's theorem.

114A-114B-114C. Computation Theory and Logic. (Formerly numbered 114A-114B.) Lecture, three hours; discussion, one hour. Prerequisites: courses 33B, 61, 115A (latter may be taken concurrently with course 114A). Finite automata: Turing machines and other models of computation; recursive functions; Church's thesis; 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; the polynomial classes P and NP; complete problems; measures of complexity; speed-up and gap theorems; lengths of proofs.

115A. Linear Algebra. (Formerly numbered 115.) Lecture, three hours; discussion, one hour. Prerequisite: course 33A. Abstract vector spaces; linear transformations and matrices; determinants; inner product spaces; low dimension eigenvector theory.

115B. Linear Algebra. Lecture, three hours; discussion, one hour. Prerequisite: course 115A. Linear transformations, conjugate spaces, duality; the 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 or former course 101A. Integers, congruences; fields, applications of finite fields; polynomials; permutations, introduction to groups.

118A-118B-118C. Combinatorial Algorithms. (Formerly numbered 118.) 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, the metrization problem.

122. Projective Geometry. Lecture, three hours; discussion, one hour. Prerequisites: courses 110A-110B, 115A. Projective spaces, especially lines and planes; homogeneous coordinates; the principles of duality; projectivities, the fundamental theorem, and the theorems of Desargues, Pappus, Steiner, and Pascal.

123. Foundations of Geometry. Lecture, three hours; discussion, one hour. Prerequisite: course 115A. Axioms and models, Euclid's geometry, Hilbert's axioms, neutral (absolute) geometry, hyperbolic geometry, Pincare's model, independence of the parallel postulate.

Analysis

131A-131B. Analysis. Lecture, three hours; discussion, one hour. **131A.** Prerequisites: courses 32B, 33B. Real numbers, point set topology in $\mathbb{R}^n$ and in metric spaces, limits, continuity, derivatives, infinite sequences and series. **131B.** Prerequisites: courses 115A, 131A. Functions of bounded variation, Riemann-Stieltjes integral, sequences and series of functions, multivariable differential calculus, implicit and inverse function theorems, extremum problems.

131AH-131BH. Analysis (Honors Sequence). Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. An honors sequence parallel to courses 131A-131B. Courses 131AH-131BH and 131CH form a full honors sequence in analysis.

131C. Complex Analysis. Lecture, three hours; discussion, one hour. Prerequisite: course 131A. Not open for credit to students with credit for course 132. Rigorous treatment of fundamental results of theory of functions of one complex variable. Topics include analytic functions, proof of Cauchy integral theorem and formula, residue theorem, winding numbers and local behavior of holomorphic functions, maximum principle, harmonic functions.

131CH. Complex Analysis (Honors). (Formerly numbered 132H.) Lecture, three hours; discussion, one hour. Prerequisites: course 131BH, consent of instructor. An honors course parallel to course 131C. Courses 131AH-131BH and 131CH form a full honors sequence in analysis.

132. Complex Analysis for Applications. Lecture, three hours; discussion, one hour. Prerequisites: courses 32B, 33B. Not open for credit to students with credit for course 131C. Introduction to the 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.

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. An 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. (Formerly numbered 135C.) Lecture, three hours; discussion, one hour. Prerequisites: courses 33A, 33B. Linear partial differential equations, particularly of the second order: the wave equation, the heat equation, and Laplace's 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 courses 141A, 141B, Electrical Engineering 103 (or former course 124A). Emphasis on both theory, with error analysis, and applications. Analysis of numerical methods for the 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 courses 140A, 140B, Electrical Engineering 103 (or former course 124A). Introduction to scientific computing, with emphasis on programming, algorithms, and applications. Case studies. Numerical methods and computer implementation for the following areas: **141A.** Nonlinear equations, systems of linear equations, optimization, interpolation, differentiation, and integration. **141B.** Differential equations, least-squares approximation, Monte Carlo methods, and linear programming.

142. Mathematical Modeling. Lecture, three hours; discussion, one hour. Prerequisites: courses 32B and 33B, or consent of instructor. An introduction to the fundamental principles and the spirit of applied mathematics. Emphasis on the manner in which mathematical models are constructed for physical problems. Illustrations from many fields of endeavor (e.g., physical science, 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's 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 (or former course 129A). Principles of linear programming, the duality theorem, the 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. (Formerly numbered 145A.) 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. (Formerly numbered 145B.) 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 144 or consent of instructor. Principles and techniques of game theory. Games in extensive form. Matrix games. The minimax theorem and calculation of optimal strategies. Stochastic games. Cooperative and noncooperative solutions of bimatrix games. Coalitional games and applications. Additional topics such as combinatorial games, repeated games, the Lemke-Howson algorithm, assignment games and the marriage problem, economic markets, cost allocation, measurement of voting power.

Probability and Statistics

150A-150B-150C. Probability and Statistics. Lecture, three hours; discussion, one hour. Prerequisites: courses 32B, 33B, 115A. Not open to students with credit for courses 152A, 152B, Electrical Engineering 131A (or former course 120A). A basic course in probability and statistics emphasizing theory and applications and aimed at a general audience. Prepares students to understand probability and statistical models in their own field as well as to pursue more advanced topics in either subject. Course 150A and the first half of 150B are devoted to probability, the remainder to statistics.

151. Stochastic Processes. Lecture, three hours; discussion, one hour. Prerequisites: courses 150A-150B or consent of instructor. An introduction to the theory and application of stochastic models, emphasizing Markov chains and pure jump processes; illustrations from queueing systems, point processes, birth and death processes, renewal theory; Poisson processes, Brownian motion.

152A-152B. Statistics. Lecture, three hours; discussion, one hour. Prerequisite for course 152A: course 32B (recommended: course 33B); for course 152B: courses 115A and 152A, or consent of instructor. Not open to students with credit for courses 150A, 150B, 150C, Electrical Engineering 131A (or former course 120A). An introductory course in the theory and applications of statistics. Condenses courses 150A-150B-150C into two quarters mainly by omitting topics, especially in probability theory.

153A-153B. Introduction to Computational Statistics. (Formerly numbered M153.) Lecture, three hours; discussion, one hour. Prerequisites: courses 115A, and 150B or 152B. Linear and nonlinear regression analysis using package programs. Emphasis on the relation between statistical theory, numerical results, and the analysis of data. **153A.** BMDP, SAS, and SPSS regression programs; general linear model theory; linear regression analysis; transforming and weighting; regression diagnostics; model building. **153B.** Analysis of variance and covariance; nonlinear regression programs, analysis, and applications; maximum likelihood analysis; robust regression.

169. 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 the 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.

169HS. Honors Seminar in Mathematics of Computer Graphics. Lecture, three hours. Prerequisites: course 169, consent of instructor. Limited enrollment (admission to be based on performance in course 169; participants need not be in an honors program). A participating seminar on topics not covered in course 169. Each student prepares a substantial course project and presents it to the class.

Special Studies

190. Honors Mathematics Seminar. Prerequisites: honors program standing, consent of instructor. A participating seminar on advanced topics in mathematics.

191. Upper Division Seminars (2 to 4 units). Prerequisites: courses 32A, 32B, 33A, 33B, consent of instructor. Limited to 15 students. Each quarter the 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 the discretion of the chair and subject to the 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 the upper division courses required for a major offered by the Mathematics Department.

Graduate Courses

Teacher Preparation

201A-201B-201C. Topics in Algebra and Analysis. Prerequisite: B.A. degree in Mathematics or equivalent. Designed for students in the mathematics-education program. Important ideas of algebra, geometry, and calculus leading effectively from elementary to modern mathematics. Approaches to the number system, point sets, geometric interpretations of algebra and analysis, integration, differentiation, series and analytic functions. May not be applied toward the M.A. degree requirements.

202A-202B. Mathematical Models and Applications. Prerequisite: B.A. degree in Mathematics or equivalent. Designed for students in the mathematics-education program. A 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 the 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's 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 the 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. The 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. Algebraic Geometry. Prerequisite: course 210A or consent of instructor. Preliminaries from the theory of commutative rings and algebras. Theory of algebraic varieties. Topics include plane curves, resolution of singularities, invariant theory, intersection theory, divisors and linear systems.

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, the principal ideal theorem, Dedekind rings, modules, projective modules, the Serre conjecture, regular local rings.

Logic and Foundations

220A-220B-220C. Mathematical Logic and Set Theory. Prerequisites: courses 112A-112B-112C or equivalent. Model theory: compactness theorem; Lowenheim-Skolem theorems; definability; ultraproducts; preservation theorems; interpolation theorems. Recursion function theory: Church's thesis; 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

226A-226B-226C. Differential Geometry. Prerequisite: course 231A 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.

228. Convex Sets. Prerequisite: course 121 or 245A or consent of instructor. Basic concepts for convex sets in topological linear spaces; separation theorems and support functions; local convexity; convex functions; Helly type theorems; duality.

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's character formula.

Topology

230. General Topology. Prerequisites: courses 131A-131B or consent of instructor. Students with credit for course 121 will not receive M.A. degree credit for this course. Topological spaces and maps, products, quotient spaces, connectedness and compactness, separation properties, local properties, completeness. Homotopy and the fundamental group.

231A. Manifold Theory. Prerequisites: courses 121 and 131A-131B, or consent of instructor. Manifolds, tangent and cotangent spaces, vector fields and integral curves, Lie brackets, differential forms and exterior derivative, Stokes' theorem on manifolds.

231B. Introduction to Homology Theory. Prerequisite: course 231A or consent of instructor. Elementary concepts of homotopy theory. Singular chains and the boundary operator, definition of homology, Mayer-Vietoris sequence, calculation of homology of standard spaces.

231C. Further Topics in Geometry and Algebraic Topology. Prerequisites: courses 231A and 231B, or consent of instructor. Topics may include cohomology and duality theorems, de Rahm's theorem, cup products, and transversality intersection theory of submanifolds. Additional topics as time permits.

232A-232B-232C. Algebraic Topology. Prerequisite: course 121 or 230 or consent of instructor. Fundamental group; homology theory, singular theory, cellular theory, computation of homology groups; cohomology theory, cup and cap products, duality; homotopy theory, fiberspaces, Hurewicz theorem, obstruction theory.

236. Advanced Topics in Geometric Topology. Prerequisites: courses 231A and 231B, or consent of instructor. Handlebody theory, transversality; PL topology; surgery. Topics vary from year to year.

237. Advanced Topics in Algebraic Topology. Prerequisites: courses 232A-232B-232C or consent of instructor. K-theory; fixed-point theory; extraordinary cohomology theories. Topics vary from year to year.

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, the axiom of choice and its equivalents, well-orderings, transfinite induction, ordinal and cardinal arithmetic. Applications to algebra: Hamel bases, the Stone representation theorem. Applications to analysis and topology: the Cantor-Bendixson theorem, counterexamples in measure theory, Borel and analytic sets, Choquet's theorem.

245A-245B-245C. Real Analysis. Prerequisites: courses 121, 131A-131B, or equivalent (course 230 may be taken concurrently). 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 R^n and 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's theorem. Cauchy's integral formula and the residue calculus. Power series. Normal families. Harmonic functions. Linear fractional transformations. Conformal mappings. Analytic continuation. Examples of Riemann surfaces. Infinite products. Partial fractions. The classical transcendental functions. Elliptic functions.

247A-247B. Classical Fourier Analysis. Lecture, three hours. Prerequisites: courses 245A-245B, 246A. Distribution on R^n and 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 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 nth 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. The 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. An in-depth introduction to topics of current interest in partial differential equations or their applications.

252A-252B-252C. Advanced Topics in Complex Analysis. 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, quasiconformal 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. Trigonometrical Series. Prerequisite or corequisite: course 245A or 246A or consent of instructor. Selected topics in Fourier series, power series, orthogonal polynomials, almost periodic functions, and completeness of sets of functions.

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. The Gel'fand 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 the theories of C* and von Neumann algebras. Applications.

Applied Mathematics

260. Introduction to Applied Mathematics. Prerequisite: course 142 or consent of instructor. The 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; multilinear extension and the Shapley value; fixed-point theorems; Nash equilibrium; nontransferable utility; lambda-transfer method. Applications to markets, cost allocation, assignment and marriage problems, voting power.

M263. Hydrodynamic Instabilities and Turbulence. (Same as Earth and Space Sciences M211.) Lecture, three hours. An introduction to the theories of hydrodynamic instability and the nonstatistical description of turbulence; stability bounds by the energy method; linear theory of instability; finite amplitude theories of post-instability flows; bounds on properties of turbulent flows by variational techniques.

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264. Applied Complex Analysis. Prerequisite: course 246A or consent of instructor. Topics include contour integration conformal mapping, differential equations in the 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 the 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's equation in bounded domains, first-order equations, wave equations, Cauchy problem, energy conservation, heat equation, fundamental solution, equations of fluid mechanics and magnetohydrodynamics.

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.

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-270E. Mathematical Aspects of Scientific Computing. (Formerly numbered 270A-270B.) 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, the 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.

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's principle. Principle of least action. Holonomic and nonholonomic systems. Hamilton's canonical equations, contact transformations, applications.

271C. Introduction to Relativity. Prerequisites: course 271A, prior knowledge of mechanics. Restricted theory of relativity. Extensions to general theory. The relativistic theory of gravitation.

272. Advanced Topics in Continuum Mechanics. Prerequisites: courses 142, 251A, or equivalent. Mathematical aspects of solid and/or fluid mechanics. Instability, wave propagation, nonlinear and stochastic phenomena.

273. Wave Mechanics. Prerequisite: consent of instructor. General concepts of mechanical systems (states, space-time, "logics," etc.). Classical and quantum examples. Correspondence principle. Spinors.

M274A. Asymptotic Methods. (Same as Civil Engineering M292.) Lecture, three hours. Prerequisites: course 132, Chemical Engineering M192A, or equivalent. The fundamental mathematics of asymptotic analysis, asymptotic expansions of Fourier integrals, method of stationary phase. Watson's lemma, method of steepest descent, uniform asymptotic expansions, elementary perturbation problems.

274B-274C. Perturbation Methods. (Formerly numbered M274B.) Lecture, three hours. Prerequisite: course 266A or equivalent. Boundary layer theory, matched asymptotic expansions, WKB theory. Problems with several time scales: Poincaré's 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. Prerequisites: courses 275A-275B. Selected topics such as Brownian motion and potential theory. Markov processes, infinite particle systems, Gaussian processes. Content varies from year to year. May be repeated for credit.

276A-276B. Mathematical Statistics. Prerequisites: courses 150A-150B-150C or 152A-152B and 131A-131B. **276A.** Bayes, admissible, and minimax decision rules; sufficiency and completeness; uniformly most powerful tests. **276B.** Fisher information; Cramer-Rao inequality; asymptotic properties of tests and estimators; maximum likelihood estimators; likelihood ratio and chi-square tests of hypotheses.

276C. Statistical Decision Theory. Prerequisite: course 276A. Invariant estimates and tests; best unbiased and locally best tests; multiple decision problems; application to the general linear model; other topics.

277. Sequential Analysis. Prerequisite: course 276A. Bayes sequential decision rules, stopping rule problems, optimality of the sequential probability ratio test, Wald's fundamental identity.

278. Nonparametric and Robust Statistics. Prerequisite: course 276B. Development of nonparametric and robust procedures for hypothesis testing, estimation in one- and two-sample problems, linear and nonlinear regression, multiple classification, density estimation.

M279A-M279B-M279C. Linear Statistical Models. (Same as Public Health M205A-M205B-M205C.) Lecture, three hours. Prerequisites: course 150C or 152B, Public Health 100C, or equivalent. Topics include linear algebra applied to linear statistical models, distribution of quadratic forms, the Gauss-Markov theorem, fixed and random component models, balanced and unbalanced designs.

M280. Computational Statistics. (Same as Biomathematics M280 and Public Health M207J.) Lecture, three hours. Prerequisites: courses 115A, 150C, or equivalent. Introduction to theory and design of statistical programs: pivoting and other technologies used in stepwise regression, nonlinear regression algorithms, algorithms for balanced and unbalanced analysis of variance, including the mixed model, iterative rescaling, and other methods for log-linear models.

Special Studies

285A-285L. Seminars. Prerequisite: consent of instructor. No more than two 285 courses may be applied toward the M.A. degree requirements except by prior consent of the graduate vice chair. Topics in various branches of mathematics and their applications by means of lectures and informal conferences with members of the staff:

285A. Seminar in the History and Development of Mathematics.

285B. Seminar in Number Theory.

285C. Seminar in Algebra.

285D. Seminar in Logic.

285E. Seminar in Geometry.

285F. Seminar in Topology.

285G. Seminar in Analysis.

285H. Seminar in Differential Equations.

285I. Seminar in Functional Analysis.

285J. Seminar in Applied Mathematics.

285K. Seminar in Probability.

285L. Seminar in Statistics.

286A-286M. Participating Seminars (No credit). Prerequisite: consent of instructor. Seminars and discussion by staff and students. No course credit is given, but the courses may be used to satisfy the participating seminar requirement for the Ph.D. S/U grading:

286A. Participating Seminar in the History and Development of Mathematics.

286B. Participating Seminar in Number Theory.

286C. Participating Seminar in Algebra.

286D. Participating Seminar in Logic.

286E. Participating Seminar in Geometry.

286F. Participating Seminar in Topology.

286G. Participating Seminar in Analysis.

286H. Participating Seminar in Differential Equations.

286I. Participating Seminar in Functional Analysis.

286J. Participating Seminar in Applied Mathematics.

286K. Participating Seminar in Probability.

286L. Participating Seminar in Statistics.

286M. Participating Seminar in Mathematics.

290. Seminar in Current Literature. For Ph.D. candidates. Readings and presentations of papers in mathematical literature under the supervision of a staff member.

370. The Teaching of Mathematics. Lecture, three hours. Prerequisites: course 3B or 31B, senior standing. A critical inquiry into present-day tendencies in the teaching of mathematics.

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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 4 units). Supervised individual reading and study on a project approved by a faculty member, which may be preparation for the M.A. essay. May be repeated for credit, but only two 596 courses may be applied toward the M.A. degree unless departmental consent is obtained.

599. Research in Mathematics (2 to 8 units). Study and research for Ph.D. dissertation. May be repeated for credit.

Mathematics/ Computer Science (Interdepartmental)

6375 Math Sciences, (213) 206-1286

Scope and Objectives

The major is a specialized and demanding one, designed for students who have strong interests and aptitudes in mathematics as well as computing and who wish to prepare themselves for advanced professional work or graduate study in certain areas of computer science or mathematics. The program concentrates on fundamental concepts and is not intended to be a general undergraduate data processing major for those interested in application fields (in fact, no such major is offered at UCLA).

This major is a cooperative program offered jointly by the Department of Computer Science in the School of Engineering and Applied Science, and the Department of Mathematics. The program, administered by the Mathematics Department, leads to the Bachelor of Science degree.

Bachelor of Science Degree

Admission

Because of limited facilities (staff, laboratories, computing resources) and the expansion of programs in the Computer Science and Mathematics Departments, this interdepartmental major may soon be disestablished. Students admitted to the University for Fall Quarter 1986 and thereafter may not have the option of entering this major but will have an opportunity to pursue one of the alternate programs available to students with an interest in computing (see the mathematics of computation major and the specialization in computing under the Mathematics Department section).

Students admitted to the pre-mathematics/computer science major prior to Fall Quarter 1986 can apply for admission to the mathematics/computer science major or to one of the alternate programs. All pre-mathematics/computer science majors applying for admission to the major are subject to the minimum entrance requirements listed in the 1985-86 *UCLA General Catalog.*

Preparation for the Major

Required: Mathematics 31A, 31B, 32A, 32B, 33A, 33B, 61, Program in Computing 10A, 10B, 10C, 30, Physics 8A, 8C.

The Major

Required: Fourteen courses, seven in mathematics and seven in computer science, distributed as follows: (1) Mathematics 110A or 117, 115A, 150B or 152A, and four additional courses from 110A through 199 (suggested: 113, 114A, 118A, 140A, 140B, 140C, 141A, 141B, 142, 144, 150A or 152B, 153A); (2) Computer Science 131, 141, 151A, 151B, 152A, 152B, 181, and one additional course from Electrical Engineering 102, 103, Mechanical, Aerospace, and Nuclear Engineering 194A, 194B, or Computer Science 111 through 199 (courses 152A and 152B are laboratory courses; each is to be taken concurrently with its mate). Credit may not be applied toward the degree for more than one of Mathematics 140A, 141A, Electrical Engineering 103.

Minimum Standards

A minimum grade of C is required in each preparation for the major course; a minimum grade of C – is required in all major courses. In addition, you must maintain a GPA of 2.0 or better in upper division mathematics courses and a GPA of 2.0 or better in upper division computer science and electrical engineering courses in the major.

If you do not earn the specified minimum grade in a particular course, you must repeat that course. If you fail to earn the minimum grade for the repeated course, you may not remain in the premajor or major.

Credit Limitations

The credit limitation rules that apply to mathematics majors also apply to mathematics/computer science majors.

Honors Program

Majors who wish to graduate with honors should apply for admission to the honors program. You may enter the program after completing two upper division mathematics courses and eight upper division units in computer science or electrical engineering courses in the major with an overall GPA of 3.6. The program consists of completing a suitable special project or participating seminar, earning a 3.6 GPA in upper division mathematics courses, and a 3.6 GPA in upper division computer science and electrical engineering courses in the major.

If you complete the program, you are awarded honors at graduation; if you demonstrate exceptional achievement, you are awarded highest honors.

Microbiology

5304 Life Sciences, (213) 825-8482

Professors

Frederick A. Eiserling, Ph.D., *Chair*
C. Fred Fox, Ph.D.
June Lascelles, Ph.D.
Rafael J. Martinez, Ph.D.
Donald P. Nierlich, Ph.D.
M. J. Pickett, Ph.D.
Sydney C. Rittenberg, Ph.D.
William R. Romig, Ph.D.
Eli E. Sercarz, Ph.D.
Anthony J. Salle, Ph.D., *Emeritus*

Associate Professors

Arnold J. Berk, M.D.
Aldons J. Lusis, Ph.D. *(Medicine)*
Mary C. Territo, M.D. *(Medicine)*
Bernadine J. Wisnieski, Ph.D.
Owen N. Witte, M.D.

Assistant Professors

Robert P. Gunsalus, Ph.D.
Joan E. McEwen, Ph.D.
Robert W. Simons, Ph.D.

Adjunct Professors

Keichi Itakura, Ph.D.
John H. Silliker, Ph.D.
Gary Wilcox, Ph.D.

Adjunct Lecturer

Laurel G. Heffernan, Ph.D.

Scope and Objectives

Microbiology at UCLA is a diverse science that includes bacteriology, virology, and the study of single mammalian 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 prepare for careers in medicine or dentistry, medical technology, industrial microbiology (including biotechnology and genetic engineering), 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 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 the graduate microbiologist.

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 fundamentally disease-oriented approach to microbiology, see the Microbiology and Immunology Department description in Chapter 15.

Bachelor of Science Degree

Pre-Microbiology Major

Students (new, transfer, or change of major) who wish to major in microbiology first register as pre-microbiology students. After completing the preparation for the major courses with an overall C – grade-point average and Microbiology 101 with a grade of C or better, you should petition to enter the major in the Undergraduate Office, 5205 Life Sciences. All preparation courses must be taken for a letter grade. Whenever possible, Microbiology 7 should be taken in place of Biology 7. If you enter with 80 or more units of credit, in order to specify pre-microbiology as your major, you must have completed one year of general chemistry; Biology 5, 7, or equivalent; one of the following: organic chemistry with laboratory (two courses), calculus-based physics, calculus (one year).

Preparation for the Major

Required: Microbiology 7 (or Biology 7); Biology 5, 8; Chemistry 11A, 11B/11BL, 11C/11CL, 21, 23, 25; Mathematics 3A, 3B, 3C (or 31A, 31B, 32A); Physics 6A, 6B, 6C (or 8A/8AL, 8B/8BL, 8C/8CL, 8D/8DL).

The Major

Required: A total of 40 upper division units, including Microbiology 101, 102, C103A or C103B or 110, 119, M185; Chemistry 152; four additional upper division courses from the departmental list or from related departments selected with approval of the faculty adviser. All major courses must be taken for a letter grade, with a minimum overall 2.0 GPA. A maximum of four units of Microbiology 199 may be applied toward the major. Credit for 199 courses from other departments may not be applied. In addition, you must earn a C or better in courses 101 and 102 before continuing with further departmental upper division work. If you repeat one of these courses, you must earn a grade of B or better to remain in the major.

Honors Program

An overall grade-point average of 3.2 and a 3.5 in the premajor and major are required for graduation with honors in microbiology. Junior standing and the sponsorship of a faculty adviser are also required. For further information, contact the Undergraduate Office.

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. Information is available from the Graduate Adviser, Department of Microbiology, 5304 Life Sciences, UCLA, Los Angeles, CA 90024.

The department accepts relatively few students whose objective is a master's degree; applicants should contact a potential faculty sponsor at the time of application.

Ph.D. Degree

Admission

For admission, you must have completed an undergraduate major in bacteriology, 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) Aptitude Test directly to the department. The Advanced Test in Biology or Chemistry is strongly recommended. Evidence (via letters of recommendation, interviews, or direct knowledge) of your research potential and motivation is also required. Completion of a master's degree is not normally required.

Course Requirements

Formal Lecture/Laboratory Courses

Biochemistry: Chemistry M253 (six units; offered only in the Fall Quarter; to be completed during the first year) and Microbiology 225/225L or M239/M239L (lecture and laboratory, eight units each; offered in the Winter and Spring Quarters respectively; to be completed during the first year) are required.

Genetics and Regulation: One 200-level, four-unit course to be selected from the current course listings maintained in the Graduate 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 Graduate Office.

You are expected to complete a course in physical chemistry (Chemistry 156). This requirement can be waived on the basis of work done before entering UCLA.

Student-Participation Seminar Courses

Each quarter, seminar courses in which students read and report on current scientific research literature are organized. You must enroll in five such courses (10 units), including two offerings in the C204 series, during your first two years in residence.

Laboratories

During your first 15 months in residence, you rotate for one quarter each through three laboratories within the department (outside laboratories are permissible with consent of the advisory committee). You normally enroll in Microbiology 596 for four units of credit for each laboratory.

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 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 quarters. Prior experience at another institution is acceptable when approved by the departmental graduate adviser.

Qualifying Examinations

The written 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.

Final Oral Examination

A dissertation on a subject of your choice selected in consultation with the 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 courses 7, 10, 101, Biology 5, 6, 7, 8, or equivalent courses taken elsewhere. Designed for the nontechnical student; an introduction to the biology of microorganisms (bacteria, viruses, protozoa, algae, fungi), their significance as model systems for understanding fundamental cellular processes, and their role in human affairs. (F,W,Sp)

7. The New Cell Biology. Lecture, three hours; laboratory, two hours. Prerequisites: Biology 5, Chemistry 11A. Designed for undergraduate students intending to major in microbiology and others as interested. Lecture and laboratory sessions to give students basic elements of scientific observation using prokaryotic and eukaryotic cell structure and cellular interactions. Intensive training in use of light microscope techniques. Actual on-hand training in microscopic techniques using video microscope, slides, and demonstrations. Extensive exposure to landmark observations and experiments in development of modern cell biology and structure. Mr. Fox, Mr. Witte (W)

10. General Microbiology. Lecture, three hours; laboratory, six hours. Prerequisites: course 7 (or Biology 7), Biology 5, Chemistry 11A, 15. Designed for health sciences students. Not open for credit to students with credit for Microbiology 101; does not substitute for course 101 in the major. An introduction to the biology of bacteria and their role in diseases of man. Ms. Wisnieski (Sp)

Upper Division Courses

101. Fundamentals of Bacteriology. Lecture, three hours; laboratory, six hours. Prerequisites: course 7 (or Biology 7), Biology 5, Chemistry 21, 23, 25. The historical foundations of the science; introduction to bacterial structure, physiology, biochemistry, genetics, and ecology. Mr. Gunsalus (Sp), Ms. Lascelles (F), Ms. McEwen (Sp), Mr. Romig (F)

102. Introductory Virology. Lecture, three hours; laboratory, four hours. Prerequisite: course 101. Biological properties of bacterial and animal viruses; replication; methods of detection; interactions with host cells and multicellular hosts.
Mr. Berk, Mr. Romig (W)

C103A. Biochemistry and Biology of Bacterial Infection. (Formerly numbered 103.) Lecture, three hours. Prerequisites: course 101, Chemistry 152. The biochemical properties of bacteria which afford the potential for pathogenicity. The epidemiology and transmission of disease; chemotherapy and drug resistance. Concurrently scheduled with course C203A. Mr. Martinez (W)

C103B. Biochemistry of Host Defense Mechanisms. Lecture, three hours. Prerequisites: courses 101, M185, Chemistry 152. The biochemical basis of host defense mechanisms, with emphasis on the role of immunoglobulins in combating microbial invasion; the biology and biochemistry of phagocytic cells and constitutive mechanisms of host defense. Concurrently scheduled with course C203B.
Mr. Martinez (Sp)

C104A. Molecular Biology of Bacterial Growth (2 units). Lecture, three hours. Prerequisites: course 101, Biology 8, and Chemistry 25, or equivalent, or consent of instructor. Introduction to bacterial physiology, with lectures stressing its experimental foundation. Topics include chromosome replication, gene expression, control of growth rate and cell division, role of cyclic AMP and other regulatory factors, cloning and genetic engineering. May be concurrently scheduled with course C204A.
Mr. Nierlich (Sp, five weeks)

C104B. Biochemical Genetics of Eukaryotic Cells (2 units). Lecture, three hours. Prerequisites: prior background in biochemistry and genetics. Concepts in biochemical genetics, illustrated with recent research papers dealing with genetic analysis in yeast, drosophila, and mammalian systems. Topics include somatic cell genetics, gene mapping, mitochondrial genetics, homeotic genes, transposable elements, gene amplification, and other diseases. May be concurrently scheduled with course C204B.
Mr. Lusis (F, second five weeks)

C104C. The Mammalian Cell as a Microorganism (2 units). Lecture, three hours. Prerequisites: Chemistry 152, consent of instructor. The cultured mammalian cell as an experimental system for the 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 the study of normal growth and development, disease mechanisms and cancer. May be concurrently scheduled with course C204C.
Mr. Fox (F, first five weeks)

C104E. RNA Tumor Viruses (2 units). Lecture, three hours. Prerequisites: Chemistry 152, consent of instructor. The interactions of RNA tumor viruses with differentiating tissues, such as the immune system and erythroid development. May be concurrently scheduled with course C204E.
Mr. Witte (Sp, five weeks)

105AH-105BH-105CH. Honors Laboratory in Bacterial Pathogenesis. Laboratory, 12 hours. Prerequisites: honors standing, consent of instructor. Highly recommended; course C103A. Limited enrollment. Current research projects on the biochemistry and genetics of the bacterial infectious process under direct supervision of instructor. **105AH.** The pathogen's genetic component, focusing on plasmid encoded functions. **105BH.** Effects of genetic alterations on the pathogen's proteins and LPS. **105CH.** Examination of the interaction of genetically modified pathogens with the host and host-denied components.
Mr. Martinez (F, 105AH; W, 105BH; Sp, 105CH)

108. Hematology (2 units). Prerequisites: senior standing, consent of department. Diagnostic procedures used for the study of normal and pathological blood cells. Ms. Territo (Sp)

110. The Microbiology of Infection. Lecture, three hours; laboratory, six hours. Prerequisites: courses 101, 102, and Chemistry 152, or consent of instructor. The salient characteristics of bacteria, rickettsiae, and viruses, both pathogenic and adventitious, associated with diseases of man. Mr. Pickett (F)

C111. Biology of the Prokaryotic Cell. (Formerly numbered 111.) Lecture, three hours; discussion, one hour. Prerequisites: course 101 and Chemistry 152, or consent of instructor A review of current knowledge of the 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. Mr. Eiserling, Ms. Wisnieski (W)

113. Bacterial Metabolism. Lecture, three hours. Prerequisites: course 101 and Chemistry 152, or consent of instructor. Aspects of energy generation and biosynthesis in relation to bacterial growth in pure culture and natural environment. Selected topics on readings from the current literature.
Ms. Lascelles (W)

119. Microbial Genetics and Genetic Engineering. Lecture, three hours; discussion, one hour. Prerequisites: course 102 and Biology 8, or consent of instructor. Genetics of bacteria and bacteriophages, with emphasis on recombinant DNA technology and use of microbial systems in genetic engineering.
Mr. Simons (Sp)

151. Principles of Food Microbiology. Lecture, three hours. Prerequisite: course 101 (or equivalent with consent of instructor). Fundamental principles of food microbiology. Emphasis on basic microbiological principles as applied to food products and processing. Science-oriented approach rather than technology oriented. Readings in past and current research literature in food microbiology. Mr. Silliker (W)

M185. Immunology. (Same as Biology M185 and Microbiology and Immunology M185.) Lecture, three hours; discussion, one hour. Prerequisites: Biology 8, Chemistry 23, 25. Recommended corequisite: Chemistry 152 or 156. Introduction to experimental immunobiology and immunochemistry; cellular and molecular aspects of humoral and cell immune reactions.
Mr. Clark, Mr. Sercarz (F)

M186. Experimental Design in Immunology. (Same as Biology M186 and Microbiology and Immunology M186.) Laboratory, 12 hours. Prerequisites: course M185, consent of instructor. Corequisite: course M187. Emphasis on a limited number of situations designed to train the student in organizing and evaluating immunological laboratory experiments.
Mr. Clark, Mr. Sercarz (W)

M187. Immunology Seminar (2 units). (Same as Biology M187 and Microbiology and Immunology M187.) Prerequisites: course M185, consent of instructor. Corequisite: course M186. Student presentation of selected papers from the immunology literature. Designed to serve as a forum for the critical analysis of research papers.
Mr. Clark, Mr. Sercarz (W)

189. Immunological Methods. Lecture, two hours; laboratory, four hours. Prerequisite: course M185. Immunological and immunochemical techniques used in the modern research and clinical laboratory. (Sp)

195. Proseminar (2 units). Discussion, one hour. Prerequisites: senior standing, consent of instructor. Limited enrollment. Discussion by small groups of students and instructor on current research literature. Topic announced each quarter. (F,W,Sp)

199. Special Studies in Microbiology (2 to 8 units). Prerequisites: course 101 and Chemistry 152 with grades of B or better, junior standing, B average in the premajor and major. Individual research project under the direct supervision of a departmental faculty member. A copy of the report describing the research must be filed with the Undergraduate Office at the end of the quarter. Four units may be applied toward the major. May be repeated for a maximum of 16 units. (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 quarters are required. A progress report must be submitted to the faculty sponsor at the end of each of the first two quarters, with the honors thesis submitted at the end of the final quarter. A maximum of four units may be applied toward the major, with the balance applied toward the B.S. degree requirements. (F,W,Sp)

Graduate Courses

C203A. Biochemistry and Biology of Bacterial Infection. Lecture, three hours. The biochemical properties of bacteria which afford the potential for pathogenicity. The epidemiology and transmission of disease; chemotherapy and drug resistance. Concurrently scheduled with course C103A. Graduate term paper on a topic approved by the instructor required.
Mr. Martinez (W)

C203B. Biochemistry of Host Defense Mechanisms. Lecture, three hours. The biochemical basis of host defense mechanisms, with emphasis on the role of immunoglobulins in combating microbial invasion; the biology and biochemistry of phagocytic cells and constitutive mechanisms of host defense. Concurrently scheduled with course C103B. Graduate term paper on a topic approved by the instructor required. Mr. Martinez (Sp)

C204A. Molecular Biology of Bacterial Growth (2 units). Lecture, three hours; discussion, one hour. Prerequisites: course 101, Biology 8, and Chemistry 25, or equivalent, or consent of instructor. Introduction to bacterial physiology, with lectures stressing its experimental foundation. Topics include chromosome replication, gene expression, control of growth rate and cell division, role of cyclic AMP and other regulatory factors, cloning and genetic engineering. May be concurrently scheduled with course C104A. Includes an additional discussion section for graduate students on the research literature and methodology. S/U or letter grading. Mr. Nierlich (Sp, five weeks)

C204B. Biochemical Genetics of Eukaryotic Cells (2 units). Lecture, three hours; discussion, one hour. Prerequisites: prior background in biochemistry and genetics. Concepts in biochemical genetics, illustrated with recent research papers dealing with genetic analysis in yeast, drosophila, and mammalian systems. Topics include somatic cell genetics, gene mapping, mitochondrial genetics, homeotic genes, transposable elements, gene amplification, and other diseases. May be concurrently scheduled with course C104B. Includes an additional discussion section for graduate students on the research literature and methodology. S/U or letter grading.
Mr. Lusis (F, second five weeks)

C204C. The Mammalian Cell as a Microorganism (2 units). Lecture, three hours; discussion, one hour. Prerequisites: Chemistry 152, consent of instructor. The cultured mammalian cell as an experimental system for the 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 the study of normal growth and development, disease mechanisms and cancer. May be concurrently scheduled with course C104C. Includes an additional discussion section for graduate students on the research literature and methodology. S/U or letter grading.
Mr. Fox (F, first five weeks)

C204E. RNA Tumor Viruses (2 units). Lecture, three hours; discussion, one hour. Prerequisites: Chemistry 152, consent of instructor. The interactions of RNA tumor viruses with differentiating tissues, such as the immune system and erythroid development. May be concurrently scheduled with course C104E. Includes an additional discussion section for graduate students on the research literature and methodology. S/U or letter grading. Mr. Witte (Sp, five weeks)

C211. Biology of the Prokaryotic Cell. Lecture, three hours; discussion, one hour. Prerequisites: course 101 and Chemistry 152, or consent of instructor. A review of current knowledge of the 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. Mr. Eiserling, Ms. Wisnieski (W)

214. Methods in Membrane Biology. Lecture/discussion, three hours; laboratory, nine hours. Prerequisite: consent of instructor. Emphasis on the basic techniques for isolating and characterizing biological membranes and component molecules. Basic and advanced techniques of membrane biochemistry and biophysics. Ms. Wisnieski (W, alternate years)

221U-221Z. Seminars and Symposia on Molecular Biology (2 to 4 units each). Lecture, two hours; discussion, three hours. Prerequisite: consent of instructor. Seminar courses which integrate topically with symposia organized and sponsored by the Molecular Biology Institute. These international symposia feature leading researchers in selected areas of molecular biology. Students receive an abstract booklet for the symposium and use the abstracts as the starting point for weekly presentations on the topics to be treated at the symposium; in this way they prepare for participation in the symposium. Topics are announced each year on September 1 by the Department of Microbiology and the Molecular Biology Institute. Mr. Fox and the Staff (W)

M223. Membrane Research Seminar (2 units). (Same as Microbiology and Immunology M223.) Prerequisite: consent of instructor. Critical discussions of the current literature in membrane research, with emphasis on the relationship between structure and function in lipid bilayers. May be repeated for credit.
Mr. Bramhall, Ms. Wisnieski

225. Biochemical Methods in Microbial and Cell Biology (2 units). Prerequisite: consent of instructor. Emphasis on techniques for purification and characterization of proteins, including cell disruption, column chromatography, gel electrophoresis, ultracentrifugation, various optical methods, and use of radioisotopes. Mr. Lusis (W, alternate years)

225L. Laboratory in Biochemical Methods in Microbial and Cell Biology (6 units). (Formerly numbered 225.) Laboratory, 12 hours. Prerequisite: consent of instructor. Corequisite: course 225. Laboratory in techniques for purification and characterization of proteins, including cell disruption, column chromatography, gel electrophoresis, ultracentrifugation, various optical methods, and use of radioisotopes. Mr. Lusis (W, alternate years)

M230A. Structural Molecular Biology (2 units). (Same as Biology M230A and Chemistry M230A.) Lecture, two hours; discussion, one hour. Prerequisite: consent of instructor based on a written research proposal. Fundamentals of electron microscopy of macromolecules and supramolecular structures, emphasizing quantitative microscopy, high resolution techniques, nucleic acid analysis, and studies on viruses and protein crystals.
Mr. Eiserling, Ms. Kasamatsu (F, alternate years)

M230C. Structural Molecular Biology Laboratory. (Same as Biology M230C and Chemistry M230C.) Laboratory, 10 hours. Prerequisite: consent of instructor based on a written research proposal. Practical experience with electron microscopy of macromolecules and supramolecular structures, emphasizing quantitative microscopy, high resolution techniques, nucleic acid analysis, and studies on viruses and protein crystals.
Mr. Eiserling, Ms. Kasamatsu (F, alternate years)

235. Synthesis and Application of Oligonucleotides (2 units). Prerequisite: consent of instructor. Chemical methods for the synthesis of oligonucleotides and use of them for studies of molecular biology. Mr. Itakura (Sp)

235L. Laboratory Synthesis and Application of Oligonucleotides (6 units). Laboratory, 12 hours. Corequisites: course 235, consent of instructor. Laboratory in advanced methods in oligonucleotide synthesis and application. Oligonucleotides are synthesized chemically by either the phosphotriester or phosphite method and used for site specific mutation experiments. The resultant mutant is screened by the oligonucleotides.

M239. Techniques in Nucleic Acid Research (2 units). (Same as Biology M239.) Highly recommended corequisite: course M239L. Advanced methods in characterization of genes, including sequence determination. Isolation of nucleic acids by centrifugation, chromatography, and electrophoresis, and characterization by restriction mapping and blot hybridization. Cloning in bacterial and plasmid vectors, sequence determination by the dideoxy technique, computer analysis of sequences.
Mr. Nierlich, Mr. Simpson (Sp, alternate years)

M239L. Laboratory in Nucleic Acid Research (6 units). (Formerly numbered M239.) (Same as Biology M239L.) Laboratory, 12 hours. Corequisite: course M239. Laboratory in advanced methods in characterization of genes, including sequence determination. Isolation of nucleic acids by centrifugation, chromatography, and electrophoresis, and characterization by restriction mapping and blot hybridization. Cloning in bacterial and plasmid vectors, sequence determination by the dideoxy technique, computer analysis of sequences.
Mr. Nierlich, Mr. Simpson (Sp, alternate years)

M246. Computer Analysis of Genetic Organization. (Same as Biology M246.) Lecture, two hours; laboratory, six hours. Prerequisites: course 119 or Biology 144 or equivalent, and Biology 8. Lectures and laboratory instruction in contemporary procedures for the analysis of nucleic acid and protein sequence data with the computer. No prior computer experience is necessary; students gain both general and specialized facility with IBM PC and Digital VAX computers.
Mr. Nierlich, Mr. Simpson (Sp, alternate years)

250. Seminar in Microbial Metabolism (2 units). Prerequisite: consent of instructor. Discussion and student presentations of recent work in the areas of genetic regulation and physiology of bacterial metabolism. Mr. Gunsalus (F,W)

251. Seminar in Regulation and Differentiation (2 units). S/U grading.
Mr. Gunsalus, Mr. Nierlich (F)

253. Seminar in Biochemistry of Host Defense Mechanisms (2 units). Lecture/discussion, one hour. Prerequisite: consent of instructor. Discussion of the literature dealing with host defense mechanisms. The biochemical mechanisms of action of host defense. S/U or letter grading. Mr. Martinez (F)

255. Seminar in 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. Ms. EcEwen (F)

256. Seminar in Microbial Genetics (2 units).
Mr. Eiserling, Mr. Romig (F,W,Sp)

M258A. Molecular Genetics of the Immune System (2 units). (Same as Biology M250A and Microbiology and Immunology M258A.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or Microbiology and Immunology 202A or equivalent or consent of instructor. Reading and discussion of current research articles on immunoglobulin I and II, oncogenes of the immune system, T cell antigen receptor, and loci affecting differentiation. S/U or letter grading. Mr. Wall and the Staff (W, five weeks)

M258B. T and B Cell Function (2 units). (Same as Biology M250B and Microbiology and Immunology M258B.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or Microbiology and Immunology 202A or equivalent or consent of instructor. Reading and discussion of current research articles on ontogeny, activation, and effector function of T and B cells. S/U or letter grading.
Mr. Bonavida and the Staff (W, five weeks)

M258C. Major Histocompatibility Complexes (2 units). (Same as Biology M250C and Microbiology and Immunology M258C.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or Microbiology and Immunology 202A or equivalent or consent of instructor. Reading and discussion of current research articles on the structure of human and murine MHC chromosomal regions and genes, MHC polymorphism, MHC-like systems, MHC-linked genes, MHC and disease, and nonimmune function of MHC. S/U or letter grading.
Mr. Clark, Ms. Scofield (Sp, five weeks)

M258D. Immunopathology (2 units). (Same as Biology M250D and Microbiology and Immunology M258D.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or Microbiology and Immunology 202A or equivalent 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. Fahey, Mr. Porter (Sp, five weeks)

M258E. Immunoregulation (2 units). (Same as Biology M250E and Microbiology and Immunology M258E.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or Microbiology and Immunology 202A or equivalent or consent research 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)

M258F. Immunochemistry (2 units). (Same as Biology M250F and Microbiology and Immunology M258F.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or Microbiology and Immunology 202A or equivalent or consent of instructor. Reading and discussion of current research articles on the immunochemistry of antibodies, antigens, and complement, antigenic recognition, antibody restriction. S/U or letter grading.
Mr. Schumaker, Ms. Wisnieski (F or Sp, five weeks)

M260. Immunology Forum (2 units). (Same as Microbiology and Immunology M260.) Prerequisite: course M185. A broad range of current topics in immunology presented and discussed at an advanced frontier level. A continuing UCLA-wide, general graduate-level seminar involving faculty, postdoctoral immunologists, and graduate students from diverse departments. S/U or letter grading.
Mr. Sercarz (F,W,Sp)

M263. Cellular Immunology Seminar (2 units). (Same as Microbiology and Immunology M263.) Prerequisite: consent of instructor. Critical discussions of the current literature in T and B cell immunology, with emphasis on molecular mechanisms.
Mr. Sercarz (F,W,Sp)

270. Seminar in 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 in 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)

290. Seminar in 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. (F,W,Sp)

M298. Seminar on 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. committee. 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. A teaching apprenticeship under the 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 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).

Molecular Biology
(Interdepartmental)

168 Molecular Biology Institute,
(213) 825-1018

Professors

Daniel E. Atkinson, Ph.D. *(Biochemistry)*
Marcel A. Baluda, Ph.D. *(Pathology)*
Paul D. Boyer, Ph.D. *(Biochemistry)*
William R. Clark, Ph.D. *(Biology/Immunology)*
Edward M.F. De Robertis, M.D., Ph.D. *(Biological Chemistry)*
Richard E. Dickerson, Ph.D. *(Biochemistry and Geophysics), Director*
David S. Eisenberg, Ph.D. *(Chemistry and Molecular Biology)*
Frederick A. Eiserling, Ph.D. *(Microbiology)*
John H. Fessler, Ph.D. *(Biology and Molecular Biology)*
C. Fred Fox, Ph.D. *(Microbiology and Molecular Biology)*
Dohn G. Glitz, Ph.D. *(Biological Chemistry)*
Robert Goldberg, Ph.D. *(Biology)*
Michael Grunstein, Ph.D. *(Biology and Molecular Biology)*
Isaac M. Harary, Ph.D. *(Biological Chemistry)*
Harvey R. Herschman, Ph.D. *(Biological Chemistry)*
Wayne L. Hubbell, Ph.D. *(Ophthalmology and Chemistry)*
Harumi Kasamatsu, Ph.D. *(Biology)*
James A. Lake, Ph.D. *(Biology and Molecular Biology)*
George G. Laties, Ph.D. *(Biology)*
Jeffrey Miller, Ph.D. *(Biology)*
Elizabeth F. Neufeld, Ph.D. *(Biological Chemistry)*
Donald P. Nierlich, Ph.D. *(Microbiology)*
James C. Paulson, Ph.D. *(Biological Chemistry)*
Dan S. Ray, Ph.D. *(Biology and Molecular Biology)*
Emil Reisler, Ph.D. *(Biochemistry and Molecular Biology)*
Winston A. Salser, Ph.D. *(Biology and Molecular Biology)*
Verne N. Schumaker, Ph.D. *(Biochemistry and Molecular Biology)*
Larry J. Shapiro, M.D., *in Residence (Biological Chemistry)*
David S. Sigman, Ph.D. *(Biological Chemistry)*
Larry Simpson, Ph.D. *(Biology)*
Roberts A. Smith, Ph.D. *(Biochemistry)*
J. Philip Thornber, Ph.D. *(Biology and Molecular Biology)*
Joan S. Valentine, Ph.D. *(Chemistry and Biochemistry)*
Randolph Wall, Ph.D. *(Microbiology and Immunology)*
Richard L. Weiss, Ph.D. *(Biochemistry)*
Charles A. West, Ph.D. *(Biochemistry)*
Felix O. Wettstein, Ph.D. *(Microbiology and Immunology)*
William T. Wickner, M.D. *(Biological Chemistry)*
Irving Zabin, Ph.D. *(Biological Chemistry)*
Clara M. Szego, Ph.D., *Emeritus (Biology)*

Associate Professors

Arnold J. Berk, M.D. *(Microbiology)*
Clifford F. Brunk, Ph.D. *(Biology)*
Kathryn L. Calame, Ph.D. *(Biological Chemistry)*
Steven G. Clarke, Ph.D. *(Chemistry and Biochemistry)*
Asim Dasgupta, Ph.D. *(Microbiology and Immunology)*
Jay D. Gralla, Ph.D. *(Biochemistry)*
John M. Jordan, Ph.D. *(Biochemistry and Molecular Biology)*
Judith A. Lengyel, Ph.D. *(Biology)*
Aldons J. Lusis, Ph.D., *in Residence (Medicine)*
Harold G. Martinson, Ph.D. *(Biochemistry and Molecular Biology)*
Allan J. Tobin, Ph.D. *(Biology)*
Elaine M. Tobin, Ph.D. *(Biology)*
Bernadine J. Wisnieski, Ph.D. *(Microbiology)*
Owen N. Witte, M.D. *(Microbiology)*

Assistant Professors

J. Chlöe Bulinski, Ph.D. *(Biology)*
Robert E. Cohen, Ph.D. *(Biochemistry)*
Juli F. Feigon, Ph.D. *(Biochemistry)*
Lawrence T. Feldman, Ph.D. *(Microbiology and Immunology)*
Robert P. Gunsalus, Ph.D. *(Microbiology)*
Michael Lovett, M.D., Ph.D. *(Microbiology and Immunology)*
Kevin McEntee, Ph.D. *(Biological Chemistry)*
Joan E. McEwen, Ph.D. *(Microbiology)*
Douglas C. Rees, Ph.D. *(Biochemistry)*
Robert W. Simons, Ph.D. *(Microbiology)*
S. Larry Zipursky, Ph.D. *(Biological Chemistry)*

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 drawn from participating departments and from the Molecular Biology Institute. Areas for study include structure and function of macromolecules, molecular genetics, and virology; bioenergetics, catalysis, and control; molecular basis of chromosome replication and gene expression and of cancer and its control.

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 quarters 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 quarters 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. Copies of materials sent to the Graduate Admissions Office should also be sent directly to the Graduate Office, Molecular Biology Program, 168 MBI, UCLA, Los Angeles, CA 90024.

Course Requirements

The usual program is two regular courses per quarter in addition to laboratory research, or the equivalent of 12 quarter units of upper division or graduate work. Six quarters of Molecular Biology M298 are required.

Teaching Experience

Teaching experience is encouraged, although it is not a requirement for the degree.

Qualifying Examinations

Examinations are given in Molecular Biology M298, and four must be passed. 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 on 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. committee. 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 M248, M253, M255, M257, M261, M263, M264A-M264B-M264C, 265, 266A-266B-266C, M267, M269, M298

Biology 227, 228, 229, M230A, M230B, M230C, M230D, 231, 233A-233B, 234A, 238, M248, 255, 280, M282, 294, M298

Chemistry M230A, M230B, M230C, M230D, M253, M255, M257, 259, M261, 262, M263, M264A-M264B-M264C, 266, M267, M269, 279, M298

Microbiology 250, 251, 253, 256, M258A, M258B, M260, M263, 270, M298

Microbiology and Immunology 208, 250, 254, M256, M258A, M258B, 261, 262, 265, M282, M293, M298

Near Eastern Languages and Cultures

376 Kinsey Hall, (213) 825-4165

Professors

Amin Banani, Ph.D. *(Persian and History)*
Arnold J. Band, Ph.D. *(Hebrew)*
Andras Bodrogligeti, Ph.D. *(Turkic and Iranian)*
Seeger A. Bonebakker, Ph.D. *(Arabic)*
Giorgio Buccellati, Ph.D. *(Ancient Near East and History)*
John Callender, Ph.D. *(Egyptology)*
Herbert A. Davidson, Ph.D. *(Hebrew), Chair*
Ismail Poonawala, Ph.D. *(Arabic)*
Yona Sabar, Ph.D. *(Hebrew)*
Avedis K. Sanjian, Ph.D. *(Narekatsi Professor of Armenian Studies)*
Hanns-Peter Schmidt, Ph.D. *(Indo-Iranian)*
Stanislav Segert, Ph.D. *(Biblical Studies and Northwest Semitics)*
Wolf Leslau, Docteur ès Lettres, *Emeritus*
Moshe Perlmann, Ph.D., *Emeritus*

Associate Professors

Elizabeth Carter, Ph.D. *(Near Eastern Archaeology)*
Lev Hakak, Ph.D. *(Hebrew)*
Thomas Penchoen, Ph.D. *(Berber and Arabic)*

Lecturers

Shimeon Brisman *(Hebrew)*
David L. Lieber, D.H.L. *(Hebrew)*

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, and Jewish studies. Masters 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 four fields: (1) Ancient Near Eastern Civilizations, (2) Arabic, (3) Hebrew, and (4) 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.

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 quarters 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, 130, 170, History 105, M191A, 193D, 203, Iranian 169, 170; three courses in archaeology and art from Ancient Near East 160A, 160B, 161A, 161B, 161C, 162, Art History 102; one course in research methodology (such as Anthropology 115Q, 115R, 116P, or M116Q, or Linguistics 120A, 120B, or English 100A, 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 quarters 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, 130, 150A, 150B, 160A, 160B, Art History 102, 105A, Classics 168, Greek 131, History 105, 193D, 194B, Iranian 169, 170, Latin 120.

Bachelor of Arts in Arabic

Students majoring in Arabic may combine the major with the interdepartmental Program 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, 150A-150B.

The Major

Required: Fourteen courses, including Arabic 102A-102B-102C, Islamics 110; six courses from Arabic 120, 130, 132, 140; two courses from Arabic 111A, 111B, 111C, 112A, 112B, 112C, 114A, 114B, 114C; two courses from Geography 187, History 106A, 106B, 106C.

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 quarters of Hebrew 120; 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, 192A, 192B.

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, Jewish Studies M150A-150B, 151A-151B, 199, and five other upper division courses. At least two of the five must be courses in the areas of Hebrew, Jewish history, or Yiddish. The remaining three 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) Aptitude 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 will not be 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.

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 case of the ancient Near Eastern field, you may concentrate on a combination of both language and literature with Near Eastern archaeology.

Foreign Language Requirement

You are required to pass an examination in one major modern European language other than English by the end of your third quarter 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) Educational Testing Service (ETS) examination 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 on the graduate level. All candidates are required to take one quarter of Near Eastern Languages 200.

Students in ancient Near Eastern civilizations are required to study two ancient languages of the ancient Near East (Ancient Egyptian, Akkadian, Aramaic, or Hebrew) and the history and archaeology of the related area. The area of concentration may be either the linguistic, literary, or archaeological aspect of the discipline.

Students in Hebrew are required to study Hebrew and another Semitic language; in Semitics, three Semitic languages; in Turkish, two Turkic languages; in Arabic, Armenian, and Iranian, the major language and one culturally related Near Eastern language.

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

After completion of course requirements and the foreign language examination, you are required to take a written comprehensive final examination in your major and related fields.

Ph.D. Degree

Admission

In addition to the regular University requirements, an M.A. or equivalent in your field, the Graduate Record Examination (GRE) Aptitude 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 will not be 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.

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 all areas of specialization, your program of study is selected in consultation with your adviser.

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 options: (1) passing the Educational Testing Service (ETS) examination 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 quarter in residence and the second language no later than the beginning of the fourth quarter.

Course Requirements

If you are specializing in the languages of the Near East, you are expected to take the equivalent of one year of general linguistics and one year of grammar in your field of concentration (e.g., Semitics or Turkic). You must also achieve competence in three culturally related languages within your field of concentration, with particular emphasis on two. You are also advised to acquaint yourself with the historical, literary, religious, and social background of the various language areas selected.

If you are specializing in the literatures of the Near East, you are required to achieve competence in two languages; your second language must be a literary language from the cultural area related to the first (e.g., a Hebraist can choose Akkadian, Arabic, Aramaic, or Yiddish; an Arabist can choose Persian or Turkish, and so on). You must also be familiar with the history of literary criticism and methods of literary research. This requirement may be fulfilled by taking courses offered by various departments at UCLA, particularly the course in literary criticism offered by the English Department or the course in the methodology of comparative literature.

If you are specializing in ancient Near Eastern civilizations, you are required to achieve competence in two ancient languages. You may concentrate in either the linguistic, literary, or archaeological aspect of the discipline.

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 lan-

guages, with emphasis on one of them. Candidates in ancient Near Eastern civilizations 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. The political and cultural institutions of ancient Egypt and the 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. Callender (alternate years)

120A-120B-120C. Elementary Ancient Egyptian. Lecture, three hours; laboratory, two hours. Prerequisite: consent of instructor. Grammar and texts.
Mr. Callender

121A-121B-121C. Intermediate Ancient Egyptian. Lecture, three hours. Prerequisites: courses 120A-120B-120C. Readings in ancient Egyptian literature.
Mr. Callender

123A-123B. Coptic. Lecture, three hours. Prerequisite: consent of instructor. An introduction to Coptic grammar and reading of Coptic texts.
Mr. Callender

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. Callender

130. Ancient Egyptian Religion. Lecture, three hours. An 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. Callender

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. Callender, Mr. Segert

160A-160B. Introduction to Near Eastern Archaeology. Lecture, three hours. Terminology, geography, principles, strategy of research, bibliography, and a general survey of Near Eastern archaeology.
Ms. Carter (alternate years)

161A-161B-161C. Archaeology of Mesopotamia. Prerequisite: consent of instructor. Survey of the 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. A survey of the archaeology of Palestine and the Sinai Peninsula from the Bronze Age to the destruction of Jerusalem in A.D. 70, with emphasis on the geographic setting and relationships to the other cultures of the Near East.
Mr. Segert (alternate years)

163A-163B. Archaeology of Iran. Lecture, three hours. Designed to introduce students to Iranian archaeology from prehistoric through Achaemenid times. **163A.** The prehistoric and protohistoric phases of Iranian archaeology. **163B.** The archaeology of Elam, the Iron Age, and the Achaemenid Empire. Ms. Carter

164A-164B-164C. The Archaeology of the Historic Periods in Mesopotamia. Prerequisites: courses 161A-161B-161C and History 105, or consent of instructor. Survey of the main archaeological periods in Mesopotamia, with special emphasis on the 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 is 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. Mr. Segert

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. Callender

211A-211B. Texts of the Greco-Roman Period. Prerequisite: course 121C. Introduction to the grammar and orthography of hieroglyphic texts from Greco-Roman temples. Text readings and translation of various textual types. Mr. Callender

220. Seminar in Ancient Egypt. Seminar, three hours. Prerequisite: consent of instructor. May be repeated for credit. Mr. Callender

221A-221B. Demotic. Prerequisite: course 121C. Introduction to Demotic grammar and orthography. Reading of texts from various genres.
Mr. Callender

240A-240B-240C. Seminar in 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 in Ancient Mesopotamia. (Same as History M207.) Seminar, three hours. Selected topics on the political, social, and intellectual history of ancient Mesopotamia. May be repeated for credit.
Mr. Buccellati

250X. Seminar in Ancient Mesopotamia (1 unit). Prerequisite: consent of instructor. Selected topics on the political, social, and intellectual history of ancient Mesopotamia. A 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 in 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 supervision of the staff. May be repeated.
Mr. Buccellati, Ms. Carter

262. Seminar in Object Archaeology. Discussion, two hours; laboratory, one hour. Prerequisite: consent of instructor. Selected topics in the analysis and interpretation of Near Eastern archaeological finds in museum collections. Students work with objects in the Heeramanek Collection of the 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 the Semitic elements in the Greek New Testament: traditions transmitted in Aramaic, relations to the Old Testament and to the post-Biblical literature, and Palestinian Judaism.
Mr. Segert

596. Directed Individual Study (2 to 8 units). May be repeated for credit.

597. Examination Preparation (2 to 8 units).

599. Ph.D. Dissertation Research and Preparation (2 to 8 units).

Related Courses in Other Departments

Art History (Art, Design, and Art History) 101A. Egyptian Art and Archaeology

History M104A-M104B. Ancient Egyptian Civilization

105. 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.

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. (Formerly numbered 112.) Lecture, three hours. Prerequisites: courses 111A-111B-111C or consent of instructor. Grammar and syntax; excerpts from literary texts using colloquial Arabic.

114A-114B-114C. Spoken Moroccan Arabic. Lecture, three hours; laboratory, one hour. Introduction to the spoken Arabic dialect of Morocco. Phonology, morphology, and syntax. Emphasis on developing oral skills. Mr. Penchoen

120. Islamic Texts. Prerequisite: course 102C or equivalent. Readings from Koran, Tafsir, Hadith, Figh. May be repeated for credit. Mr. Poonawala

130. Classical Arabic Texts. (Formerly numbered 130A-130B-130C.) Lecture, three hours. Prerequisite: course 102C or equivalent. Readings from medieval literary texts, with grammatical and syntactical analysis. May be repeated for credit.
Mr. Bonebakker

132. Philosophical and Kalam Texts. (Formerly numbered 132A-132B-132C.) Lecture, three hours. Prerequisite: course 120 or consent of instructor. Readings in medieval and Kalam texts. May be repeated for credit. Mr. Davidson

140. Modern Arabic Texts. (Formerly numbered 140A-140B-140C.) Lecture, three hours. Prerequisite: course 102C or equivalent. Readings in contemporary Arabic texts, including newspapers and journals. May be repeated for credit. Mr. Poonawala

141. Modern Arabic Literature. Lecture, three hours. Prerequisites: two quarters of course 140 or consent of instructor. Readings in selected texts representing the most important trends in contemporary Arabic literature, with an outline of literary history from the beginning of the 19th century to the present. Conducted in Arabic. May be repeated for credit.

150A-150B. Survey of Arabic Literature in English. Lecture, three hours. Knowledge of Arabic is not required. Survey of Arabic literature from its beginnings to the present, with selected readings in translation. Each course may be taken independently for credit. Mr. Bonebakker (F,W)

199. Special Studies in Arabic (2 to 8 units). Prerequisite: consent of instructor.

Graduate Courses

220. Seminar in Islamic Texts. (Formerly numbered 220A-220B-220C.) 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. (Formerly numbered 230A-230B-230C.) 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. Mr. Bonebakker (F,W,Sp)

240. Seminar in Arab Historians and Geographers. (Formerly numbered 240A-240B-240C.) Lecture, three hours. Prerequisite: consent of instructor. Selected readings from the 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 in Arabic Literature. (Formerly numbered 250A-250B-250C.) 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.
Mr. Bonebakker (F,W,Sp)

596. Directed Individual Study (2 to 8 units). May be repeated for credit.

597. Examination Preparation (2 to 8 units).

599. Ph.D. Dissertation Research and Preparation (2 to 8 units).

Related Courses in Another Department

History 106A-106B-106C. Survey of the Middle East from 500 to the Present

204A-204B. Seminar in Near and Middle Eastern History

Armenian

Upper Division Courses

101A-101B-101C. Elementary Modern Armenian. Armenian grammar, conversation, and exercises.
Mr. Sanjian

102A-102B-102C. Intermediate Modern Armenian. Prerequisites: courses 101A-101B-101C or equivalent. Reading of selected texts, composition, and conversation. Mr. Sanjian

103. Advanced Modern Armenian. (Formerly numbered 103A-103B-103C.) Lecture, three hours. Prerequisites: courses 102A-102B-102C or equivalent. Readings in advanced modern Armenian texts. May be repeated twice for credit. Mr. Sanjian

130A-130B. Elementary Classical Armenian. Lecture, three hours. Grammar of the classical Armenian language and readings of selected texts.
Mr. Sanjian

131A-131B. Intermediate Classical Armenian. Lecture, three hours. Prerequisites: courses 130A-130B or equivalent. Reading of selected texts.
Mr. Sanjian

132A-132B. Advanced Classical Armenian. Lecture, three hours. Prerequisites: courses 131A-131B or equivalent. Readings in advanced classical Armenian texts. Mr. Sanjian

150A-150B. Survey of Armenian Literature in English. Lecture, three hours. Knowledge of Armenian is not required. Each course may be taken independently for credit. Mr. Sanjian

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 the context of the Armenian cultural renaissance. Mr. Sanjian

199. Special Studies in Armenian Language and Literature (2 to 8 units). Prerequisite: consent of instructor. Mr. Sanjian

Graduate Courses

207. Armenian Intellectual History. Lecture, three hours. Intellectual and cultural trends reflected in Armenian literature, historiography, religious and philosophical thought. Mr. Sanjian

210. History of the Armenian Language. Lecture, three hours. Prerequisite: consent of instructor. The development of the Armenian language in its various stages: classical, middle, and modern.
Mr. Sanjian

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.
Mr. Sanjian

250A-250B. Seminar in Armenian Literature. Seminar, three hours. Prerequisite: consent of instructor. Selected topics from various periods of Armenian literature. May be repeated for credit.
Mr. Sanjian

290. Seminar in Armenian Paleography. Seminar, three hours. Prerequisite: consent of instructor. Discussion of a variety of Armenian scripts and training in the use of manuscripts. Mr. Sanjian

596. Directed Individual Study (2 to 8 units). May be repeated for credit. Mr. Sanjian

597. Examination Preparation (2 to 8 units).
Mr. Sanjian

599. Ph.D. Dissertation Research and Preparation (2 to 8 units). Mr. Sanjian

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. Seminar in 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 the main features of Berber societies and cultures, with particular attention to social structures and institutions on the one hand, and to customs, values, and beliefs on the other. Presentation of a broad framework within which the 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. Study based on the requirements of the individual student.
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 the equivalent of two years of college Hebrew in one academic year. Designed for students who have previously studied the 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)

Upper Division Courses

102A-102B-102C. Intermediate Hebrew. Lecture, five hours. Prerequisites: courses 1A-1B-1C or equivalent. Amplification of grammar; reading of vocalized texts from modern, biblical, and medieval/rabbinic literature. Section 1 is for students with strong grammatical background; section 2, for students with strong conversational background. The two sections should be equal in both language skills by the end of Winter Quarter. Mr. Sabar (F,W,Sp)

103A-103B-103C. Advanced Hebrew. Lecture, three hours; conversation, two 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.
Mr. Lieber (F,W,Sp)

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. A study of the major Hebrew writers of the past one hundred years: prose — Mendele, Ahad Ha'am, Agnon, Yizhar; poetry — Bialik, Tchernichovsky, Greenberg, Shlonsky, Alterman, Amihai. May be repeated for credit. Mr. Hakak

160. The Hebrew Essay. Lecture, three hours. Prerequisites: courses 103A-103B-103C or consent of instructor. The Hebrew essay from its rise in Europe in the late 18th century to the 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 the development of the 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. The development of the Hebrew language in its various stages: biblical, Mishnaic, medieval, modern, and Israeli; differences in vocabulary, morphology, syntax, and the 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. A critical study of the Hebrew text in relation to the major versions; philological, comparative, literary, and historical study of various biblical books. May be repeated for credit. Mr. Segert

230. Seminar in 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 philosophic 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).

599. Ph.D. Dissertation Research and Preparation (2 to 8 units).

Iranian

Lower Division Courses

10A-10B-10C. Persian Conversation (2 units each). Lecture, three hours. Prerequisite: consent of instructor. Systematic and structured Persian conversation.

Upper Division Courses

101A-101B-101C. Elementary Persian. Lecture, four hours; laboratory, two hours. Mrs. Milani

102A-102B-102C. Intermediate Persian. Lecture, three hours; laboratory, three hours. Prerequisites: courses 101A-101B-101C or equivalent. Mrs. Milani

103A-103B-103C. Advanced Persian. Lecture, three hours. Prerequisites: courses 102A-102B-102C or equivalent.

140. Contemporary Persian Belle Lettres. Lecture, three hours. *Prerequisites: courses* 103A-103B-103C or equivalent, consent of instructor. A study of the 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. A study of selected modern Persian analytical and expository prose texts, with emphasis on social sciences, literary criticism, and history. Mr. Banani

150A-150B. Survey of Persian Literature in English. Lecture, three hours. Knowledge of Persian is not required. Each course may be taken independently for credit. Mr. Banani

169. Civilization of Pre-Islamic Iran. A survey of Iranian culture from the beginnings through the 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

190A-190B. Introduction to Modern Iranian Studies. Lecture, three hours. Prerequisites: courses 101A-101B-101C or equivalent. Survey of the 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, the Mystic Poet of Islam. Seminar, three hours. Prerequisites: course 220A or 220B or equivalent, consent of instructor. A study of the life and works of Rumi in the context of interaction of Sufism and poetic creativity. May be repeated twice for credit. Mr. Banani

M222A-M222B. Vedic. (Same as East Asian Languages and Cultures M222A-M222B.) Prerequisites: knowledge of Sanskrit equivalent to East Asian Languages and Cultures 162, consent of instructor. Characteristics of the Vedic dialect and readings in the Rig-Vedic hymns. Only course M222B may be repeated for credit. Mr. Schmidt

230A-230B. Old Iranian. Prerequisite: consent of instructor. Studies in the 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 the grammars and texts of such Middle Iranian languages as best serve the students' needs (e.g., Pahlavi, Sogdian, Sakian). Only course 231B may be repeated for credit. Mr. Schmidt

250. Seminar in 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 in 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).

599. Ph.D. Dissertation Research and Preparation (2 to 8 units).

Related Courses in Other Departments

Art History (Art, Design, and Art History) 104A. Western Islamic Art

104B. Eastern Islamic Art

C104C. Problems in Islamic Art

213. Problems in Islamic Art

East Asian Languages and Cultures 160. Elementary Sanskrit

161. Intermediate Sanskrit

162. Advanced Sanskrit

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

Indo-European Studies 210. Indo-European Linguistics: Advanced Course

280A-280B. Seminar in Indo-European Linguistics

Music 81L. Music of Persia

91L. Music of Persia

Islamics

Upper Division Course

110. Introduction to Islam. Lecture, three hours. The 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).

598. M.A. Thesis Research and Preparation (2 to 8 units).

599. Ph.D. Dissertation Research and Preparation (2 to 8 units).

Related Courses in Another Department

History 107A-107B. Islamic Civilization

Jewish Studies

Upper Division Courses

110. Social, Cultural, and Religious Institutions of Judaism. Judaism's basic beliefs, institutions, and practices. Topics include the development of biblical and rabbinic Judaism; the concepts of god, sin, repentence, prayer, and the messiah; the history of the Talmud and the synagogue; the evolution of folk beliefs and yearcycle and lifecycle practices. (F,Sp)

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 United States. Mr. Stern

130. Modern Jewish Religious and National Movements. Lecture, three hours. Study of the evolution of modern Jewish national movements, with particular emphasis on the history of Zionism and Diaspora nationalism to 1948. (W)

140A-140B. American Jewish History. Lecture, three hours. An examination of the social and cultural history of the American Jewish community from its inception to the present, with emphasis on the integration of successive immigrants and the development of institutions. **140A.** 1654 to 1914; **140B.** 1914 to the Present. (W,140B)

141. Modern Anti-Semitism. Lecture, three hours. An examination of modern anti-Semitism from the 18th century to the present; a comparison of modern racist ideologies with premodern theories; case studies (e.g., the Dreyfus affair, the Beiliss Trail, the Holocaust); Jewish reactions to these phenomena.

142. The History and Institutions of the State of Israel. Lecture, three hours. A study of the social and cultural development of the State of Israel from its pre-state institutional structures to the present, with emphasis on major trends, personalities, and ideologies, and the state's position in the wider framework of modern Jewish history.

M143. Introduction to Jewish Folklore. (Same as Folklore M142.) The nature of Jewish folklore; narrative, folk song, folk art, folk religion, and the methods and perspectives used in their analysis. Mr. Stern

M150A-150B. Hebrew Literature in English. Lecture, three hours. Each course may be taken independently for credit:

M150A. The Literary Traditions of Ancient Israel: Bible and Apocrypha. (Formerly numbered 150A.) (Same as Humanities M106.) A study of the literary culture of ancient Israel through an examination of the principal compositional strategies of the Hebrew Bible and the Apocrypha (read in translation). Mr. Band

150B. Rabbinic and Medieval Literature. Mr. Davidson

151A-151B. Modern Jewish Literature in English. Lecture, three hours. Each course may be taken independently for credit. **151A.** Diaspora Literature; **151B.** Israeli Literature. Mr. Band, Mr. Hakak (F, 151A; W, 151B)

190. Undergraduate Seminar in Jewish Studies. Examination of a single topic in depth with the object of encouraging and guiding students' research in the 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. A survey of social, political, and religious developments. **M191A.** From Biblical Times to the End of the Middle Ages; **M191B.** From the End of the Middle Ages to the Present. Mr. Funkenstein

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 the history of Messianic Movements, the structure of the Jewish communities) through the ages. Mr. Funkenstein

199. Special Studies in Jewish Studies (2 to 8 units). *Limited to Jewish studies majors.*

Related Courses in Another Department

History 192A-192B. Jewish Intellectual History

Near Eastern Languages

Graduate Courses

200. Bibliography and Method of Near Eastern Languages and Literatures. Lecture, two hours. Prerequisite: consent of instructor. Required for the M.A. degree. Introduction to bibliographical resources and training in methods of research in various areas of specialization offered by the department. May be repeated for credit.

210. Survey of Afro-Asiatic Languages. Lecture, three hours. Prerequisite: consent of instructor. A survey of the structures of a number of the representative languages from various major branches of the 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 in Paleography. Seminar, three hours. Provides students with the 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. A teaching apprenticeship under the 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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. S/U grading.

596. Directed Individual Study (2 to 8 units). May be repeated for credit.

597. Examination Preparation (2 to 8 units).

599. Ph.D. Dissertation Research and Preparation (2 to 8 units).

Semitics

Upper Division Courses

110. Neo-Aramaic. Lecture, three hours. Grammar and reading of selected texts (folktales, homilies, songs) in the modern Aramaic dialects of the Jews and Christians of Kurdistan. Mr. Sabar

130. Biblical Aramaic. Lecture, three hours. Prerequisites: Hebrew 102A-102B-102C or consent of instructor. Grammar of biblical Aramaic and reading of texts. Mr. Segert (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 an introduction to the 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 the surviving inscriptions and papyri. May be repeated for credit. Mr. Segert

215A-215B. Syriac. Lecture, two hours. Morphology and syntax of the Syriac language; readings in the Syriac translation of the Bible and Syriac literature. Only course 215B may be repeated for credit. Mr. Segert (alternate years)

220A-220B. Ugaritic. Lecture, two hours. Prerequisites: Hebrew 102A-102B-102C or consent of instructor. Study of the Ugaritic language and literature. Only course 220B may be repeated for credit. Mr. Segert

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. Mr. Segert

230. Seminar in Northwest Semitic Languages and Literatures. Seminar, two hours. Prerequisite: consent of instructor. May be repeated for credit. Mr. Segert

240. Seminar in Akkadian Language. Seminar, two hours. Prerequisite: consent of instructor. Readings of texts from various dialects of Akkadian; selected problems in the linguistic analysis of Akkadian dialects. May be repeated for credit. Mr. Buccellati

240X. Seminar in Akkadian Language (1 unit). Seminar, two hours. Prerequisite: consent of instructor. Readings of texts from various dialects of Akkadian; selected problems in the linguistic analysis of Akkadian dialects. A 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 in 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 in 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. A 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. Seminar in 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).

599. Ph.D. Dissertation Research and Preparation (2 to 8 units).

Turkic Languages

Upper Division Courses

101A-101B-101C. Elementary Turkish. (Formerly numbered 101A-101B, 102A.) Lecture, five hours. Grammar, reading, conversation, and elementary composition drills. Mr. Jaeckel (F,W,Sp)

102A-102B-102C. Advanced Turkish. (Formerly numbered 102B, 103A-103B.) 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

160. Cultural History of the Turks. (Formerly numbered 160A-160B.) Lecture, three hours. Prerequisite: consent of instructor. A survey of the 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 the Turkic program. A survey of the 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. (Formerly numbered 180A-180B-180C.) Lecture, three hours. Prerequisite: consent of instructor. Required of students in the Turkic program and recommended for students in Soviet studies. An 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 the literary language of the Ottoman Empire from its foundation in the 14th century to its overthrow in the 20th century for students of the history, literature, and religion of the Balkans, the Near East, and Central Asia. Topics include the 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 the Ottoman archives; reading and discussion of documents and registers. Introduction to the use of Ottoman archive materials as a source for historical research. Mr. Shaw

220A-220B-220C. Chagatay. Lecture, three hours. Prerequisites: courses 101A-101B or 112A-112B-112C or 114A-114B-114C or consent of instructor. Introduction to Chagatay: descriptive grammar; Arabic, Persian, and Tajik elements in grammar and vocabulary. Readings 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. A Historical and Comparative Survey of the Turkic Languages. Lecture, three hours. Prerequisite: course 180. Extinct and living Turkic languages. The history of Turkic: developments in the phonemic, grammatical, and lexical systems from the 8th to the 20th century. Structural analysis of the Turkic languages on a comparative basis. Mr. Bodrogligeti

235A-235B. Middle Turkic: Karakhanid, Khorazmian, Mamluk-Kipchak, and Old Anatolian. Lecture, three hours. Prerequisites: course 180, consent of instructor. A 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 the different genres of Ottoman writing (belles lettres as well as various types of state documents) in the elaborate high style of the classical Ottoman period (15th to 19th century). Selections are read in manuscript to prepare students to read works in the 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. A philological and linguistic survey of the basic Islamic source material written in the Chagatay literary language. Reading and discussion of Chagatay texts on Islamic topics. Mr. Bodrogligeti

280A-280B. Seminar in Modern Turkish Literature. Seminar, two hours. Prerequisites: course 102B or equivalent, consent of instructor. Specific issues and trends in the development of Turkish literature from the middle of the 19th century to the present. Mr. Jaeckel

290A-290B. Seminar in 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 the Islamic literatures of the Turks in the 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).

599. Ph.D. Dissertation Research and Preparation (2 to 8 units).

Near Eastern Studies
(Interdepartmental)

5353 Bunche Hall, (213) 825-1374, 825-4601

Professors

Nikki Keddie, Ph.D. *(History)*
Ismail Poonawala, Ph.D. *(Near Eastern Languages and Cultures)*
Georges Sabagh, Ph.D. *(Sociology)*
Stanford J. Shaw, Ph.D. *(History), Chair*

Assistant Professor

Irene A. Bierman, Ph.D. *(Art 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 a 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, Mathematics 50, Political Science 6, Psychology 41, or Sociology 18, plus one course from Economics 141, Geography 171, Political Science 102, Psychology M142, or Sociology 116. Also required are History 9D and four courses from History 1A, 1B, 1C, Anthropology 5, 6, 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, 176, Art History 102, 104A, 104B, C104C, Economics 110, 111, 112, 190, Geography 187, 188, Political Science 132A, 132B, 164, 165, Sociology 132, 133. This program may be modified in exceptional cases with consent of the adviser.

If you are interested in doing graduate work in this field, see the M.A. and Ph.D. programs offered under "Islamic Studies" earlier in this chapter.

For further information, contact Professor Stanford J. Shaw at the program address.

Oriental Languages

See East Asian Languages and Cultures

Philosophy

321 Dodd Hall, (213) 825-4641

Professors

Marilyn Adams, Ph.D., *Chair*
Robert Merrihew Adams, Ph.D.
Rogers Albritton, Ph.D.
Tyler Burge, Ph.D.
Alonzo Church, Ph.D., *in Residence (Flint Professor of Philosophy)*

Keith S. Donnellan, Ph.D.
Philippa Foot, M.A.
Montgomery Furth, Ph.D.
Donald Kalish, Ph.D.
David Kaplan, Ph.D.
D. Anthony Martin
Herbert Morris, Ph.D.
Warren S. Quinn, Ph.D.
Robert M. Yost, Ph.D.
Wesley Robson, Ph.D., *Emeritus*

Assistant Professors

Joseph Almog, Ph.D.
Jean Hampton, Ph.D.
Richard Healey, Ph.D.
Alan Nelson, 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 fifth best in the nation in terms of the quality of its faculty. It offers programs leading to the Bachelor of Arts, Master 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, truth. The undergraduate program in philosophy is not directed at career objectives (although it is traditionally a 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 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 21, 22, 31, and one other lower division course in philosophy.

The Major

Required: Twelve upper division or graduate philosophy courses (48 units). Seven of the 12 courses must be distributed among the groups into which the undergraduate and graduate courses are divided, in the following manner: two courses (eight units) in each of three of the groups and one course (four units) 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 Philosophy 199 may be applied toward the major but not toward a 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 at Graduation

On the 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 a reading knowledge of French, German, Latin, or Greek. (When relevant to your research, another language may be substituted with the consent of the department.) This requirement can be satisfied by passing, with a score of at least 500, the Educational Testing Service (ETS) Graduate School Foreign Language Test in an approved language. Alternatively, it can be satisfied in either of the ways in which the Ph.D. language requirement can be satisfied.

Course Requirements

You must complete 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.

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 (see the "Ph.D. Degree"). 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 and one official transcript from each institution attended should be sent directly to Graduate Admissions; the departmental application, three letters of recommendation (on the official forms), a statement of purpose, a sample of your written work, official scores from the Graduate Record Examination (GRE) Aptitude Test (the Advanced Test in Philosophy is not required), official Test of English as a Foreign Language (TOEFL) scores for applicants whose native language is not English, and one official transcript from each institution attended should be sent to the department graduate counselor. Departmental information and applications can be obtained by writing to the Graduate Counselor, Department of Philosophy, 321 Dodd Hall, UCLA, Los Angeles, CA 90024.

Admission to graduate study in philosophy is not probationary. At the end of your first year of study, the department conducts a review of your work; results are discussed in a meeting between you and your graduate adviser.

Foreign Language Requirement

You must demonstrate a reading knowledge of French, German, Latin, or Greek. (Another language may be substituted with the consent of the department, if it is used in the 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 nine additional upper division and graduate courses in philosophy (not including individual studies courses), distributed as follows:

Logic: Two upper division or graduate courses in logic in either the Philosophy or Mathematics Department (approved by your adviser).

History of Philosophy: Two graduate-level courses.

Ethics and Value Theory: One graduate-level course.

Metaphysics and Epistemology: One graduate-level course.

Electives: Three upper division or graduate-level courses of your choice.

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 five quarters as a teaching assistant at UCLA.

Qualifying Examinations

The master's comprehensive examination consists of four different examinations. One is in logic on the materials covered in Philosophy 31 and 32. Consult the *Manual for Graduate Students in Philosophy* for further information about this examination.

There are also examinations on each of the three first-year seminars. These examinations last two hours and each occurs soon after the completion of the seminar to which it applies. The examination is passed or failed as a whole, which does not necessarily require passing of all four parts.

In the second and third years, you must write two papers, prepared in accordance with a specific format, called "propositions." One must be on a topic in metaphysics or epistemology and the other on a topic in ethics or value theory.

The first proposition should be submitted before the end of the second year; the second, before the end of the third year. Both propositions must be accepted by the department before you can take the University Oral Qualifying Examination. Consult the *Manual for Graduate Students in Philosophy* for further details.

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 will be 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. The Beginnings of Western Philosophy. Lecture, three hours; discussion, one hour. The origins of Greek cosmology and philosophy, the beginnings of systematic thought and scientific investigation concerning such questions as the origin and nature of the material world, the concept of laws of nature, the possibility and extent of knowledge. Concentration on the pre-Socratic philosophers, particularly Anaximander, Heraclitus, the Pythagoreans, Parmenides, Empedocles, and the Greek atomists, during the first two thirds of the course and on Socrates and some earlier works of Plato in the last few weeks.
Mr. Albritton, Mr. Furth

2. Introduction to the Philosophy of Religion. Lecture, three hours; discussion, one hour. An introductory study of such topics as the nature and grounds of religious belief, the relation between religion and ethics, the nature and existence of God, the problem of evil, and what can be learned from religious experience. Mr. Adams, Mrs. Adams

3. Personal and Social Ideals. Lecture, three hours; discussion, one hour. A study of various conceptions of human perfection and social utopias. Readings from such authors as Freud, Thomas More, Marx, B.F. Skinner, and Sartre.

4. Philosophical Analysis of Contemporary Moral Issues. Lecture, three hours; discussion, one hour. A critical study of principles and arguments advanced in discussion of current moral issues. Possible topics include revolutionary violence, rules of warfare, sexual morality, the right of privacy, punishment, nuclear warfare and deterrence, abortion and mercy killing, experimentation with human subjects, rights of women. Ms. Hampton, Mr. Quinn

5A. Philosophy in Literature. Lecture, three hours; discussion, one hour. A philosophical inquiry into such themes as freedom, responsibility, guilt, love, self-knowledge and self-deception, death, and the meaning of life through examination of great literary works in the Western tradition.
Mr. Morris, Mr. Nelson

6. Historical Introduction to Moral and Political Philosophy. Lecture, three hours; discussion, one hour. A study of some classic 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? Ms. Hampton

7. Introduction to the Philosophy of Mind. Lecture, three hours; discussion, one hour. An introductory study of philosophical issues about the nature of the mind and its relation to the body, including materialism, functionalism, behaviorism, determinism and free will, the nature of psychological knowledge.
Mr. Burge, Mr. Healey

8. Introduction to the Philosophy of Science. Lecture, three hours; discussion, one hour. An introduction to philosophical questions about the nature of science, drawing examples from specific scientific theories and controversies that can be understood without much mathematical or technical background. What role do observation and explanation play in building and evaluating scientific theories? How should we view the relation between science and common sense? Mr. Healey

9. Principles of Critical Reasoning. The nature of arguments: how to analyze them and assess the 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 the use of language in argumentation to arouse emotions as contrasted with conveying thoughts, the 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. Kaplan

10. Virtues and Vices. Lecture, three hours; discussion, one hour. A study of the traditional theory of the virtues and vices, and an inquiry into its truth. Readings in Aristotle, Aquinas, and contemporary authors; discussion of concepts such as courage, wisdom, and justice. Should we accept the traditional list of the virtues and vices, or should it be revised?
Mrs. Foot

21. Skepticism and Rationality. Lecture, three hours; discussion, one hour. Can we know anything with certainty? How can we justify any of our beliefs? An introduction to the study of these and related questions through the works of some great philosophers of the modern period, such as Descartes, Leibniz, Berkeley, or Hume.
Mr. Donnellan, Mr. Furth, Mr. Yost

22. Introduction to Ethical Theory. Lecture, three hours; discussion, one hour. Recommended or required for many upper division courses in Group III. A systematic introduction to ethical theory, including discussion of egoism, utilitarianism, justice, responsibility, the meaning of ethical terms, relativism, etc.
Mr. Quinn

31. Logic, First Course. Lecture, three hours; discussion, one hour. Recommended for students who plan to pursue more advanced studies in logic. The elements of symbolic logic, sentential and quantificational; forms of reasoning and structure of language. Mr. Almog, Mr. Burge, Mr. Kalish, Mr. Kaplan, Mr. Nelson

32. Logic, Second Course. Lecture, three hours; discussion, one hour. Prerequisite: course 31 (preferably in the preceding quarter). Symbolic logic: extension of the systematic development of course 31. Quantifiers, identity, definite descriptions.
Mr. Almog, Mr. Burge, Mr. Kalish, Mr. Kaplan

97. Freshman Seminar. Prerequisite: consent of instructor. Variable topics; consult *Schedule of Classes* or "Department Announcements" for current topic. May be repeated for credit with consent of instructor.

Upper Division Courses

Group I: History of Philosophy

100A. History of Greek Philosophy. Lecture, three hours; discussion, one hour. Prerequisite: one course in philosophy or consent of instructor. Survey of Greek philosophy, with emphasis on the metaphysics and epistemology of Plato and Aristotle.
Mr. Albritton, Mr. Furth

100B. Medieval and Early Modern Philosophy. Lecture, three hours; discussion, one hour. Prerequisite: one course in philosophy or consent of instructor. Strongly recommended: course 100A. Survey of the development and transformation of Greek metaphysics and epistemology within the context of philosophical theology, and the transition from the medieval to the early modern period. Special emphasis on Augustine, Anselm, Aquinas, and Descartes.
Mrs. Adams

100C. History of Modern Philosophy, 1650-1800. Lecture, three hours; discussion, one hour. Prerequisite: one course in philosophy. Strongly recommended: course 100B. Courses 100A, 100B, and 100C should be taken in immediately successive quarters if possible. Survey of the development of metaphysics and the 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 the views of these (and perhaps other) philosophers of the period on mind and body, causality, the existence of God, skepticism, empiricism, the limits of human knowledge, and the philosophical foundations of modern science. Mr. Adams

101A. Plato — Earlier Dialogues. Lecture, three hours; discussion, one hour. Prerequisite: one course in philosophy or consent of instructor. A study of selected topics in the early and middle dialogues of Plato. Mr. Furth

101B. Plato — Later Dialogues. Lecture, three hours; discussion, one hour. Prerequisite: course 101A. A study of selected topics in the middle and later dialogues of Plato. Mr. Furth, Mr. Quinn

102. Aristotle. *Lecture, three hours; discussion, one* hour. Prerequisite: one course in philosophy or consent of instructor. A study of selected works of Aristotle. Mr. Furth

104. Topics in Islamic Philosophy. Lecture, three hours; discussion, one hour. Prerequisite: one course in philosophy or consent of instructor. The 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 course in philosophy or consent of instructor. The development of early medieval philosophy within the framework of Judeo-Christian theology and its assimilation and criticism of the Greek philosophical heritage. Focus on the problem of universals, the existence and nature of God, the problem of evil, and the doctrines of the Trinity and atonement. Selected writings from Augustine through Maimonides read in English translation.
Mrs. Adams

106. Later Medieval Philosophy. Prerequisite: one course in philosophy 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.
Mrs. Adams

107. Topics in Medieval Philosophy. Prerequisite: one course in philosophy. Recommended: course 105 or 106. The study of the philosophy and theology of one medieval philosopher such as Augustine, Anselm, Abelard, Aquinas, Scotus, or Ockham, or the study of a single area such as logic or theory of knowledge in several medieval philosophers. Topic announced each quarter. May be repeated for credit with consent of instructor. Mrs. Adams

C109. Descartes. Prerequisites: course 21 or two courses in philosophy or consent of instructor. A study of the works of Descartes, with emphasis on the *Meditations.* Issues such as the problem of skepticism, the foundations of knowledge, the existence of God, the relation between mind and body. Limited to 30 students when concurrently scheduled with course C209. Mr. Burge, Mr. Nelson

C110. Spinoza. Lecture, three hours; discussion, one hour. Prerequisite: course 21 or consent of instructor. A study of the philosophy of Spinoza. May be concurrently scheduled with course C210, in which case there is a weekly discussion meeting, plus fewer readings and shorter papers for undergraduates. Limited to 30 students when concurrently scheduled.
Mr. Adams

C111. Leibniz. Lecture, three hours; discussion, one hour. Prerequisite: course 21 or consent of instructor. A study of the philosophy of Leibniz. May be concurrently scheduled with course C211, in which case there is a weekly discussion meeting, plus fewer readings and shorter papers for undergraduates. Limited to 30 students when concurrently scheduled.
Mr. Adams, Mr. Nelson

C112. Locke and Berkeley. Prerequisite: one course in philosophy or consent of instructor. A study of the philosophies of Locke and Berkeley; emphasis may sometimes vary from one figure to the other. May be concurrently scheduled with course C212.
Mr. Donnellan

C114. Hume. Prerequisite: one course in philosophy or consent of instructor. Selected topics from the 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. A study of Kant's views on related topics in theory of knowledge, ethics, and politics. May be repeated for credit with consent of instructor.
Ms. Hampton

116. 19th-Century Philosophy. Lecture, three hours; discussion, one hour. Prerequisite: one course in philosophy or consent of instructor. Selected topics in 19th-century thought.

117. Late 19th- and Early 20th-Century Philosophy. Lecture, three hours; discussion, one hour. Prerequisite: one course in philosophy or consent of instructor. Selected topics in the work of one or more of the following philosophers: Bolzano, Frege, Husserl, Meinong, G. Moore, the early Russell, and Wittgenstein. May be repeated for credit with consent of instructor. Mr. Almog, Mr. Burge

Group II: Logic, Semantics, and Philosophy of Science

126A. Philosophy of Science. Lecture, three hours; discussion, one hour. Prerequisite: one course in philosophy or consent of instructor. A historical introduction to the philosophy of science. Several general topics discussed in the context of actual episodes in the development of the natural sciences.
Mr. Healey, Mr. Nelson

126B. Philosophy of Science. Lecture, three hours; discussion, one hour. Prerequisite: course 31 or 126A or consent of instructor. An introduction to contemporary philosophy of science, focusing on problems of central importance. Mr. Healey, Mr. Nelson

126C. Philosophy of Science: Social Sciences. Lecture, three hours; discussion, one hour. Prerequisites: two courses in philosophy or consent of instructor. A discussion of topics in the philosophy of social science (e.g., the methods of the social sciences in relation to the physical sciences, value-bias in social inquiry, concept formation, theory construction, explanation and prediction, the nature of social laws).
Mr. Nelson

127A. Philosophy of Language. Prerequisite: course 31 or consent of instructor. Syntax, semantics, pragmatics. The 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. Church, Mr. Kaplan

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 a more advanced and technical level. Mr. Church, Mr. Kaplan

128A. Philosophy of Mathematics. Prerequisites: courses 31, 32, and preferably one additional course in logic. The philosophy of mathematics; logicism of Frege and Russell, arithmetic reduced to logic; ramified type theory and impredicative definition (Russell, Poincare, the early Weyl). Mr. Church

128B. Philosophy of Mathematics. Prerequisite: course 128A or consent of instructor. Intuitionism of Brouwer, Heyting, and the later Weyl; proof theory of Hilbert. Mr. Church

129. Philosophy of Psychology. Lecture, three hours; discussion, one hour. Prerequisites: one four-unit course in psychology, one course in philosophy. 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 the 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 courses in philosophy or one course in philosophy and one course in physics, or consent of instructor. *Selected philosophical problems concerning the nature* of space and time. The philosophical implications of space-time theories, such as those of Newton and Einstein. Topics may include the nature of geometry, conventionalism, absolutist versus relationist views of space and time, philosophical impact of relativity theory. Mr. Healey

131. Science and Metaphysics. Lecture, three hours; discussion, one hour. Prerequisites: two courses in philosophy or consent of instructor. An intensive study of one or two metaphysical topics on which the results of modern science have been thought to bear. Topics may include the nature of causation, the reality and direction of time, time-travel, backwards causation, realism, etc. May be repeated for credit with consent of instructor. Mr. Healey

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. Kalish, Mr. Kaplan, Mr. Martin

134. Introduction to Set Theory. Prerequisites: course 32 or upper division standing in mathematics, consent of instructor. Introduction to axiomatic set theory; sets, natural numbers, relations, functions, cardinality, infinity. Mr. Kalish, Mr. Martin

135. Introduction to Metamathematics. Prerequisite: course 32. Recommended: course 134 or equivalent. Models, satisfaction, truth, definability; logical truth and logical consequence; consistency and completeness.
Mr. Church, Mr. Kalish, Mr. Kaplan, Mr. Martin

136. Modal Logic. Prerequisites: courses 31, 32. The first course in a two-quarter 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 extension.
Mr. Kaplan, Mr. Martin (W)

Group III: Ethics and Value Theory

150. Society and Morals. Lecture, three hours; discussion, one hour. Prerequisite: course 22 or consent of instructor. A 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 is presupposed. May be repeated for credit with consent of instructor.

151A-151B. History of Ethics. Prerequisites: two courses in philosophy or consent of instructor. Course 151A is not prerequisite to 151B. **151A.** Selected Classics in Ancient Ethical Theories: Plato, Aristotle; **151B.** Selected Classics in Modern Ethical Theories: Hume, Kant, Mill, etc. Mr. Quinn

153A. Topics in Ethical Theory: Normative Ethics. *Prerequisite: course 22 or consent of instructor.* A study of selected topics in normative ethical theory. Topics may include human rights, virtues and vices, principles of culpability and praiseworthiness (the criteria of right action). May be repeated once for credit with consent of instructor. Mr. Quinn

153B. Topics in Ethical Theory: Metaethics. Prerequisite: course 22 or consent of instructor. A study of selected problems in metaethics. Topics may include the analysis of moral language, the justification of moral beliefs, moral realism, skepticism, etc. May be repeated once for credit with consent of instructor.
Mrs. Foot, Mr. Quinn

155. Medical Ethics. An examination of the philosophical issues raised by problems of medical ethics, such as abortion, euthanasia, and medical experimentation. Mrs. Foot

156. Topics in Political Philosophy. Lecture, three hours; discussion, one hour. Prerequisites: two courses in philosophy or consent of instructor. Recommended: course 22. Analysis of some basic concepts in political theory. May be repeated for credit with consent of instructor. Ms. Hampton

157A-157B. History of Political Philosophy. *Lecture, three hours; discussion, one hour. Prerequisites:* two courses in philosophy 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. Ms. Hampton

161. Topics in Aesthetic Theory. Lecture, three hours; discussion, one hour. Prerequisite: one course in philosophy or consent of instructor. Philosophical theories about the nature and importance of art and art criticism, aesthetic experience, and aesthetic values. May be repeated for credit with consent of instructor. Mr. Quinn

166. Introduction to Legal Philosophy. Prerequisite: one course in philosophy or consent of instructor. An examination, through the study of recent philosophical writings, of such topics as the nature of law, the relationship of law and morals, legal reasoning, punishment, and the obligation to obey the law.
Ms. Hampton, Mr. Morris

Group IV: Metaphysics and Epistemology

170. Philosophy of Mind. Lecture, three hours; discussion, one hour. Prerequisites: two relevant courses in philosophy or consent of instructor. An analysis of various problems concerning the nature of mind and mental phenomena, such as the relation between the mind and the 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 courses in philosophy or linguistics 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. An intensive investigation of one or two topics or works in the philosophy of religion, such as the attributes of God, arguments for or against the existence of God, or the relation between religion and ethics. Topics announced each quarter. May be repeated for credit with consent of instructor.
Mr. Adams, Mrs. Adams, Mr. Albritton

176. Metaphysics of Modality. Prerequisites: courses 31, 32. Highly recommended: course 136. The second course in a two-quarter sequence (also see course 136). Metaphysical foundations of modal logic and the philosophical basis of the model theory of modal logic. What are "possible worlds"? What is the "accessibility" relation? Is modal logic a logic or a theory? Is its focus logical or metaphysical necessity? Are the two notions really distinct? How metaphysically involved is (quantified) modal logic? What is its connection to the doctrines of (1) "Haecceitism" and (2) "Aristotelian Essentialism"? P/NP or letter grading. (Sp)

177A. Existentialism. Lecture, three hours; discussion, one hour. Prerequisite: one course in philosophy or consent of instructor. Analysis of the 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 the self, other people, ethics, existential psychoanalysis.

177B. Historical Studies in Existentialism. Prerequisite: one course in philosophy or consent of instructor. A study of the central philosophical texts of one of the following: Kierkegaard, 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 courses in philosophy or consent of instructor. Introduction to the phenomenological method of approaching philosophical problems via the 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. An examination of the central concepts and arguments in Buddhist philosophy, with emphasis on the 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 the physical world, of minds, and of universals; and the answers provided by alternative systems (e.g., phenomenalism, materialism, dualism). Mr. Yost

183. Theory of Knowledge. Prerequisite: course 21 or consent of instructor. An analysis of the concept of empirical knowledge. Mr. Nelson, Mr. Yost

184. Topics in Metaphysics. Prerequisite: course 21 or consent of instructor. An intensive investigation of one or two topics or works in metaphysics, such as personal identity, the nature of dispositions, possibility and necessity, universals and particulars, causality. Topics announced each quarter. May be repeated for credit with consent of instructor.
Mr. Albritton, Mr. Donnellan, Mr. Healey

186. Topics in the Theory of Knowledge. Prerequisite: course 182 or 183 or consent of instructor. An intensive investigation of one or two selected topics or works in the theory of knowledge, such as a priori knowledge, the problem of induction, memory, knowledge as justified true belief. Topics announced each quarter. May be repeated for credit with consent of instructor. Mr. Albritton

187. Philosophy of Action. Prerequisites: two courses in philosophy or consent of instructor. A study of various concepts employed in the understanding of human action. Topics may include rational choice, desire, intention, weakness of will, and self-deception. Mr. Albritton, Mr. Burge, Mr. Donnellan

188. Philosophy of Perception. Prerequisites: two courses in philosophy or consent of instructor. A critical study of the main philosophical theories of perception and the arguments used to establish them.
Mr. Yost

189. Major Philosophers of the 20th Century. Prerequisites: two courses in philosophy or consent of instructor. A study of the 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. Albritton, Mr. Burge, Mr. Donnellan

Special Studies

192. Philosophical Analysis of Issues in Women's Liberation. Prerequisite: one course in philosophy or consent of instructor. A critical study of concepts and principles which arise in the discussion of women's rights and liberation. Topics may include economic and educational equality, preferential treatment, abortion, sex roles, sexual morality, marriage, love, friendship.

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 the religious life. Mr. Adams

195. 19th- and 20th-Century Religious Thought. Lecture, three hours; discussion, one hour. A philosophical approach to Western religious thought of the last 200 years, through study of selected works by such authors as Kant, Schleiermacher, Kierkegaard, Buber, Camus, and Tillich. Mr. Adams

196. Undergraduate Seminar in Philosophy. Lecture, one hour; discussion, three hours. Prerequisite: consent of instructor. Variable topics; consult *Schedule of Classes* or "Department Announcements" for current topic. May be repeated for credit with consent of instructor.

197. Reading and Writing Philosophy. Prerequisites: two lower or upper division courses in philosophy. Designed to help philosophy students improve their ability to read philosophical texts and write philosophical essays. Selected texts used to illustrate problems of reading and writing; students are required to do and redo written work. Mr. Quinn

199. Special Studies (2 to 8 units). Prerequisite: consent of instructor. Eight units may be applied toward the degree requirements, but course cannot be substituted for a course in one of the four groups on the 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. A study of the later dialogues. Mr. Furth

202. Aristotle. Prerequisite: consent of instructor. Analysis of major problems in Aristotle's philosophy based on the reading, exposition, and critical discussion of relevant texts in English translation.
Mr. Furth

203. Seminar: History of Ancient Philosophy. Prerequisite: consent of instructor. Selected problems and philosophers. May be repeated for credit with consent of instructor. Mr. Furth

206. Topics in Medieval Philosophy. Prerequisite: consent of instructor. The study of the philosophy and theology of one or several medieval philosophers such as Augustine, Anselm, Abelard, Aquinas, Scotus, or Ockham or the study of a single area such as logic or theory of knowledge in several medieval philosophers. Topics announced each quarter. May be repeated for credit with consent of instructor.
Mrs. 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.
Mrs. Adams

208. Hobbes. Prerequisite: consent of instructor. Hobbes' political philosophy, especially the *Leviathan*, with attention to its relevance to contemporary political philosophy. Ms. Hampton

C209. Descartes. Prerequisite: consent of instructor. A study of the works of Descartes, with emphasis on the *Meditations*. Issues such as the problem of skepticism, the foundations of knowledge, the existence of God, the relation between mind and body. May be concurrently scheduled with course C109.
Mr. Burge, Mr. Nelson

C210. Spinoza. Prerequisite: consent of instructor. Selected topics in the 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 a longer term paper for graduates. Mr. Adams

C211. Leibniz. Prerequisite: consent of instructor. Selected topics in the 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 a longer term paper for graduates. Mr. Adams, Mr. Nelson

C212. Locke and Berkeley. Prerequisite: consent of instructor. Selected topics in the 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 the 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. An intensive study of selected writings of Immanuel Kant.
Mr. Adams, Ms. Hampton

216. 19th-Century Philosophy. Prerequisite: consent of instructor. Topics in 19th-century philosophy. May be repeated for credit with consent of instructor.

219. Seminar: History of Modern Philosophy. Prerequisite: consent of instructor. Selected problems and philosophers. May be repeated for credit with consent of instructor. Mr. Adams

220. Seminar: Topics in History of Philosophy. Seminar, three hours. Prerequisite: consent of instructor. Selected problems and philosophers which may be drawn from different periods. May be repeated for credit with consent of instructor.
Mr. Adams, Mrs. Adams

Group II. Logic, Semantics, and Philosophy of Science

221A. Topics in Set Theory. Prerequisite: Mathematics 112A or consent of instructor. Sets, relations, functions, partial and total orderings; well-orderings. Ordinal and cardinal arithmetic, finiteness and infinity, the continuum hypothesis, inaccessible numbers. Formalization of set theory: Zermelo-Fraenkel; von Neumann-Gödel theory. May be repeated for credit with consent of instructor. Mr. Kalish, Mr. Martin

221B. Non-Neumannian Set Theory. Prerequisite: course 221A or consent of instructor. Standard (so-called Z-F) set theory relies on a principle of limitations of size as a means of avoiding antinomy. As this principle was first formulated explicitly as an axiom of set theory by von Neumann, set theories in which it fails may appropriately be spoken of as non-Neumannian. Possibilities in regard to non-Neumannian set theories explored; proposed axiomatizations and relative consistency proofs based on the assumed consistency of Z-F set theory or of Z-F set theory plus a strong axiom of infinity. Mr. Church

221C. History of Set Theory. Prerequisite: consent of instructor. The development of the concept of set and axiomatic set theory by examining selected writings of Frege, Cantor, Russell, Zermelo, Gödel, and several others. The 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 the rank hierarchy, ramification and predicativity, proper classes and sets as small classes, and the particular Zermelo-Fraenkel axiomatic theory. Emphasis on the actual expressed ideas and views of various influential authors.
Mr. Martin

222A-222B-222C. Gödel Theory:

222A. Prerequisites: several courses in logic, preferably including course 135. First in a series of three courses leading to Gödel's incompleteness theorem and Tarski's definition of truth.

222B. Prerequisite: course 222A. Second-order arithmetic. Second in series of three courses leading to Gödel's incompleteness theorem and Tarski's definition of truth.

222C. Prerequisite: course 222B. Gödel numbering and Gödel theory. Final course in the Gödel theory series. Mr. Church, Mr. Martin

224. Philosophy of Physics. Prerequisite: consent of instructor. Selected philosophical topics related to physical theory, depending on interests and background of the participants, including space and time; observation in quantum mechanics; foundations of statistical mechanics. May be repeated for credit with consent of instructor. Mr. Healey

225. Probability and Inductive Logic. Prerequisites: course 134 or Mathematics 112A-112B or consent of instructor.

226. Topics in Mathematical Logic. Prerequisite: consent of instructor. Content varies from quarter to quarter. May be repeated for credit with consent of instructor. Mr. Kalish, Mr. Kaplan, Mr. Martin

227. Philosophy of Social Science. Prerequisite: consent of instructor. An examination of philosophical problems concerning concepts and methods used in the social sciences. Topics may include the relation between social processes and individual psychology, the logic of explanation in the social sciences, determinism and spontaneity in history, the interpretation of cultures radically different from one's own. Students with a primary interest and advanced preparation in a social science are encouraged to enroll. May be repeated for credit with consent of instructor.
Mr. Nelson

230. Seminar: Logic. Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Mr. Church, Mr. Kaplan, Mr. Martin

231. Seminar: Intensional Logic. Prerequisite: consent of instructor. Topics may include the logic of sense and denotation, modal logic, the logic of demonstratives, epistemic logic, the intensional logic of *Principia Mathematica*, possible worlds semantics. May be repeated for credit with consent of instructor. Mr. Church, Mr. Kaplan, Mr. Martin

232. Philosophy of Science. Prerequisite: consent of instructor. Selected topics in the philosophy of science. May be repeated for credit with consent of instructor. Mr. Healey, Mr. Nelson

233. Seminar: Philosophy of Physics. Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Mr. Healey

Group III. Ethics and Value Theory

241. Topics in Political Philosophy. Prerequisites: course 150, 156, 157A, or 157B or any two courses in philosophy or consent of instructor. An 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. Ms. Hampton

245. Seminar: History of Ethics. Prerequisite: consent of instructor. Selected topics. May be repeated for credit with consent of instructor.

246. Seminar: Ethical Theory. Prerequisite: consent of instructor. Selected topics. Content varies from quarter to quarter. May be repeated for credit with consent of instructor. Mr. Quinn

247. Seminar: Political Theory. Prerequisite: consent of instructor. May be repeated for credit with consent of instructor. Ms. Hampton

248. Problems in Moral Philosophy. Prerequisite: consent of instructor. An intensive study of some leading current problems in moral philosophy. May be repeated for credit with consent of instructor.
Mrs. Foot

255. Seminar: Aesthetic Theory. Prerequisite: consent of instructor. Selected topics. May be repeated for credit with consent of instructor. Mr. Quinn

M256. Topics in Legal Philosophy. (Same as Law M217.) Lecture, three hours. Prerequisite: consent of instructor. An examination of topics such as the concept of law, the nature of justice, problems of punishments, legal reasoning, and the obligation to obey the law. May be repeated for credit with consent of instructor. Mr. Munzer

M257. Seminar: Philosophy of Law. (Same as Law M524.) Lecture, three hours. Prerequisite: consent of instructor. Selected topics in the philosophy of law. May be repeated for credit with consent of instructor.
Mr. Morris

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. Mr. Albritton, Mr. Nelson

275. Human Action. Prerequisites: two upper division philosophy courses or consent of instructor. An examination of theories, concepts, and problems concerning human actions. Topics may include analysis of intentional actions; determinism and freedom; the nature of explanations of intentional actions. May be repeated for credit with consent of instructor.
Mr. Albritton, 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.

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. An examination of topics such as the nature and validity of psychoanalytic explanations and interpretations, psychoanalysis and language, metapsychological concepts such as the unconscious, the ego, id, superego, defense mechanisms, and the 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. Furth

288. Seminar: Wittgenstein. Prerequisite: consent of instructor. Mr. Albritton

289. Seminar: Philosophy of Religion. Prerequisite: consent of instructor. May be repeated for credit with consent of instructor.
Mr. Adams, Mrs. Adams, Mr. Albritton

Special Studies

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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 of 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.

596A-596B. Directed Individual Studies (2 to 8 units). 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, (213) 825-3224

Professors

Maha Abdalla, Ph.D.
Ernest S. Abers, Ph.D.
Rubin Braunstein, Ph.D.
Charles D. Buchanan, Ph.D.
Nina Byers, Ph.D.
Marvin Chester, Ph.D.
W. Gilbert Clark, Ph.D.
John M. Cornwall, Ph.D.
Ferdinand V. Coroniti, Ph.D.
John M. Dawson, Ph.D.
Sergio Ferrara, Ph.D.
A. Theodore Forrester, Ph.D.
Burton D. Fried, Ph.D.
Christian Fronsdal, Ph.D.
Walter N. Gekelman, Ph.D., *in Residence*
George Gruner, Ph.D.
Roy P. Haddock, Ph.D.
George J. Igo, Ph.D.
Charles F. Kennel, Ph.D.
Leon Knopoff, Ph.D.
George J. Morales, Ph.D.
Steven A. Moszkowski, Ph.D.
Bernard M. K. Nefkens, Ph.D.
Richard E. Norton, Ph.D.
Raymond L. Orbach, Ph.D.
Seth J. Putterman, Ph.D.
Isadore Rudnick, Ph.D.
Joseph Rudnick, Ph.D.
Robert A. Satten, Ph.D.
Peter E. Schlein, Ph.D.
Julian S. Schwinger, Ph.D. *(University Professor)*
William E. Slater, Ph.D.
Reiner L. Stenzel, Ph.D.
Donald H. Stork, Ph.D.
Charles A. Whitten, Jr., Ph.D.
Gary A. Williams, Ph.D.
Alfred Y. Wong, Ph.D.
Chun Wa Wong, Ph.D.
Eugene Y. Wong, Ph.D.

Emeritus Professors

Alfredo Baños, Jr., Dr.Eng., Ph.D.
Hans E. Bommel, Ph.D.
Robert J. Finkelstein, Ph.D.
Joseph Kaplan, Ph.D., Sc.D., L.H.D.
Kenneth R. MacKenzie, Ph.D.
J. Reginald Richardson, Ph.D.
Norman A. Watson, Ph.D.
Byron T. Wright, Ph.D.

Associate Professors

Claude W. Bernard, Ph.D.
E.T. Tomboulis, Ph.D.

Assistant Professors

Robijn F. Bruinsma, Ph.D.
Robert D. Cousins, Ph.D.

Visiting Professors

Ahmed Ali, Ph.D.
Jacob Bekenstein, Ph.D.
Raimondo Bertini, Ph.D.
Moshe Flato, Ph.D.
Harold Rosenberg, Ph.D.

Adjunct Assistant Professors

Elizabeth H. Bleszynski, Ph.D.
Marek K. Bleszynski, Ph.D.

Adjunct and Visiting Lecturers

Hans-Uno Bengtsson, Ph.D., *Adjunct*
S. Merton Burkhard, M.S., *Visiting*
John Cooper, Ph.D., *Adjunct*
Barry Dorfman, Ph.D., *Adjunct*
Luciano Girardello, Ph.D., *Adjunct*
Thomas Hijmans, Ph.D., *Adjunct*
Arthur H. Huffman, Ph.D., *Adjunct*
Satoru Iizuka, Ph.D., *Adjunct*
Jesusa V. Kinderman, Ph.D., *Visiting*
Ruprecht Machleidt, Ph.D., *Adjunct*
Philip Pritchett, Ph.D., *Adjunct*
Amarjit S. Soni, Ph.D., *Adjunct*
Jun-Ru Wu, Ph.D., *Adjunct*
Shin-Yan Yang, Ph.D., *Adjunct*
A. Zawadowski, Ph.D., *Adjunct*

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, 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.

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, 8B/8BL, 8C/8CL, 8D/8DL, 8E; Chemistry 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 Physics Office.

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 course in mathematics 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. At least C grades in all mathematics and physics courses taken are required.

Bachelor of Arts in General Physics

The major is intended to provide the necessary flexibility for fields in which a strong background 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, 8B/8BL, 8C/8CL, 8D/8DL, 8E; Chemistry 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 Physics 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.

Teaching Credentials

You may earn credentials for teaching physical sciences and other subjects in California elementary and secondary schools. Completion of the Teacher Credential Program in the Teacher Education Laboratory is required. Consult the Graduate School of Education (201 Moore Hall) for information.

Graduate Study

The Department of Physics offers opportunities for graduate study leading to the M.S., M.A.T. (Master of Arts in Teaching), and Ph.D. degrees. Special emphasis is given to preparation in the following fields of physics: acoustics/low-temperature, elementary particles, intermediate energy and nuclear physics, plasma and astrophysics, solid-state and condensed matter, spectroscopy.

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) Advanced Test in Physics and to submit three letters of recommendation. International applicants who are applying for financial support (fellowships, teaching assistantships, and research assistantships) 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, 3-145G Knudsen Hall, UCLA, Los Angeles, CA 90024.

Master of Science Degree

Major Fields or Subdisciplines

It is not required to designate an area of specialization for a terminal master's degree.

Course Requirements

The University requires a total of nine courses 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 courses may be from Physics 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. It is recommended that the examination be taken during the first year by UCLA graduates in physics and must be taken no later than the fourth quarter in residence by other students. 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 is 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.

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 leads to qualification for teaching 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 Teaching Credential, K-12: Education 100A, 100B, 112, 312, 315A-315B, 330B, 330C, Public Health 187.

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 repeat the examination a second time. Permission to repeat it a third time may be granted only under exceptional circumstances.

Ph.D. Degree

Major Fields or Subdisciplines

Ph.D. degrees are granted in the following fields of specialization: elementary particles, intermediate energy and nuclear physics, low-temperature/acoustics, plasma and astrophysics, solid-state and condensed matter, and spectroscopy.

Course Requirements

Before the formation of a doctoral committee, you must satisfy the core course requirements by taking Physics 210A, 210B, 215A, 221A, 221B. Course examinations are graded on both a letter and an S/U basis. All students seeking candidacy for the Ph.D. degree must pass with a grade of S the final examination in four of the five courses. In case of failure, you may petition to repeat the examination in question. The five examinations should be completed by your fifth quarter in residence. In addition to the five required courses, you must fulfill a breadth requirement by passing one of the following courses with a B or better: Physics 220, 221C, 231A (course 132 is the mathematics prerequisite to graduate classes; if you have not taken this course or its equivalent as an undergraduate, you must do so at the beginning of your graduate career).

Qualifying Examinations

All departmental graduate students (master's and Ph.D.) take the same 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.

All students in the Ph.D. program must pass the examination at the Ph.D. level of achievement. Permission to take it a second time may be granted only under exceptional circumstances.

You may arrange for the comprehensive oral examination (departmental field oral) only after completing the core course requirements and passing the comprehensive written examination at the Ph.D. level. The departmental oral may encompass material covered in all graduate courses but with special emphasis on your field of specialization. The examination, if failed, may be repeated on the recommendation of your committee to the graduate affairs officer. All students are expected to complete the examination by the eighth quarter in residence.

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. At least two members from the Physics Department and at least one outside member must act in this capacity. 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

Physics 1Q is intended for entering freshman physics majors and normally is taken in your first quarter in residence. 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.

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 courses 8A through 8E by taking the final examination with a class at the end of any quarter. These serve as placement examinations. You should discuss such possibilities with your departmental adviser.

Physics 10 is a one-quarter, 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). Limited to physics majors. A review of current problems in physics, with emphasis on those being studied in the research laboratories at UCLA. The significance of the problems and their historical context. (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 a 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. The fundamentals of classical mechanics: Newton's laws; conservation of momentum, angular momentum, energy; Kepler's laws; dynamics of systems of particles; fluid mechanics. (F,W)

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 the laws of thermodynamics. Introduction to wave motion, resonance. Sound and acoustics. Electric and magnetic fields. Electric power. Elements of DC and AC circuits. (W,Sp)

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. The electron and the atom. Matter waves. Nuclear and particle physics. (F,Sp)

6A. Physics for Life Science Majors: Mechanics and Wave Motion. Lecture/demonstration, three hours; discussion, one hour; laboratory, two hours. Prerequisites: Mathematics 3A, 3B, 3C (may be taken concurrently), or equivalent. (F,W)

6B. Physics for Life Science Majors: Electricity and Magnetism. Lecture/demonstration, three hours; discussion, one hour; laboratory, two hours. Prerequisite: course 6A. (W,Sp)

6C. Physics for Life Science Majors: Light and Modern Physics. Lecture/demonstration, three hours; discussion, one hour; laboratory, two hours. Prerequisite: course 6B. (F,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's laws, work, energy, linear and angular momentum, rotation, equilibrium, gravitation. (F,W,Sp)

8AL. Physics Laboratory for Scientists and Engineers: Mechanics (1 unit). Lecture, one hour; laboratory, 90 minutes. 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)

8BL. Physics Laboratory for Scientists and Engineers: Waves, Sound, Heat (1 unit). Lecture, one hour; laboratory, 90 minutes. Corequisite: course 8B or consent of instructor. (F,W,Sp)

8BH. General Physics: Vibration, Wave Motion, Sound, Fluids, Heat, and Kinetic Theory (Honors). Lecture/demonstration, three hours; discussion, one hour. Prerequisites: course 8A with a grade of A or recommendation of 8A instructor, Mathematics 31B (or preferably 31BH) completed and 32A (or preferably 32AH) concurrent, or equivalent. The same material as course 8B but in greater depth. (Sp)

8HB. Physics for Scientists and Engineers (Honors) (5 units). Lecture, four hours; discussion/laboratory, two and one-half hours. Prerequisite: same as for the Physics 8 and 8L series. Limited to the top 20 students (determined by previous Physics 8 grades) with consent of instructor. Intended for outstanding students with a deep interest in physics. Honor students participate in the lectures and examinations of the regular Physics 8 series. Discussions and laboratories given by an honors instructor who discusses challenging problems in depth. (F,W,Sp)

8C. Physics for Scientists and Engineers: Electricity and Magnetism. Lecture/demonstration, three 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's law, Faraday's law. Maxwell's equations in integral form. Inductance and transients in RL circuits. (F,W,Sp)

8CL. Physics Laboratory for Scientists and Engineers: Electricity and Magnetism (1 unit). Lecture, one hour; laboratory, 90 minutes. Corequisite: course 8C or consent of instructor. (F,W,Sp)

8CH. General Physics: Electricity and Magnetism (Honors). Lecture/demonstration, three hours; discussion, one hour. Prerequisites: course 8BH or 8B with a grade of A or recommendation of 8B instructor and Mathematics 32A (or preferably 32AH) completed and 32B (or preferably 32BH) concurrent, or consent of instructor. The same material as course 8C but in greater depth. (F)

8HC. Physics for Scientists and Engineers (Honors) (5 units). Lecture, four hours; discussion/laboratory, two and one-half hours. Prerequisite: same as for the Physics 8 and 8L series. Limited to the top 20 students (determined by previous Physics 8 grades) with consent of instructor. Intended for outstanding students with a deep interest in physics. Honor students participate in the lectures and examinations of the regular Physics 8 series. Discussions and laboratories given by an honors instructor who discusses challenging problems in depth. (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's equations in differential form. Electromagnetic waves. Light: reflection, refraction, interference, diffraction, polarization. The special theory of relativity. (F,W,Sp)

8DL. Physics Laboratory for Scientists and Engineers: Electromagnetic Waves, Light, and Relativity (1 unit). Lecture, one hour; laboratory, 90 minutes. Corequisite: course 8D or consent of instructor. (F,W,Sp)

8DH. General Physics: Electromagnetic Waves, Light, and Relativity (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 (or preferably 32BH) completed and 33A (or preferably 33AH) concurrent, or consent of instructor. The same material as course 8D but in greater depth. (W)

8HD. Physics for Scientists and Engineers (Honors) (5 units). Lecture, four hours; discussion/laboratory, two and one-half hours. Prerequisite: same as for the Physics 8 and 8L series. Limited to the top 20 students (determined by previous Physics 8 grades) with consent of instructor. Intended for outstanding students with a deep interest in physics. Honor students participate in the lectures and examinations of the regular Physics 8 series. Discussions and laboratories given by an honors instructor who discusses challenging problems in depth. (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, Schroedinger 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 courses 3A, 6A, 8A, or an equivalent course in mechanics. Special mathematical preparation beyond that necessary for admission to the University in freshman standing is not required. Satisfies in part the Letters and Science requirements in the physical sciences for nonphysical science majors. Topics include planetary motion, Newton's laws, gravitation, electricity and magnetism, wave motion, light, sound, and heat, relativity, quantum mechanics, atoms, and subatomic particles. As time permits, the development of physical ideas is placed in cultural and historical perspective. (F,W,Sp)

11. Modern Physics for Nonscience Majors. Lecture/demonstration, three hours; quiz/discussion, one hour. Prerequisite: course 10. Topics include the concept of energy, quantum theory, nuclear physics, relativity.

14A-14B. Mechanics: Preparatory Courses. Lecture, three hours; discussion, one hour. Prerequisites: Mathematics 3A, 3B, and 3C, or 31A. Corequisite for course 14A: Mathematics 31B. Introductory courses in mechanics that satisfy the physics prerequisite for course 6B or 8B. Primarily intended for students who are inadequately prepared for course 6A or 8A. Lectures, demonstrations, discussions, laboratory, and small group problem-solving sessions. (W,Sp)

Upper Division Courses

Prerequisites for all upper division courses: Physics 8A through 8E, Mathematics 31A, 31B, 32A, 32B, 33A, and (except for Physics 105A, 116) 33B, or consent of instructor. Students must complete one quarter of upper division physics before enrolling in the 180 laboratory series.

105A. Analytic Mechanics. Newtonian mechanics and conservation laws, gravitational potentials, calculus of variations, Lagrangian and Hamiltonian mechanics, central force motion, linear oscillations.

105B. Analytic Mechanics. Prerequisite: course 105A. Relativity with four vectors, non-inertial reference frames, dynamics of rigid bodies, coupled oscillators, normal modes of oscillation, vibrating strings, and wave propagation.

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.

110B. Electricity and Magnetism. Prerequisite: course 110A. Faraday's law and Maxwell's equations. Propagation of electromagnetic radiation. Multipole radiation and radiation from an accelerated charge. The special theory of relativity.

112. Thermodynamics. (Formerly numbered 112A.) Lecture, three hours; discussion, one hour. Fundamentals of thermodynamics, including the first, second, and third laws. The statistical mechanical point of view and its relation to thermodynamics. Some simple applications.

114. Mechanics of Wave Motion and Sound. 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 105B (may be taken concurrently), 131. The classical background, basic ideas, and methods of quantum mechanics.

115B. Elementary Quantum Mechanics. Prerequisite: course 115A. Development of the methods and concepts of quantum mechanics.

116. Electronics. Lecture, three hours; laboratory, three hours. Alternating current circuits, vacuum tube characteristics and parameters, transistor characteristics and parameters, amplifiers, oscillators, nonlinear tube and transistor circuits.

M122. Plasma Physics. (Same as Electrical Engineering M185.) 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. The theory of atomic structure. Interaction of radiation with matter.

124. Nuclear Physics. Lecture, three hours; discussion, one hour. Prerequisite: course 115B. Nuclear charge, mass, radius, spin, and moments; nuclear models; nuclear forces; alpha, beta, and gamma emission.

126. Elementary Particle Physics. Prerequisite: course 115B. Experimental determination of the properties of elementary particle states. Relativistic kinematics and phase space; angular momentum and isotopic spin formalism; elastic and inelastic scattering; invariance principles and conservation laws; strong, electromagnetic, and weak interactions. Survey of important experiments.

131. Mathematical Methods of Physics. (Formerly numbered 131A.) Lecture, three hours; discussion, one hour. Vectors and fields in space, linear transformations, matrices, and operators; Fourier series and integrals.

132. Mathematical Methods of Physics. (Formerly numbered 131B.) Lecture, three hours; discussion, one hour. Prerequisite: course 131. Green's functions and boundary value problems, complex variables, and topics selected from tensors, Laplace transforms, probability theory, approximation techniques.

140. Introduction to Solid-State Physics. Prerequisite: course 115B or equivalent. Introduction to the basic theoretical concepts of solid-state physics with applications. Crystal symmetry; cohesive energy; diffraction of electron, neutron, and electromagnetic waves in a lattice; the reciprocal lattice; phonons and their interactions; free electron theory of metals; energy bands.

160. Introduction to Plasma Physics through Computer Modeling. Lecture, three hours; discussion, one hour. Prerequisites: courses 105A, 105B, 110A, 110B. Computer simulations of plasma behavior; wave propagation in plasmas, Landau damping of waves, Coulomb collisions between particles, collective transport of plasmas across magnetic fields, nonlinear plasma behavior. Mr. Dawson

180A. Nuclear Physics Laboratory.

180B. Physical Optics and Spectroscopy Laboratory.

180C. Solid-State Physics Laboratory.

180D. Acoustics Laboratory.

180E. Plasma Physics Laboratory.

180F. Elementary Particle Physics Laboratory.

185. Foundations of Physics. Prerequisite: senior standing in physics or consent of instructor. The 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 the Physics B.S. degree requirements.

Graduate Courses

210A. Electromagnetic Theory. Boundary value problems in electrostatics and magnetostatics. Multipole expansions; dielectrics and macroscopic media. Maxwell's equations and conservation laws. Wave guides and resonators; simple radiating systems.

210B. Electromagnetic Theory. The electromagnetic potentials and the Hertz vectors. Cylindrical waves. Spherical waves. Debye potentials. Multipole radiation. Classical relativistic electrodynamics. Radiation from moving charges.

213A. Advanced Atomic Structure. Group representation theory. Angular momentum and coupling schemes. Interaction of radiation with matter.

213B. Advanced Atomic Structure. The 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.

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; the Coulomb gas; the imperfect Bose gas; electron-phonon interaction; superconductivity; phase transitions; theory of Fermi liquid.

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. Quantum Mechanics. Lecture, three hours. Fundamentals of quantum mechanics, operators and state vectors, equations of motion.

221B. Quantum Mechanics. Lecture, three hours. Prerequisite: course 221A. Rotations and other symmetry operations, perturbation theory.

221C. Quantum Mechanics. Lecture, three hours. 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, the scattering matrix, the density matrix and polarization, the properties of pions, the one pion exchange potential, phase shift analysis.

225A-225B. Advanced Nuclear Physics. Prerequisites: courses 221A, 221B. Normally preceded by course 224. An advanced course in the structure of complex nuclei, nuclear models, scattering and reactions.

226A-226B-226C. Elementary Particle Physics (6 units each). (Formerly numbered 226A-226B.) 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, Ws, Z°, and γ, quark theory of hadrons and quantum chromodynamics.

230A-230B-230C. Relativistic Quantum Theory (6 units each). Lecture, four hours. Prerequisites: courses 221A, 221B, and 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. The 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 the 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.

260. Seminar: Problems in Plasma Physics.

261. Seminar in Special Problems in Theoretical Physics.

262. Seminar in Physics of the Solid State.

264. Seminar in Advanced Physical Acoustics.

266. Seminar in Propagation of Waves in Fluids.

268. Seminar in Spectroscopy.

269A. Seminar in Nuclear Physics (2 to 4 units).

269B. Seminar in Elementary Particle Physics (2 to 4 units).

280E. Advanced Plasma Laboratory. Lecture, two hours; laboratory, four hours. Prerequisites: courses M122, 180E. Laboratory experiments on the behavior of plasmas in magnetic fields. Study of the basic physics of particle motions, distribution functions, and fluid dynamics. Plasma waves and nonlinear phenomena. Advanced probe, microwave and plasma diagnostics.

284. Advanced Laboratory in Acoustics and Cryogenics. Selected advanced experiments in acoustics and cryogenics designed to train students in the techniques and instrumentation used in acoustic research and low-temperature physics.

290. Research Tutorial in Plasma Physics (2 or 4 units). Seminars and discussion by staff and students directed toward problems of current research interest in the plasma physics group, both experimental and theoretical. Each graduate student doing research in this field is required to take three quarters of this course, ordinarily during the second or third year. May be repeated for credit. S/U grading.

291. Research Tutorial in Elementary Particle Theory (2 or 4 units). Prerequisites: courses 226A, 230A, 230B. Seminars and discussion by staff, postdoctoral fellows, and graduate students. Each graduate student doing research in this field is required to take this course, ordinarily during the second or third year. May be repeated for credit. S/U grading.

292. Research Tutorial in Spectroscopy, Low-Temperature, and Solid-State Physics (2 or 4 units). Seminars and discussion by staff and students on problems of current research interest in spectroscopy, low-temperature, and solid-state physics. Each graduate student doing research in these fields is required to take this course, ordinarily during the second or third year. May be repeated for credit. S/U grading.

295. Research Tutorial in Solid Earth Physics (2 or 4 units). Seminars and discussion in solid earth physics. Each graduate student doing research in this field is required to take this course (or course 292 if appropriate), ordinarily in the second or third year. May be repeated for credit. S/U grading.

298. Research Tutorial in Experimental Elementary Particle Physics (2 or 4 units). Limited to six students. Seminars and discussion by staff and students on current problems in experimental elementary particle physics. Each graduate student doing research in this field is required to take this course, ordinarily during the second or third year. May be repeated for credit. S/U grading.

299. Research Tutorial in Nuclear Physics (2 or 4 units). Seminars and discussion in nuclear physics by staff and students, in both experiment and theory. Each graduate student doing research in this field is required to take this course, ordinarily during the second or third year. May be repeated for credit. S/U grading.

370. The Teaching of Physics. Prerequisite: consent of instructor. A study of the physics laboratory experiments and demonstrations available today for secondary school and community college physics courses. Part of the 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. A teaching apprenticeship under the 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 of College Physics (2 units). Lecture/discussion (five or more one-hour meetings during the quarter, plus intensive training week at the beginning of Fall Quarter). Required of all new teaching assistants. A special course for teaching assistants designed to deal with the problems and techniques of teaching college physics. The ideas and techniques learned applied and evaluated in the sections of each teaching assistant. May be repeated for credit. S/U grading.

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).

Political Science

4289 Bunche Hall, (213) 825-4331

Professors

Joel Aberbach, Ph.D.
Richard E. Ashcraft, Ph.D.
Hans H. Baerwald, Ph.D.
Richard D. Baum, Ph.D.
Irving Bernstein, Ph.D.
Leonard Binder, Ph.D.
David T. Cattell, Ph.D.
Mattei Dogan, Docteur ès Lettres
Leonard Freedman, Ph.D.
Robert C. Fried, Ph.D.
Robert S. Gerstein, LL.B., Ph.D.
Edward Gonzalez, Ph.D.
Arnold Horelick, Ph.D.
Michael Intriligator, Ph.D.
Roman Kolkowicz, Ph.D.
Andrzej Korbonski, Ph.D.
Michael F. Lofchie, Ph.D.
Dwaine Marvick, Ph.D.
Charles R. Nixon, Ph.D.
David C. Rapoport, Ph.D.
John C. Ries, Ph.D.
Ronald L. Rogowski, Ph.D.
David O. Sears, Ph.D.
Richard Sisson, Ph.D., *Chair*
Richard L. Sklar, Ph.D.
Stephen L. Spiegel, Ph.D.
David O. Wilkinson, Ph.D.
David A. Wilson, Ph.D.
James Q. Wilson, Ph.D.
E. Victor Wolfenstein, Ph.D.
Charles E. Young, Ph.D.
Ciro Zoppo, Ph.D.

Emeritus Professors

Winston W. Crouch, Ph.D.
Ernest A. Engelbert, M.P.A., Ph.D.
David G. Farrelly, Ph.D.
J.A.C. Grant, Ph.D., LL.D.
Marvin Hoffenberg, M.A.
Foster H. Sherwood, Ph.D., LL.D.
H. Arthur Steiner, Ph.D.

Associate Professors

L. Blair Campbell, Ph.D.
Douglas S. Hobbs, Ph.D.
Karen J. Orren, Ph.D.
John R. Petrocik, Ph.D.
Raymond A. Rocco, Ph.D.
Duane E. Smith, Ph.D.
Leo M. Snowiss, Ph.D.
Arthur A. Stein, Ph.D.

Assistant Professors

Jeffry A. Frieden, Ph.D.
Barbara Geddes, M.A., *Acting*
David A. Lake, Ph.D.
Michael Wallerstein, A.B.D.
John Zaller, Ph.D.

Scope and Objectives

The undergraduate program in political science aims to provide an 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 entering UCLA in Fall Quarter 1984 or thereafter must fulfill the requirements for the political science major listed in this catalog. Those who entered prior to Fall Quarter 1984 should consult the departmental counselor.

Pre-Political Science Major

All students intending to major in political science must enroll as pre-political 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, 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 are required in those fields designated as your concentration or distribution field.

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, 117), 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 six fields: (I) political theory, (II) international relations, (III) politics, (IV) comparative politics, (V) public law, and (VI) public administration and local government.

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. It is recommended that one of these courses be an undergraduate seminar (C197A-C197C; see field concentration requirements below).

(2) A **distribution** of the two lower division courses and two courses in each of two other fields (four upper division courses).

(3) Two additional elective courses in political science to comprise the total of 10.

Students who entered prior to Fall Quarter 1984 should consult the departmental counselor.

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 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) *Politics:* Course 40 and any four courses in Field III. Course 182A may also be applied toward concentration in this field.

(IV) *Comparative Politics:* Courses 50, 168, and any three additional courses in Field IV. Course 115, 188A, or 188B — but no more than one of them — may also be applied toward concentration in this field.

(V) *Public Law:* Courses 70, 170, and any three additional courses in Field V. Course 70 is prerequisite to 172A and 172B.

(VI) *Public Administration and Local Government:* Course 80 and any four courses in Field VI. Course 138C, 173, or 174 — but no more than one of them — may also be applied toward concentration in this field.

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 quarter 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, while also providing the additional professional skills relevant to their particular career objectives. 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.).

The program, unless you choose the M.A. thesis option, consists of three fields of study (two major fields in political science and a minor field which may be outside the department). You take coursework in these fields during the first two years of the program, at the end of which you take qualifying examinations in your two major fields. If you qualify for the Ph.D. on the basis of these examinations, you take an examination the following year in your minor field and complete the course requirements for the Ph.D. You also prepare a research design for your dissertation and, finally, complete the dissertation.

You are eligible to receive a master's degree when you qualify for the Ph.D. If you do not qualify for the Ph.D., you still receive a master's degree if your qualifying examinations merit it and you have completed the course-

work required for the first two years. If you choose the thesis program, you do not have a minor field and write a thesis at the end of two years instead of taking examinations. You receive a master's degree after successfully completing the program.

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 irrespective of their preference for the M.A. or Ph.D. degree. Prospective students may write for departmental brochures to the Graduate Studies Office, Department of Political Science, 4289 Bunche Hall, UCLA, Los Angeles, CA 90024. The department does not have an application form in addition to the one used by the Graduate Admissions Office. The deadline for receipt of all application materials is December 31 prior to the Fall Quarter in which you plan to register.

Fields of Study

Seven fields of study are offered to graduate students in the department: political theory; international relations; politics; comparative politics; public law; public administration and local government; and methodology.

Foreign Language or Research Methodology Requirement

There is no foreign language requirement for the M.A. degree.

For the Ph.D., you must fulfill one of the following requirements:

(1) Foreign language proficiency may be demonstrated by passing the Educational Testing Service (ETS) examination with a minimum score of 550. In languages for which no ETS examination is given, you must take a department examination to test your proficiency at a level comparable to an ETS score of 550. You may also satisfy the requirement by having completed, with a grade of B or better, the final course in a two-year sequence of college courses in a foreign language.

(2) Research methodology proficiency may be demonstrated by completing three courses (normally Political Science 204A, 204B, 204C) with grades of B or better. Comparable courses in quantitative methodology may be substituted for courses 204A and 204B by petition, but you are expected to take course 204C to complete the requirement.

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

During the first two years of the program you are required to take a minimum of 12 substantive courses (exclusive of Political Science 597 and 598), of which eight must be in two major fields in political science. If methodology is one of your major fields, one of the courses may be taken outside the department. The 12 courses must be distributed as follows:

(1) A minimum of four graduate courses is required in each of your two major fields. Each field designates the core courses needed to fulfill a major in that field. Where approved by a field, you may take one designated concepts and methods (CAM) course (Political Science 203A or 203B) to satisfy one of the four course requirements in either of the two major fields, but not in both fields.

(2) In addition, you are required to take one course in statistics (normally course 204A). Graduate statistics courses in other departments may be substituted by petition.

(3) Unless you select the thesis plan, you must take a minimum of two courses in a minor field, of which at least one must be at the graduate level. The minor field may be taken in one of the seven fields of political science, in the CAM series offered by the department, or in an outside discipline, area studies program, or professional school. If the minor is outside the Political Science Department, your plan of study must be approved by the graduate studies committee. If methodology is a major field, the minor must be taken within the department.

(4) If you select the M.A. thesis plan, you must take two courses related to your thesis in lieu of the minor field requirements.

(5) All students must take an additional graduate course as an elective, selected from within or outside the department. If your minor is taken outside the department, the elective must be in one of the seven fields, excluding the two major fields. It may not be course 596.

(6) A maximum of three 596 courses may be applied toward the requirement of 12 substantive courses, but no more than two 596 courses may be taken in any of the two major fields.

Transfer Students: With the approval of the relevant field committee and the dean of the Graduate Division, a maximum of two graduate courses taken at another institution may be applied toward the 12-course requirement in the first two years of the program. If the courses were taken at another UC campus, the number is increased to four, and if you already have an M.A. in Political Science, to six. Although you may have a master's degree at entrance, you must go through the qualifying examination process to qualify for the Ph.D.

After the two-year program is completed and you have qualified to pursue the Ph.D. as a result of the qualifying examinations, you select your individual research adviser and chart the plan of study to be followed. You must be in residence for a minimum of two quarters, during which time you are to satisfy the following minimum requirements:

(1) **Minor Field:** You must complete your third course in the minor field and take a written examination or submit a paper appropriate for determining proficiency in the minor field. In case of failure you may retake the examination once.

(2) **Elective:** With the approval of your research adviser and graduate adviser, you take one elective course within or outside the department. The elective should be relevant to the dissertation topic and may be a 596 course provided it is a substantive course.

(3) **Directed Reading and Research:** You must take Political Science 590A to research your proposed dissertation topic and 590B to prepare your research design for the dissertation. Normally, course 590B is taken preceding or during the quarter in which the oral examination is taken. With the approval of your research adviser, you may take more than one elective or 590A or 590B course.

Teaching Experience

All graduate students in the Department of Political Science, before being granted the Ph.D., are required to have formal teaching experience in an institution of higher learning. Waiver of this requirement is possible in exceptional circumstances by petition to the graduate studies committee.

Thesis Plan

If you select the thesis plan, you qualify solely for the M.A. degree. The two courses you take instead of a minor field are under the direction of your thesis adviser. They usually are Political Science 596 which is normally taken in the Fall and Winter Quarters of the second year, followed by course 598 in Spring Quarter.

You must decide on the thesis plan by the middle of the Spring Quarter of your first year and must form a thesis committee. You begin researching and writing the thesis by the Fall Quarter of your second year, working closely with members of the committee. The final version of the thesis must be submitted to the committee no later than the sixth week of the Spring Quarter so that the M.A. degree can be conferred by the end of that quarter, provided all requirements have been met and the thesis has been approved.

If the committee does not receive or does not approve the thesis, you are considered to have failed the requirement and are not allowed to resubmit the thesis. If you have received the M.A. on the thesis plan, you may register for the Ph.D. program without reapplying, but you must take the qualifying examinations in the two major and one minor fields by the Spring Quarter of your third year at UCLA.

Qualifying Examinations

You must take the qualifying examinations in your two major fields by the Spring Quarter of your second year unless you have selected the M.A. thesis plan. Retake examinations are taken in the Fall Quarter of the subsequent year. The outcome of the spring examinations determines whether you (1) qualify for the Ph.D. and obtain an M.A.; (2) obtain an M.A. degree but do not qualify for the Ph.D.; (3) obtain an M.A. but must retake an examination in one or both fields to qualify for the Ph.D.; or (4) fail to obtain an M.A. and are terminated from the program.

Written examinations are given in each of the major fields. Each field committee provides assessments of the examinations as to whether (1) your performance is sufficient for the M.A. degree and (2) also qualifies you to begin work at the Ph.D. level. The following two-tier grading system is used for each examination: for the M.A., grades are pass and not pass; for the Ph.D., grades are not qualified, marginal, qualified, and qualified with distinction. To obtain an M.A. degree only, you must receive a grade of pass on at least one field examination. If you obtain a pass on both field examinations, you receive a departmental letter certifying qualification in both fields.

To qualify for the Ph.D., you must (1) receive grades of pass on both field examinations and (2) receive a grade of qualified or qualified with distinction in both examinations. If grades of marginal are received on both examinations, an ad hoc committee is formed to determine whether you will be allowed to retake the examinations.

There are no retake examinations for the M.A. degree. Retake examinations are given to determine whether you qualify for the Ph.D. track. They may be retaken once only, provided you receive a grade of qualified in one field and not qualified or marginal in the second field.

Once you have successfully completed all course and examination requirements and have prepared a formal research design for the proposed dissertation acceptable to the research adviser, you may proceed to the University Oral Qualifying Examination. The research design must be submitted to the oral examination committee at least two weeks before the examination. The purpose of the oral examination is to assess the adequacy of your preparation in undertaking the proposed dissertation, to suggest ways in which the research design may be strengthened, and to determine whether the proposed dissertation is feasible and can be completed successfully. After successful completion of the University Oral Qualifying Examination and the language or methodological requirement, you are advanced to candidacy.

Approval of a written dissertation by your doctoral committee constitutes the final requirement for the Ph.D. degree in Political Science.

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 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. An introduction to the principles and problems of government, with particular emphasis on national government in the United States. Fulfills the American History and Institutions requirement but does not fulfill a "Preparation for the Major" requirement.

6. Introduction to Quantitative Research. An introduction to the collection and analysis of political data, with emphasis on the application of statistical reasoning to the study of relationships among political variables. Use of the computer as an aid in analyzing data from various fields of political science, among them comparative politics, international relations, American politics, and public administration.
Ms. Geddes

10. Introduction to Political Theory. (Formerly numbered 110.) Lecture, three hours; discussion, one hour. Meets the Political Science 110 requirement for all students who need 110 for the major. An exposition and analysis of selected political theorists and concepts from Plato to the present.
Mr. Ashcraft, Mr. Campbell, Mr. Rapoport, Mr. Smith

20. World Politics: Problems of Power Politics. (Formerly numbered 2A.) Lecture, three hours; discussion, one hour. Required of all students concentrating in Field II. Introduction to problems of world politics. Mr. Wilkinson (F,W,Sp)

40. Introduction to Politics. The basic institutions and processes of democratic politics. A treatment of themes such as constitutionalism, representation, participation, and leadership coupled with particular emphasis on the American case.

50. Introduction to Comparative Politics. (Formerly numbered 3.) Lecture, three hours; discussion, one hour. A comparative study of constitutional principles, governmental institutions, and political processes in selected contemporary states, with emphasis on the major European governments.

70. The Supreme Court. (Formerly numbered 171.) Lecture, four hours; discussion, one hour. Required of all students concentrating in Field V. An introduction to American constitutional development and the role of the 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 Administration. (Formerly numbered 181.) An introduction to the role of the bureaucracy in the modern state. Particular attention to the performance of American administrative systems. Mr. Fried, Mr. Ries

Upper Division Courses

Prerequisite for all upper division courses: upper division standing or consent of instructor.

102. The Statistical Analysis of Political Data. (Formerly numbered C102.) Prerequisite: course 6. An 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, the analysis of variance, and multiple regression and correlation. Statistical techniques and topics illustrated with applications to a variety of political data. Mr. Marvick, Mr. Petrocik

104A-104B. Introduction to Survey Research. Prerequisite: course 6. Courses in the fundamentals of survey research as a method. **104A.** Sampling theory and methods, the writing of questions, questionnaire construction, and interviewing. Attitudes, attitude measurement, and attitude change. Participation in the formulation of a research problem. **104B.** Prerequisite: course 104A. Conducting a survey. Development of a survey questionnaire, designing a sample, collecting interviews, maintaining quality control, and coding the interviews for machine tabulation. Performance of a computer-aided analysis of some part of the data and submission of a written report of that research. Both quarters must be taken to receive credit.

M105. Economic Models of Public Choice. (Formerly numbered M103A.) (Same as Economics M135.) Prerequisites: Economics 101A, any lower division political science course other than Political Science 1, and junior/senior standing, or consent of instructor. Analysis of the methods and consequences of arriving at collective decisions through political mechanisms. Topics include the free-rider problem, voting and majority choice, demand revelation, and political bargaining. Mr. Hirshleifer, Mr. Rogowski, Mr. Stein, Mr. Wallerstein

M106. Economic Models of Political Conflict and Conflict Resolution. (Formerly numbered M103B.) (Same as Economics M136.) Prerequisites: Economics 101A, 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. The role of threats, promises, commitments. Models of the onset and termination of conflict. The conduct of war: strategy and tactics. Mr. Hirshleifer, Mr. Stein

Field I: Political Theory

111A. History of Political Thought: Ancient and Medieval Political Theory. An exposition and critical analysis of the major political philosophers and schools from Plato to Machiavelli. Mr. Campbell

111B. History of Political Thought: Early Modern Political Theory. An exposition and critical analysis of the major political philosophers and schools from Hobbes to Bentham. Mr. Ashcraft, Mr. Campbell

111C. History of Political Thought: Late Modern and Contemporary Political Theory. An exposition and critical analysis of the major political philosophers and schools from Hegel to the present.
Mr. Ashcraft, Mr. Nixon, Mr. Wolfenstein

112. Nature of the State. A systematic analysis of modern concepts and problems of political association. Mr. Nixon

113. Problems in 20th-Century Political Theory. A study and interpretation of theorists who have focused their analyses on the social and political problems of the 20th century. Mr. Rocco

114A-114B. American Political Thought:

114A. An exposition and critical analysis of American political thinkers from the Puritan period to 1865.
Mr. Smith

114B. Prerequisite: course 114A or consent of instructor. An exposition and critical analysis of American political thinkers from 1865 to the present.
Mr. Smith

115. Theories of Political Change. A critical examination of theories of political change, the relation of political change to changes in economic and social systems, and the relevance of such theories for the experience of both Western and non-Western societies. May be applied toward either Field I or IV.
Mr. Lofchie

116. Marxism. A critical analysis of the 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 V.
Mr. Gerstein

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 a regular basis, with topics announced in the preceding quarter. 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.

Field II: International Relations

120. Foreign Relations of the United States. Lecture, three hours; discussion, one hour. A survey of the factors and forces entering into the formation and implementation of American foreign policy, with special emphasis on contemporary problems.
Mr. Frieden, Mr. Spiegel, Mr. Stein

121. Studies in Formulation of American Foreign Policy. A study of the formation of American foreign policy with respect to individual cases. Specific topics announced in the *Schedule of Classes* each quarter.
Mr. Spiegel

122. World Order. (Formerly numbered 21.) Lecture, three hours; discussion, one hour. Prerequisite: course 20. A study of the problems of the international system seen as a community capable of cooperation and development. Mr. Wilkinson

124. International Political Economy. Prerequisite: course 20. A study of the political aspects of international economic issues. Mr. Frieden, Mr. Lake

125. Arms Control and International Security. Arms control in the context of international security in the nuclear age. The nuclear arms race; the relationship between deterrence doctrines and nuclear war; the roles of technology and ideology; nuclear proliferation; outer space. Mr. Zoppo

126. Peace and War. Prerequisites: courses 6, 20. Theory and research on the causes of war and the conditions of peace. Mr. Wilkinson

127A-127B. The Atlantic Area in World Politics. (Formerly numbered 127.):

127A. Western Europe. The external relations of the United Kingdom, West Germany, France, Italy, and other European members of NATO, in regard to European security in the context of the Atlantic Alliance.
Mr. Zoppo

127B. U.S. and Europe. Prerequisite: course 127A or consent of instructor. Relations between the United States and Western European members of the Atlantic Alliance, in the context of U.S.-Soviet relations.
Mr. Zoppo

128A-128B. The Soviet Sphere in World Politics. Prerequisite: course 20. Course 128A or consent of instructor is prerequisite to 128B. A contemporary survey of the foreign policies and aspirations of the Soviet Union and other states in the Soviet bloc; analysis of content and effects of Communist doctrine affecting relations between the Soviet and democratic spheres.
Mr. Cattell, Mr. Kolkowicz, Mr. Korbonski

129. Comparative Foreign Economic Policy. An examination of the foreign trade, monetary, and investment policies of the United States, Japan, France, and the Federal Republic of Germany since 1945. Mr. Lake

130. Politics of Latin American Economic Development. The interaction of international and domestic factors in the political and economic evolution of Latin America. Mr. Frieden

131. Latin American International Relations. Prerequisite: course 20. The 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, the Arab-Israeli problem, and the 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; the role of external powers. Mr. Lofchie, Mr. Sklar

135. International Relations of China. Prerequisite: course 20. The relations of China with its neighbors and the other powers, with emphasis on contemporary interests and policies of China vis-à-vis the United States and the Soviet Union. Mr. Baum

136. International Relations of Japan. Prerequisite: course 20. The foreign policies of Japan and the interests and policies of other countries, particularly the United States, as they relate to Japan.
Mr. Baerwald

C137A-137B. International Relations Theory. (Formerly numbered 137.):

C137A. An examination of various theoretical approaches to international relations. May be concurrently scheduled with course C201. Mr. Lake

137B. Alternative approaches to the 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 United States.

138B. The Conduct of Modern War. A study of recent and contemporary wars, with special emphasis on political and strategic problems.

138C. Military Policy and Organization. A study of the institutional and policy framework in the national military field. May be applied toward either Field II or VI.
Mr. Ries

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 a regular basis, with topics announced in the preceding quarter. 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.

M139A. Political and Economic Issues in the Proliferation of Nuclear Weapons. (Formerly numbered M139.) (Same as Economics M103A.) An interdisciplinary approach to the problem of nuclear proliferation. Economic aspects of the 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: Politics

M140. Political Psychology. (Same as Psychology M138.) Prerequisite: Psychology 10. Examination of political behavior, political socialization, personality and politics, racial conflict, and the psychological analysis of public opinion on these issues.
Mr. Sears

141. Public Opinion and Voting Behavior. Lecture, three hours; discussion, one hour. A study of the character and formation of political attitudes and public opinion. The role of public opinion in elections, the relationship of political attitudes to the vote decision, and the influence of public opinion on public policy formulation. Mr. Petrocik

142. The Politics of Interest Groups. A systematic investigation of the role of political interest groups in the governmental process, with attention to the internal organization, leadership, and politics of such groups to the goals and functions of various types of groups and to the strategy and tactics of influence.
Ms. Orren

143. Legislative Politics. A study of those factors which affect the character of the legislative process and the capacity of representative institutions to govern in contemporary society.
Mr. Marvick, Mr. Snowiss

144. The American Presidency. A study of the nature and problems of presidential leadership, emphasizing the impact of the bureacracy, congress, public opinion, interest groups, and the party system on the presidency and national policy-making.
Ms. Orren, Mr. Snowiss

145. Political Parties. The organization and activities of political parties in the United States. Attention to the historical development of the parties, the nature of party change, campaign functions and the electoral role of the parties, membership problems and party activists, political finance, and policy formulation practices. Mr. Marvick, Mr. Petrocik

146. Political Behavior Analysis. Prerequisite: course 141. The use of quantitative methods in the study of political behavior, especially in relation to voting patterns, political participation, and techniques of political action.
Mr. Marvick, Mr. Petrocik

M147. Minority Group Politics. (Formerly numbered 147.) (Same as Chicano Studies M147.) Lecture, three hours; discussion, one hour. Prerequisites: course 1 plus one of the following: one additional 140-level course or one upper division course on race or ethnicity from history, psychology, or sociology, or consent of instructor. A systematic evaluation of the functioning of the American polity related to problems of race and ethnicity. Topics include leadership, organization, ideology, conventional versus unconventional political behavior, inter-minority relations, cooptation, symbolism, and repression. Mr. Rocco

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 politics. Sections offered on a regular basis, with topics announced in the preceding quarter. 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.

Also see course 182A

Field IV: Comparative Politics

152. British Government. The government and politics of the United Kingdom; the British constitution, parliament, parties and elections, foreign policies, administrative problems, and local governments.
Mr. Freedman

153. Governments of Western Europe. The constitutional and political structure and development of France and other states of continental Western Europe, with particular attention to contemporary problems. Mr. Dogan, Mr. Rogowski

154. Governments of Central Europe. The constitutional and political structure and development of Germany and other Central European states, with particular attention to contemporary problems.
Mr. Rogowski

156. The Government of the Soviet Union. An intensive study of the 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. Cattell, Mr. Kolkowicz, Mr. Korbonski

157. Governments of Eastern Europe. A study of the political and governmental organization of the Communist countries of Eastern and Central Europe (exclusive of the U.S.S.R.), with special reference to the institutions, practices, and ideologies including interregional relations. Mr. Korbonski

159. Chinese Government and Politics. Organization and structure of Chinese government, with particular attention to the policies, doctrines, and institutions of Chinese Communism; political problems of contemporary China. Mr. Baum

160. Japanese Government and Politics. The structure and operation of the contemporary Japanese political system, with special attention to domestic political forces and problems.
Mr. Baerwald

161. Government and Politics in Southeast Asia. The institutional and political processes and problems of states in Southeast Asia (Burma, Thailand, Malaya, Laos, Cambodia, Vietnam, Indonesia, and the Philippines).

162. Government and Politics in South Asia. A comparative study of political change and the development and performance of public institutions in Southern Asia, with special emphasis on India, Pakistan, and Bangladesh. Mr. Sisson

163A-163B. Government and Politics in Latin America:

163A. A comparative study of governmental and political development, organization, and practices in the states of Middle America. Mr. Gonzalez

163B. A comparative study of governmental and political development, organization, and practices in the states of South America.
Ms. Geddes, Mr. Gonzalez

164. Government and Politics in the Middle East. A comparative study of government in the Arab States, Turkey, Israel, and Iran. Mr. Binder

165. Government and Politics in North Africa. A comparative study of the government and politics of the North African states, including the 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 the problems of development: **166A.** Western Africa; **166B.** Eastern Africa; **166C.** Southern Africa.
Mr. Lofchie, Mr. Sklar

167. Ideology and Development in World Politics. A comparative study of the major modes of political and economic development in the world today. Relations between industrial and nonindustrial societies in light of the current debate about imperialism.
Mr. Sklar

168L. Comparative Political Analysis. Lecture. Prerequisites: two courses in Field IV, or course 50 and one course in Field IV. Either course 168L or 168S is required of all students concentrating in Field IV (students with credit for course 168S will not receive credit for this course). Conducted as a lecture course. Major approaches to the study of comparative politics. Concepts and methodology of comparative analysis. Mr. Baum

168S. Comparative Political Analysis. Seminar. Prerequisites: two courses in Field IV, or course 50 and one course in Field IV, and consent of instructor. Either course 168L or 168S is required of all students concentrating in Field IV (students with credit for course 168L will not receive credit for this course). Conducted as a seminar. Major approaches to the study of comparative politics. Concepts and methodology of comparative analysis. Mr. Dogan

169A-169Z. Special Studies in Comparative Politics. (Formerly numbered M169A-M169Z.) Prerequisites: two courses in Field IV, consent of instructor. Intensive examination of one or more special problems appropriate to comparative politics. Sections offered on a regular basis, with topics announced in the preceding quarter. 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.

Also see courses 115, 188A, 188B

Field V: Public Law

170. The Anglo-American Legal System. Lecture, four hours; discussion, one hour. Required of all students concentrating in Field V. Evolution of the English common law courts and their legal system, with emphasis on the development of the basic concepts of law which were received from that system in the United States and remain relevant today.
Mr. Gerstein

172A-172B. American Constitutional Law. Prerequisite: course 70:

172A. Constitutional questions concerning the separation of powers, federalism, and the relationship between government and property.
Mr. Gerstein, Mr. Hobbs

172B. The protection of civil and political rights and liberties under the constitution.
Mr. Gerstein, Mr. Hobbs

173. Government and Business. The nature of the corporation; the 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 Field V or VI. Mr. Bernstein, Ms. Orren

174. Government and Labor. The labor force and the nature of the trade union; regulation of labor relations; programs to encourage full employment and to mitigate unemployment; protective labor legislation. May be applied toward either Field V or VI.
Mr. Bernstein

175A-175B. International Law. A study of the nature and place of international law in the conduct of international relations. May be offered in consecutive terms or simultaneously. If offered consecutively, course 175A is prerequisite to 175B, and a student may take 175A alone for four units credit. If offered simultaneously, a student must take both courses for eight units. A maximum of four units may be applied toward Field II.

179A-179Z. Special Studies in Public Law. Prerequisites: course 70, one additional course in Field V, any special requirements, consent of instructor. Intensive examination of one or more special problems appropriate to public law. Sections offered on a regular basis, with topics announced in the preceding quarter. 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.

Also see courses 117, 187

Field VI: Public Administration and Local Government

180. State and Local Government. A study of state political systems, including their administrative and local subsystems; intergovernmental relationships; their policy outputs, with specific attention to California. Mr. D. Wilson

182A. Metropolitan Area Government and Politics. An overview of the political and social organization, decision-making processes, policy problems, and conflicts of metropolitan areas and their central cities and suburbs. Attention to the impact on these areas of the national and state political systems and racial, ethnic, and protest movements. May be applied toward either Field III or VI.

182B. City Government and Politics. Prerequisite: course 182A or consent of instructor. Intensive analysis of contemporary urban governance in the United States. Emphasis on such student participatory activities as fieldwork, research, and gaming of urban politics and policy problems. Mr. Fried

183. Administration of International Agencies and Programs. An examination of the administrative patterns and practices of the United Nations agencies and overseas development programs, including distinctive characteristics of organization and management selection of personnel, and methods of financing.

185. Public Personnel Administration. The process of formulating and administering public personnel policies; concepts and principles utilized in selected governmental personnel systems. Focus on governmental systems in the United States (national, state, local, foreign service, military), but comparisons also made with other selected governmental systems.

186. National Policy and Administration. A study of the major policies and programs of the national government and their administration as illustrated in such areas as national defense, social welfare, agriculture, etc. Particular attention to the role of the President and other administrators in formulating public policy and in maintaining a responsible bureaucracy. Mr. Fried

187. Law and Administration. Legal controls of administration action. Substantive and procedural limits on administrative discretion imposed by legislation, executive and judicial agencies, and the sources of legal powers of administrative bodies within these limits. May be applied toward either Field V or VI.
Mr. Hobbs

188A. Comparative Public Administration. An analysis of bureaucratic structures and function in the United States, other industrialized, and less developed countries, primarily at the national level. Special attention to methods of comparative analysis and the utility of various models. May be applied toward either Field IV or VI. Mr. Fried

188B. Comparative Urban Government. A cross-cultural examination of the forms and processes of urban government. Particular attention to the role of urbanization in political development. May be applied toward either Field IV or VI. Mr. Fried

189A-189Z. Special Studies in Public Administration. Prerequisites: two courses in Field VI, consent of instructor. Intensive examination of one or more special problems appropriate to public administration. Sections offered on a regular basis, with topics announced in the preceding quarter. 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.

190. Theories of Organization. An examination of the theoretical frameworks for studying public and private bureaucracies, with emphasis on ideologies, values, behavioral patterns, and concepts of organization.

191. Urban and Regional Planning and Development. A comparative study of governmental policies, procedures, and agencies involved in the planning and development of urban and regional communities and areas.

Also see courses 138C, 173, 174

Special Studies

195A-195B-195C. Honors Seminar and Thesis. Prerequisites: one course in the C197 series, a 3.5 GPA in upper division political science courses, eligibility for Letters and Science honors status. Course 195A is prerequisite to 195B, which is prerequisite to 195C. A 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 a 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 the instructor to discuss the progress of their research.

195B-195C. Writing of an honors thesis under the direction of a faculty member. The thesis is read by the appropriate field committee and graded high honors, honors, or no honors.

C197A-C197F. Seminars for Majors. Prerequisites: political science major, upper division standing, a 3.25 GPA in upper division political science courses, two upper division courses in the field in which the seminar is offered. May be applied toward the distribution or concentration requirement. May be concurrently scheduled with various graduate courses.

199. Readings in Political Science (2 to 4 units). Prerequisites: upper division standing, 3.0 overall GPA, consent of instructor and department chair. Individual study. May not be applied toward the concentration or distribution requirement. May be repeated for a maximum of 16 units.

Graduate Courses

C201. International Relations. An examination of various theoretical approaches to international relations. May be concurrently scheduled with course C137A. Mr. Lake, Mr. Stein

203A-203B. Introduction to Political Inquiry. (Formerly numbered 203A-203B-C203C.):

203A. Problems of Scientific Inquiry and Normative Discourse. Mr. Nixon

203B. Major Conceptual Frameworks and Approaches to Political Science. Prerequisite: course 203A or equivalent.

204A. Quantitative Applications. An introduction to the quantitative analysis of political data. Problems of measurement, the logic of analysis and hypothesis testing, basic statistical techniques, and the use of the computer and standard data analysis programs. Mr. Petrocik

204B. Statistical Analysis. Prerequisite: course 204A. Statistical techniques and their applications to political science data. Ms. Geddes

204C. Problems in Statistical Analysis of Political Data. Lecture, three hours. Prerequisites: courses 204A, 204B. A practicum in which students examine particular techniques and their applications to contemporary research issues in political science.

210A-210B. An Introduction to Political Theory. Lecture, three hours:

210A. Classical and Medieval Formulations. An exploration of major texts and issues in political theory from Plato through Aquinas.

210B. The Early Modern Period. An exploration of major texts and issues in political theory from Machiavelli through the Enlightenment.

211. Political Theory. An analysis of the central problems of political inquiry and their relation to political philosophy.

212A-212B. International Relations Theory. (Formerly numbered 212.) Discussion, three hours. Approaches to and central problems of international relations theory:

212A. Major Theorists and Approaches.

212B. A Survey of the Major Theories. Mr. Stein

214A-214B. Survey Courses in American Politics. Students taking M.A. or Ph.D. examinations in the politics field will ordinarily have completed these courses before the examination sequence:

214A. Political Parties and the Electoral Process. Mr. Marvick, Mr. Petrocik

214B. American Political Institutions. Mr. Orren, Mr. Snowiss

215A-215B. Comparative Politics. Course 215A or consent of instructor is prerequisite to 215B. Approaches to the study of comparative politics and problems of comparative political analysis. Mr. Cattell, Mr. Lofchie, Mr. Rogowski, Mr. Sisson

C216. Public Law. A systematic analysis of the scope and nature of public law, with particular attention to its materials and methods as illustrated in concepts and doctrines drawn from various of its subject fields. May be concurrently scheduled with course C197E. Mr. Gerstein, Mr. Hobbs

C218A. Public Administration and Democratic Government. An analysis of the nature and scope of public administration and its role in modern political systems. May be concurrently scheduled with course C197F.

C218B. Approaches to Organizational Analysis. Analysis of several of the major conceptual alternatives for the 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 a guide to understanding organizational analysis. May be concurrently scheduled with course C197F. Mr. Ries

C218C. Public Administration and Public Policy. Discussion, three hours. A systematic analysis of the 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. Mr. D. Wilson

C221. Selected Texts in Political Theory. A critical examination of major texts in political theory, with particular attention to their philosophic system, their relations to the contemporary political and intellectual currents, and the importance of the system for present-day political analysis. May be concurrently scheduled with course C197A.

C222. Selected Topics in Political Theory. A critical examination of a major problem in political theory. May be concurrently scheduled with course C197A.

224A-224K. Studies in Politics:

224A. Politics and Economy. An analysis of the theoretical and practical relationships between economic organization and governmental institutions. The development and political implications of the market system, banking and finance, corporate enterprise, and organized labor. Ms. Orren

C224B. Political Recruitment. A critical evaluation of the literature concerned with the backgrounds of public figures and with the screening and sponsoring mechanisms affecting their careers and political perspectives. May be concurrently scheduled with course C197C. Mr. Marvick

C224C. Politics and Society. The application of selected classical and contemporary sociological theories to politics. May be concurrently scheduled with course C197C. Ms. Orren

224D. Group Theories of Politics. Critical appraisal of "group theory" approaches to the study of political decision making, with special attention to empirical research problems and findings. Ms. Orren

C224E. Legislative Behavior. The analysis of the major approaches to the study of representative institutions, with special emphasis on the assumptions, concepts, methods, and theoretical implications associated with each approach. May be concurrently scheduled with course C197C. Mr. Marvick, Mr. Snowiss

C224F. Executive Politics and the Presidency. An analysis of executive organization and leadership, with emphasis on the American Presidency. Special attention to theories of organization and personality and the relationship between the executive and other institutions and groups. May be concurrently scheduled with course C197C. Ms. Orren, Mr. Snowiss

M224G. Political Psychology. (Same as Psychology M228.) Discussion, three hours. Prerequisite: course 214A or Psychology 220A. Examination of political behavior, political socialization, personality and politics, racial conflict, and the analysis of public opinion on these issues. Mr. Sears

C224H. Mass Attitudes and Behavior. Prerequisite: course 141 or 214A or consent of instructor. An analysis of the development and change of political attitudes in mass publics and their relationship to voting, protest, and violence. May be concurrently scheduled with course C197B. Mr. Petrocik

C224I. Political Parties. A critical examination of the literature on party systems and organization. Special attention to political functions, electoral campaigns, and party cadres. May be concurrently scheduled with course C197C. Mr. Marvick, Mr. Petrocik

228A. Personnel and Human Relations. An analysis of the policies, processes, organizations, and interrelationships involved in manning the public services.

C228B. Public Planning, Programming, and Budgeting. Public budgeting processes within a political and organizational framework. Special emphasis on the federal program/budgeting system and the interplay between contemporary bureaucratic and decision theory of rational allocation of resources. May be concurrently scheduled with course C197F. Mr. Ries

228C. Political and Administrative Aspects of Planning. A study of the political constraints on and support for effective planning. Topics include the relationships between planning performance on the one hand, and forms of government, distribution of power, political culture, law, and social structure on the other. Mr. Fried

C228D. The Federal Bureaucracy. Seminar, three hours; discussion, one hour. An examination of the formulation and implementation of policy at the federal level. The consequences of administrative performance for American political and social life. May be concurrently scheduled with course C197F.

C228E. State Administrative Systems. An analysis of state administrative systems, their local subsystems, and their outputs. May be concurrently scheduled with course C197F. Mr. Fried

CM229. Urban Government. (Same as Architecture and Urban Planning M205C.) An analysis of the policies, processes, interrelations, and organization of governments in heavily populated areas. May be concurrently scheduled with course C197F.

C230. Comparative Development Administration. Seminar, three hours; discussion, one hour. An analysis of the administration of development programs and the development of administrative institutions, with special attention to ecology. Comparisons made both between countries and within countries. May be concurrently scheduled with course C197F.

C231A-C231D. Studies in International Relations:

C231A. Contemporary Problems in United States Foreign Policy. An intensive analysis of the policy formulation process and the substance of selected contemporary problems in foreign policy. Political and institutional factors affecting foreign policies; the analysis of policy options. May be concurrently scheduled with course C197B. Mr. Spiegel

C231B. Politics and Strategies of Modern War. Seminar, three hours; discussion, one hour. 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 a prerequisite). May be concurrently scheduled with course C197B. Mr. Kolkowicz

C231C. The Foreign Policy Process. (Formerly numbered 231C.) Discussion, three hours. Prerequisites: courses 120, and C201 or 212A or 212B, or consent of instructor. Political science and policy science approaches to the national foreign policy process, with primary focus on the formulation and implementation of American foreign policy. May be concurrently scheduled with course C197B. Mr. Zoppo

C231D. International Relations Theory. An introduction to contemporary problems in international relations theory. May be concurrently scheduled with course C197B. Mr. Stein, Mr. Wilkinson

232A-232B. International Political Economy. (Formerly numbered 232.) Discussion, three hours:

232A. International Trade and Advanced Industrialized Nations. An intensive examination of various theoretical approaches to international political economy, particularly as they relate to international trade and the study of advanced industrialized nations.
Mr. Lake

232B. International Capital and International Relations. The interaction of international lending and investment and the domestic political economics of both industrialized and industrializing societies.
Mr. Frieden

233A-233B-233C. Political Economy Workshop. Discussion, two hours. Open only to graduate students who have successfully completed the major field examinations. Workshop for those students writing or preparing to write dissertations. Reading and discussion of research and progress presented by UCLA faculty, visiting scholars, and advanced graduate students. A research paper of publishable length and quality required. Mr. Frieden, Mr. Lake

235. Selected Topics in Comparative Politics. Lecture, three hours. A critical examination of a major problem in comparative politics.

236A-236B. The Foundations of Representative Government. An analysis of the factors affecting the development and functions of representative institutions in the United States, Europe, and selected political systems of Africa, Asia, and Latin America. Politics or comparative politics field credit:

236A. An introduction to the literature on the development of elective institutions and their performance. An interdisciplinary approach, emphasizing historical as well as contemporary cases and modes of analysis.

236B. Prerequisite: course 236A or consent of instructor. A research seminar devoted to the analysis of particular problems and countries.
Mr. Sisson, Mr. Snowiss

C238A-C238D. Studies in Public Law:

C238A. Evolution of Anglo-American Law Books. Surviving early records. Case reporting, from the year books to the modern reports. Legal treatises from Glanvill to today. Statutes and how to find them. The language of the law. The entire English-speaking world, with emphasis on American materials. May be concurrently scheduled with course C197E.
Mr. Gerstein

C238B. Making of the Constitution. An examination of the development of constitutional law during selected periods of American history, such as founding, the Marshall and Taney eras, and the New Deal. Emphasis on both judicial and nonjudicial materials. May be concurrently scheduled with course C197E.
Mr. Hobbs

C238C. The Bill of Rights and the States. An examination of the problems surrounding the application to the states of Amendments 1 through 9. May be concurrently scheduled with course C197E.
Mr. Hobbs

C238D. Current Problems in Public Law. A discussion of selected contemporary problems in jurisprudence, the judicial process, judicial behavior, and legal controls on social conduct. May be concurrently scheduled with course C197E. Mr. Gerstein

M241. Topics in Applied Game Theory. (Same as Economics M205.) Lecture, three hours. Prerequisites: calculus or introductory probability, and graduate standing in economics or consent of instructor. Survey and application of the major solution concepts to models of bargaining, oligopoly, cost allocation, voting power, etc. Course paper consists of a substantial game-theoretic model on a topic in the student's particular field of interest. Mr. Shapley

M242A-M242B. Game Theory. (Same as Economics M242A-M242B.) Lecture, three hours. Prerequisites: Economics 245A or suitable mathematics courses. Elements of the theory of cooperative and noncooperative games, with applications to economic models. Strategic and coalitional games, minimax, Nash-Cournot equilibrium, bargaining theory, the core, value, and other solution concepts; applications to oligopoly, general exchange and production economies, allocation of joint costs. Mr. Shapley

M247. Multivariate Analysis with Latent Variables. (Same as Psychology M257.) Prerequisite: consent of instructor. Introduction to models and methods for the 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 the analysis of moment structures. Measurement models such as confirmatory, higher order, and structured-means factory analytic models. Structural equation models, including path and simultaneous equation models. Parameter estimation, hypthesis testing, and other statistical issues. Computer implementation. Applications. Mr. Bentler

M249. Special Topics in Econometrics. (Same as Economics M249.) Prerequisites: Economics 247, 248. A seminar on one of several special topics such as Bayesian inference, time-series methods, nonlinear estimation, or qualitative variables, depending on the particular interests of the instructor.
Mr. Leamer

Prerequisite for graduate seminars (C250A through C271) is advance consent of instructor.

C250A-C250L. Seminars in Regional and Area Political Studies:

C250A. Latin American Studies. Seminar, three hours; discussion, one hour. May be concurrently scheduled with course C197D.
Ms. Geddes, Mr. Gonzalez

C250B. Russian and Slavic Studies. May be concurrently scheduled with course C197C.
Mr. Cattell, Mr. Kolkowicz, Mr. Korbonski

C250C. Chinese and East Asian Studies. May be concurrently scheduled with course C197D.
Mr. Baum

C250D. Japanese and Western Pacific Studies. May be concurrently scheduled with course C197D.
Mr. Baerwald

C250E. African Studies. May be concurrently scheduled with course C197D. Mr. Lofchie, Mr. Sklar

C250F. Middle Eastern Studies. May be concurrently scheduled with course C197D. Mr. Binder

250G. Commonwealth Studies.

C250H. Western European Studies. Seminar, three hours; discussion, one hour. May be concurrently scheduled with course C197D. Mr. Rogowski

C250J. Southeast Asian Studies. May be concurrently scheduled with course C197D.

250K. North African Studies.

C250L. South Asian Studies. May be concurrently scheduled with course C197D. Mr. Sisson

C252. Seminar in Public Law. May be concurrently scheduled with course C197E.

C253. Seminar in International Relations. May be concurrently scheduled with course C197B.

C254. Seminar in Public Administration. May be concurrently scheduled with course C197F.

257. Seminar in Political Theory. (Formerly numbered 257A-257B.) Discussion, three hours.
Mr. Ashcraft, Mr. Binder

259. Seminar in Political and Electoral Problems. Prerequisites: two graduate courses in politics.

C262. Seminar in Municipal Government. May be concurrently scheduled with course C197F.

C271. Seminar in Political Change. An interdisciplinary seminar directed toward the analysis of political change. May be concurrently scheduled with course C197D. Mr. Binder

280A-280B. Advanced Practicum in Administrative Research. Prerequisites: at least five courses (20 units) at the graduate and upper division levels in political science, consent of instructor. An advanced laboratory/seminar in applied research on public agency operational and service delivery problems. An integrated case-study approach to task-force studies dealing with such problems as legislative and policy issues in mandated and nonmandated public functions; program and management organization; budget and finance performance measures; information systems; evaluation of outcomes; political impact analysis; and related problems in administrative decision making.

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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. A 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 the first quarter of their assistantships. May be taken only in a quarter 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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. S/U grading.

590A. Directed Reading for Ph.D. Dissertation Proposal. Required of all Ph.D. students. Must be taken under the supervision of the research adviser prior to the quarter in which the oral examination is taken. Research for the proposed dissertation topic and submission of a bibliographic essay on that topic. May be repeated with consent of research adviser and graduate adviser.

590B. Directed Research for Ph.D. Dissertation Proposal. Prerequisite: course 590A. Required of all Ph.D. students. Must be taken under the supervision of the research adviser prior to or during the quarter in which the oral examination is taken. Development and writing of the research design for the Ph.D. dissertation. May be repeated with consent of research adviser and graduate adviser.

596. Directed Individual Study or Research (2 to 4 units). May be applied only three times toward the minimum course requirement in the first two years. May be repeated.

597. Preparation for Ph.D. Qualifying Examinations (2 to 12 units). May be repeated. S/U grading.

598. Research for and Preparation of M.A. Thesis (2 to 12 units). Course is rarely taken because students normally receive the M.A. degree under the comprehensive examination plan. 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, (213) 825-2961

Professors

Howard S. Adelman, Ph.D.
Arthur P. Arnold, Ph.D.
Bruce L. Baker, Ph.D.
Jackson Beatty, Ph.D.
Peter M. Bentler, Ph.D.
Elizabeth L. Bjork, Ph.D., *Vice Chair, Undergraduate Affairs*
Robert A. Bjork, Ph.D.
Marilynn B. Brewer, Ph.D.
Wiliam E. Broen, Jr., Ph.D., *Vice Chair, Graduate Affairs*
Larry L. Butcher, Ph.D.
Edward C. Carterette, Ph.D.
Barry E. Collins, Ph.D.
Andrew L. Comrey, Ph.D.
Gaylord D. Ellison, Ph.D.
Norma J. Feshbach, Ph.D.
Seymour Feshbach, Ph.D.
Morton P. Friedman, Ph.D.
Rosslyn Gaines, Ph.D., *in Residence*
John Garcia, Ph.D.
Harold B. Gerard, Ph.D.
Michael J.Goldstein, Ph.D.
Patricia M. Greenfield, Ph.D.
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.
Wendell E. Jeffrey, Ph.D.
Harry J. Jerison, Ph.D., *in Residence*
Harold H. Kelley, Ph.D.
Franklin B. Krasne, Ph.D.
John C. Liebeskind, Ph.D.
O. Ivar Lovaas, Ph.D., Litt.D.
John H. Lyman, Ph.D.
Donald G. MacKay, Ph.D.
Irving Maltzman, Ph.D.
Albert Mehrabian, Ph.D.
Charles Y. Nakamura, Ph.D.
Donald Novin, Ph.D.
Amado M. Padilla, Ph.D.
Allen Parducci, Ph.D.
L. Anne Peplau, Ph.D.
Bertram H. Raven, Ph.D., *Chair*
David O. Sears, Ph.D.
David Shapiro, Ph.D.
Edwin S. Shneidman, Ph.D., *in Residence*
Gerald H. Shure, Ph.D.
Stanley Sue, Ph.D.
Shelley E. Taylor, Ph.D.
James P. Thomas, Ph.D.
Bernard Weiner, Ph.D.
J. Arthur Woodward, Ph.D.
Eran Zaidel, Ph.D.

Emeritus Professors

Richard P. Barthol, Ph.D.
James C. Coleman, Ph.D.
Joseph A. Gengerelli, Ph.D.
Milton E. Hahn, Ph.D.
F. Nowell Jones, Ph.D.
George F. J. Lehner, Ph.D.
Donald B. Lindsley, Ph.D., Sc.D.
Jessie L. Rhulman, Ed.D.
Eliot H. Rodnick, Ph.D.

Associate Professors

Paul R. Abramson, Ph.D.
Andrew Christensen, Ph.D.
Patrice L. French, Ph.D.
Ralph E. Geiselman, Ph.D.
Gerald M. Goodman, Ph.D.
George E. Mount, Ph.D.
Hector F. Myers, Ph.D.
Thomas D. Wickens, Ph.D.

Assistant Professors

Duane Buhrmester, Ph.D.
Felipe Castro, Ph.D.
Patricia Cheng, Ph.D.
Christine A. Dunkel-Schetter, Ph.D.
Halford H. Fairchild, Ph.D.
Carlos V. Grijalva, Ph.D.
Stephen P. Hinshaw, Ph.D.
Daniel B. Kaye, Ph.D.
Vickie M. Mays, Ph.D.
Thomas Minor, Ph.D.
Marie A. Morell, Ph.D.
D. Dean Richards, Ph.D.

Adjunct Professors

Joseph Bogen, Ph.D.
Marion Jacobs, Ph.D.
Claire Kopp, Ph.D.
James G. Miller, Ph.D.

Adjunct Associate Professors

M. Douglas Anglin, Ph.D.
Jacqueline D. Goodchilds, Ph.D.
Morris K. Holland, Ph.D.
Dennis McGinty, Ph.D.
Jill Waterman, Ph.D.

Adjunct Lecturers

Darrell C. Dearmore, M.A.
Kenneth R. Pfeiffer, 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; several specializations are also 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 two lead to a Bachelor of Arts degree; the third culminates 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.

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 Psychology Undergraduate Office, 1531 Franz Hall, early in your career.

Preparation for the Major

You are identified as a pre-psychology major until the preparation for the major requirements have been satisfied. The following required courses must be completed 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 135 total units: Anthropology 11 or 1 or 2; Biology 2 or 5; Chemistry 2 (if you have completed one year of high

school chemistry with a C or better, this requirement will be waived) or 11A; Mathematics 2 or two quarters of calculus; Physics 10 or 3A or 6A or 8A; one course from Philosophy 1, 3, 4, 6, 7, 8, 9, 10, 21, 22; Psychology 10, 42; Psychology 41 (recommended) or Mathematics 50 or Economics 40. Psychology 41 and 42 should be taken early in your career.

These are minimum requirements in preparing for the major. More advanced courses in science and statistics would provide stronger preparation.

The Major

After completing the preparation courses, you must petition to enter the major at the Psychology Undergraduate Office. You must have a 2.0 grade-point average in your upper division major courses, and each must be taken for a letter grade.

Required: (1) Psychology 110, 115, 120, 125, 135; (2) one course from 111, 116, 121, 126, 136A, C136B, 143, M155, 170B, 174, 176, M181A, M181B, 186; (3) an additional four upper division elective courses (16 units) in psychology.

Developmental Disabilities Immersion Program Specialization

This specialization combines a general education in the liberal arts and sciences with research and fieldwork experience in the area of developmental disabilities. Students participate in courses and research under the Mental Retardation and Child Psychology Program at Lanterman State Hospital and Developmental Center. A complete description of the Developmental Disabilities Immersion Program (DDIP) is given below.

Admission is limited. In addition to the courses listed above under "Preparation for the Major," you must take Communication Studies 10 and Sociology 1. You also may take Psychology M182A and M182B instead of course 42. All preparation courses must be completed for a letter grade (a C – or better in each course and a 2.5 overall grade-point average).

After completing the preparation courses, you must petition to enter the major and specialization at the Psychology Undergraduate Office. You must have a 2.0 grade-point average in your upper division major courses, and each must be taken for a letter grade.

The following upper division courses are required: (1) Psychology 110, 115 or M183, 120 or M182C, 125, 127, 130, 135, M180A, M180B, M181A-M181B, 193 (two quarters required); (2) one laboratory course from 111, 116, 121, 126, 136A, C136B, 143, M155, 170B, 174, 176, M181A, M181B, 186; (3) four courses from M133B, 133E, 170A, M182A, M182B, M182D, M184.

Bachelor of Arts 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 Psychology Undergraduate Office, 1531 Franz Hall, early in your career.

Preparation for the Major

Admission to the major is limited. You are identified as a pre-cognitive science major until the preparation for the major requirements have been satisfied. The following required courses must be completed for a letter grade (a C or better in each course and a 2.5 overall grade-point average in the preparation courses): Anthropology 11 or 1 or 2; Biology 2 or 5; Chemistry 2 (if you have completed one year of high school chemistry with a C or better, this requirement will be waived) or 11A; Mathematics 31A, 31B, 61; Philosophy 7 or 9; Physics 10 or 3A or 6A or 8A; Program in Computing 10A, 10B, 60; Psychology 10, 42; Psychology 41 (recommended) or Mathematics 50 or Economics 40. Psychology 41 and 42 should be taken early in your career.

The Major

After completing the preparation courses, you must petition to enter the major at the Psychology Undergraduate Office. You must have a 2.0 grade-point average in your upper division major courses, and each must be taken for a letter grade.

Required: (1) Psychology 110, 115, 120, 121, 125 or 135, 185, 186, 188; (2) an additional three upper division elective courses (12 units) from Psychology 102 through 124B, M153, Computer Science 111 through 199, Linguistics 100 through 199, Mathematics 104 through 199, Philosophy 126A through 136.

Quantitative Methods Specialization

This specialization is intended to give students more extensive preparation in statistics. The following additional courses are required: Mathematics 32A, 33A, and either 150A-150B-150C or 152A-152B. 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 psychobiology 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 Psychology Undergraduate Office, 1531 Franz Hall, early in your career.

Preparation for the Major

You are identified as a pre-psychobiology major until the preparation for the major requirements have been satisified. The following required courses must be completed 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, 7, 8; Chemistry 11A, 11B/11BL, 11C/11CL, 21, 23, 25; Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A; Physics 6A, 6B, and 6C, or 3A, 3B, and 3C, or 8A/8AL, 8B/8BL, and 8C/8CL; Psychology 10, 42; Psychology 41 (recommended) or Mathematics 50 or Economics 40. Psychology 41 and 42 should be taken early in your career.

The Major

After completing the preparation courses, you must petition to enter the major at the Psychology Undergraduate Office. You must have a 2.0 grade-point average in your upper division major courses, and each must be taken for a letter grade.

Required: (1) Biology 129 or Psychology 118A or Anthropology 128A and 128B, and Psychology 110, 115, 116, 120; (2) one course from Psychology 125, 127, 130, 135; (3) four courses from the following list: Psychology 117 (only one section may be used); Biology 107, 112, 113, 114 (no more than one from this group); Psychology 118B, 118C, 118D, 118E, M118F, M119, 128, 143, M153, 190 (one course only), 199 or Biology 199 (one course only), Biology 102, 105, 110, 111, 120, 122, 124, 131, 135, 138, 139, 143, 144, 145A, 145B, 145C, 153, CM156, 158, 164, 166, 167, 168, 169, 171, 172A, 172B, 173, 177, 179, Kinesiology 140, Chemistry 152.

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, emphasize readings in the original literature, student oral and written reports, and field or research experience. All such courses offer credit toward departmental honors and College Honors.

Departmental Honors

Psychology majors intending to continue study at the graduate level are encouraged to apply for departmental honors. In addition to the regular requirements for your major, you must take at least two honors-designated courses. Different courses are designated for honors each year, and you may choose among them. You also must engage in advanced research and study leading to a formal bachelor's thesis under the tutorial guidance of a faculty member while enrolled in Psychology 190A-190B-190C. If your thesis is judged acceptable by the honors committee, you are awarded the degree with honors or highest honors. Consult

the Psychology Undergraduate Office early in your educational planning for further information and application forms.

Developmental Disabilities Immersion Program

The Developmental Disabilities Immersion Program is cosponsored by the Department of Psychology and the Department of Psychiatry and Biobehavioral Sciences and by the Office of Instructional Development — Field Studies Development. Each year a group of 28 students is selected for the program which runs during the Winter/Spring Quarters. Students participate in courses and research at Lanterman State Hospital and Developmental Center, a facility for mentally retarded citizens in Pomona, and do related fieldwork while living at the site.

During each quarter of the program up to 20 units of coursework related to developmental disabilities are offered. Most of the courses are in the Psychology/Psychiatry M180 through M184 series, but courses from other departments (such as Biology) may supplement these offerings. Many of the courses fulfill psychology undergraduate major requirements (consult the Psychology Undergraduate Office for details). Student individualized research projects are also part of the immersion experience.

To supplement their academic activities, students spend 10 hours a week working with the developmentally disabled by assisting teachers in the special education classes in nearby public schools or by helping supervise at sheltered workshops. For more information, contact the Psychology Undergraduate Office or Field Studies Development (70 Powell Library).

Preparation for Graduate Study

Although requirements for admission to graduate programs in psychology in most universities are satisfied by the above major requirements, both admission to graduate work and progress toward the degree may be impeded in certain areas of psychology if additional preparation is not obtained at the undergraduate level. For this reason, if you plan to do graduate work in psychology, you are advised to take additional work in methodology and statistics and to take advantage of the many advanced undergraduate courses in specific fields offered both by the Psychology Department and related departments. Consult the Psychology Undergraduate Office 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

Admission to the Ph.D. program normally requires an undergraduate degree in psychology. However, students from other areas (particularly the mathematical, physical, biological, and social sciences) may be admitted. Admission is for Fall Quarter only and on a full-time basis only. Applicants must mail the following documents directly to the Psychology Department, 3453 Franz Hall, UCLA, Los Angeles, CA 90024, by December 30 to be considered for admission the following Fall Quarter:

(1) The departmental Application for Admission to the Doctoral Program, available in 3453 Franz Hall.

(2) Three letters of recommendation.

(3) One official transcript from each college attended.

(4) Scores from the Graduate Record Examination (GRE) Aptitude Test and the Advanced Test in Psychology (taken within the last three years).

(5) An official score report of the Miller Analogies Test. International students or U.S. students currently overseas are exempt from this requirement.

(6) 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.

Incoming students are expected to have had courses equivalent to the following: (1) Psychology 41; (2) two courses from Psychology 110, 115, 120; and (3) two courses from the following alternatives: (a) Psychology 125 or 127; (b) 130; and (c) 135. If you have not had training in these areas, you have to take appropriate coursework or examinations. In addition, it is recommended that you have adequate preparation in mathematics, physics, chemistry, and the biological and social sciences, at least to the extent of a quarter's work at the college level in each. Continuation in the Ph.D. program is contingent on successfully clearing undergraduate deficiencies by the end of your fourth quarter in residence.

Major Fields or Subdisciplines

You may major in clinical, cognitive, developmental, learning and behavior, measurement and psychometrics, personality, physiological, or social psychology. With the exception of clinical, you may minor in any of the areas listed above, as well as in health psychology and industrial. You may petition for individualized minors or a minor in experimental psychopathology. 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 quarter is needed to complete the course).

Nine graduate courses (36 units), including Psychology 250A, 250B, 251A-251B (research project must be complete), and 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 238, 247A, 249, 252, 253, 254, 255, 256, M257, 258, 259, 287, 299.

During the third year, you must enroll in a minimum of three graduate-level courses, plus one quarter of course 596. At least one quarter 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: *clinical:* Psychology 270A-270B-270C, 271A-271B-271C, two courses in the 272 series, at least two other advanced clinical courses outside the 272 series, and the area's two-quarter assessment course (277); *cognitive:* courses 260A-260B, plus two courses from 261, 262, 263, 266; *developmental:* courses 240A-240B, one course from 220A, 235, 286, one course from 200B, 205A, 261, 262, 263, 264, 266, three courses from 242A through 242F, 243A, 243B, 244, one of the quantitative courses listed under second-year requirements, and 299; *learning and behavior:* courses 200A, 200B, plus two courses from 204A, 204B, 204C, 208, 210, 281, 290, 293, and Psychiatry 271; *measurement and psychometrics:* five courses from 249, 252, 253, 254, 255, 256, M257, 258; *personality:* courses 232, 235, M239, 278; *physiological:* courses 205A-205B, three quarters of course 212, two approved physiological seminars, and Anatomy M206A, M206B; *social:*

courses 220A-220B, C223A or 224, three social seminars taught by three different faculty members, and course 226 each quarter for the first three years of the program.

Minor Area Course Requirements: You must select two minor areas. These minors are normally satisfied by taking three to four specified courses. See departmental bulletins for further details.

Qualifying Examinations

The qualifying examination consists of three separate portions. The first is an examination administered by the major area, which examines in breadth your knowledge of the major field. The second part is an individualized examination which examines in depth your knowledge of your area of specialization within the major field. The third part is the University Oral Qualifying Examination. All Ph.D. requirements listed above must be completed before this portion 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 quarters of approved supervised preinternship practicum (Psychology 401 — 12 to 15 hours per week) are required and are usually taken in the second and third years.

(2) The equivalent of one calendar year of supervised internship (Psychology 451) in an acceptable setting approved by the faculty, taken either full-time in one year or half-time in two years in one or two settings, is required. This is usually taken in the fourth or fifth year. 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, family, couples, 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.

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 on an individual basis or in a group setting. The program is located in Franz Hall and provides child care for 13 infants ranging in age from four months to two and one-half years.

Spanish Speaking Mental Health Research Center

The Spanish Speaking Mental Health Research Center (SSMHRC) promotes basic and applied research on the mental health needs of the Hispanic population. SSMHRC provides an interdisciplinary research environment for scholars, students, and professionals interested in Hispanic mental health. Previous research projects have included studies on acculturation and ethnicity, bilingualism, community studies, health and behavior, personality assessment, and psychosocial issues. In January 1984 the National Institute of Mental Health's Center for the Studies of Minority Group Mental Health awarded the SSMHRC a five-year grant to study the effects of stress on Mexican Americans.

Lower Division Courses

10. Introductory Psychology. A general introduction including topics in cognitive, experimental, personality, developmental, social, and clinical psychology; six hours of psychological research.

15. Introductory Psychobiology. Designed for nonmajors. A survey of genetic, evolutionary, physiological, pharmacological, and experiential factors affecting behavior. Using the comparative approach where appropriate, emphasis on the relevance of biological mechanisms to an understanding of man and his interaction with his 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. 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 lab topics include experimental and nonexperimental research methods, statistical design and analysis as applied to a broad range of basic and applied research issues.

95. Lower Division Seminars. Prerequisite: course 10. Limited to freshmen and sophomores. Intensive analysis in seminar situations of selected topics of current psychological interest. See the *Schedule of Classes* for current topics and instructors. May be repeated for credit.

Upper Division Courses

102. History and Systems of Psychology. Prerequisite: senior standing or consent of instructor. A historical and systematic analysis of psychological thought and points of view.

M107. Asian American Personality and Mental Health. (Formerly numbered M195.) (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. Mr. Sue

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; the relation of learning and motivation. Intended to provide an 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 the study of learning, especially with animals.

112A. Human Learning. Prerequisite: course 110. Acquisition, retention, and transfer of verbal and nonverbal human learning.

112B. Theories of Learning. Prerequisite: course 110. Critical discussion of the major theories in the light of experimental evidence.

112C. Thinking. Prerequisite: course 110. An analysis of experimental studies of problem solving, reasoning, insight, concept formation, and related topics.

112E. Current Topics in Learning. Prerequisite: course 110. A study of related issues in the psychology of learning. Topics vary with the interests of the instructor and class. May be repeated for credit with consent of instructor.

114. Alcoholism. Prerequisite: upper division standing. Theories and research on the impact, causes, characteristics, and treatment of alcoholism considered from a biobehavioral point of view.

115. Physiological Psychology. Lecture, three hours; discussion, one hour. Prerequisites for majors: course 41, Biology 2, junior standing; for nonmajors: Biology 5, 7, consent of instructor. Integrative activities, receptor and effector processes in relation to neuromuscular structure and function. Facts, problems, and methods.

116. Physiological Psychology Laboratory. Lecture, one hour; laboratory, three hours. Prerequisites: courses 41, 42, 115 (may be taken concurrently), psychology major standing. Laboratory experience with various topics in physiological psychology.

117. Seminar in Psychobiology. Prerequisite: course 115. Advanced topics in brain and behavior. Only one section of course 117 may be applied as an elective toward the psychobiology major. May be repeated for credit with consent of instructor.

118A. Comparative Psychobiology. Prerequisite: course 115. A survey of the determinants of species-specific behavior, including genetic influences and learning.

118B. Behavioral Pharmacology. Prerequisite: course 115. Experimental and theoretical treatment of drug-behavior relationships. Particular emphasis on behavior and pharmacological mechanisms of drug action and drug interaction with neuronal function; drugs as tools to investigate various behavior processes such as mood, aggression, learning, and motivation, experimental studies of addiction.

118C. Psychophysiology of Motivation. Prerequisite: course 115. The basic psychophysiology, including brain and endocrine mechanism, involved in the control of motivation. Discussion of homeostatic drives such as hunger and thirst and nonhomeostatic drives such as reproductive behavior.

118D. Experimental Neuropsychology. Prerequisite: course 115. The experimental analysis of higher brain functions. Special emphasis on attention, memory, perception, and language.

118E. Current Topics in Physiological Psychology. Lecture, three hours. Prerequisite: course 115 or consent of instructor. Advanced topics of current interest in physiological psychology presented in depth. Emphasis on bringing students to a point where they can appreciate and evaluate current research papers on the topics covered. May be repeated for credit with consent of instructor.

M118F. Ethology: Physiology of Behavior and Learning in Animals. (Same as Psychiatry M190.) Lecture, four hours; laboratory, one hour. Basic course for undergraduate students which integrates a systematic overview of common forms of behavioral plasticity and standard training procedures in laboratory animals (in behavioral, neurophysiological, and pharmacological studies) with a broad biological, evolutionary perspective. (W)

118G. Neuron Circuitry and Behavior. Prerequisite: course 115, Biology 171, or consent of instructor. A 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 the operation of these processes in well-defined neural circuits.

M119. Evolution of Intelligence. (Formerly numbered 119.) (Same as Psychiatry M119.) Lecture, two hours; discussion, two hours. Prerequisites: course 15 or 115, an introductory statistics course, junior or senior standing, consent of instructor. Intelligence treated as neural information-processing capacity; its evolution in vertebrates correlated with the evolution of enlarged brains. Quantitative approaches in evolutionary biology and the neurosciences.

120. Human Information Processing. Lecture, three hours; discussion, one hour. Prerequisites: courses 10, 41, junior standing. A survey of how people acquire and retain nonverbal and verbal information. Perception, attention, memory, and representation of knowledge.

121. Laboratory in Human Information Processing. Prerequisites: courses 10, 41, 42, 120 (may be taken concurrently). Laboratory experience with methods and phenomena drawn from research on human perception, memory, and cognition.

122. Language and Communication. Prerequisite: course 41 or consent of instructor. A survey of language behavior, communication, and speech perception, including acquisition, sequential structure, and semantic aspects. Recent developments in linguistics, theory of information transfer, analysis and synthesis of speech. Social communication. Aphasia and speech pathology. Animal communication.

123. Psycholinguistics. A survey of current theory and research in psycholinguistics: the description of language in generative grammars; the acquisition of language by children; experiments on speech recognition, production, and comprehension; errors in speech perception and production; speech physiology and pathology.

124A. Current Topics in Human Information Processing. Lecture, two hours; discussion, one hour. Prerequisites: courses 10, 41, 120. Advanced consideration of special topics in human information processing. May be repeated for credit with consent of instructor.

124B. Current Topics in Psycholinguistics. Prerequisite: course 123. Advanced consideration of special topics in the psychology of language. May be repeated for credit with consent of instructor.

125. Personality. Lecture, three hours; discussion, one hour. Prerequisites: courses 10, 41, junior standing. A survey of the major topics in the field of personality, including personality theory, personality assessment, and the physiological, behavioral, and cultural role of perception, learning, and motivation in personality.

126. Personality Laboratory. Discussion, three hours; laboratory, three hours. Prerequisites: courses 41, 42, 125 (may be taken concurrently), psychology major standing. Laboratory experience with various topics in personality.

126H. Personality Laboratory: Emotions (Honors). Discussion, three hours; laboratory, three hours. Prerequisites: courses 10, 41, 42, psychology major standing. Presentations of the major approaches to emotion and experimentation of some hypotheses from the theories. Use of different (basic) statistical techniques and experimental methodologies.

127. Abnormal Psychology. Lecture, three hours. Prerequisite: course 10. Study of the 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; discussion, one hour. Prerequisite: course 10. An honors course parallel to course 127.

128. Behavioral Medicine. Lecture, two hours; discussion, one hour. Prerequisites: courses 10, 127, junior or senior standing. Psychophysiological (psychosomatic) disorders approached via a biopsychosocial model of disease, with emphasis on the interrelationships between physiology, personality/behavior, and social/environmental factors. Major focus on behavioral assessment and treatment approaches (e.g., modifying Type A behavior, treatment of anorexia and enuresis).

129A. Personality Measurement. Prerequisite: course 125. The rationale, methods, and content of studies dealing with the 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. Personality Dynamics. Prerequisite: course 125. Detailed conceptual examination of one or two areas of personality in which the main and interactive effects of personality and situational variables have been investigated. Personality as related to the study of psychological processes, particularly motivation. Examination of current research literature.

129C. Personality and Cognition. Prerequisite: course 125. Theoretical and experimental analyses of cognitive processes such as imagery, attention, language, and memory and their implication for theories of personality.

129D. Special Topics in Personality. Prerequisite: course 125. Study of selected topics in the psychology of personality. Topics vary with the interests of instructor and class. May be repeated for credit with consent of instructor.

129E. Human Sexuality. Lecture, three hours. Prerequisite: senior psychology major standing. An overview of the psychology of human sexuality. Psychological research, assessment, and therapy described in a format which highlights their significance for understanding human sexual functioning. The psychological mechanisms underlying the expression of human sexuality.

130. Developmental Psychology. Lecture, three hours. Prerequisite: course 10. An elaboration of the developmental aspects of physical, mental, social, and emotional growth from birth to adolescence.

132. Learning Disabilities. (Formerly numbered 132A.) Lecture, three hours. Prerequisite: upper division standing. Exploration of different orientations to persons with learning problems, emphasizing assessment and intervention approaches and the psychological impact of such approaches. Topics include the interaction of learner and environment, the sociopolitical nature of the classroom, the psychological impact of schooling, grades, and evaluations, process vs. goal focus in learning.

133A. Adolescent Development. Lecture, three hours. Prerequisite: course 130. An examination of the cognitive, social, physical, and physiological development of the adolescent.

M133B. Exceptional Children. (Formerly numbered 133B.) (Same as Psychiatry M133.) Prerequisite: course 130. Study of the issues and research problems in the areas of mental retardation, giftedness, learning disorders, emotional disorders, and childhood psychosis.

133C. Psychological Development in the Adult Years. Prerequisite: course 130 or consent of instructor. Theory and research on changes in motivation, aptitudes, and abilities as related to genetics, age, sex, and sociocultural variables.

133D. Social and Personality Development. Lecture, two hours; discussion, one hour. Prerequisites: courses 10, 41, 130. An 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.

133E. Current Issues in Developmental Psychology. Prerequisites: course 130, upper division psychology standing. A critical examination of current issues in developmental psychology. Specific topics vary depending on the interests of the class and instructor. May be repeated with consent of instructor.

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. The interrelationships between the individual and his social environment. Social influences on motivation, perception, and behavior. The development and change of attitudes and opinions. Psychological analysis of small groups, social stratification, and mass phenomena.

136A. Social Psychology Laboratory. Lecture, two hours; laboratory, two hours. Prerequisites: courses 41, 42, 135 (may be taken concurrently), psychology major standing. Laboratory experience with such topics as small group behavior, attitude measurement, and interpersonal influence.

C136B. Survey Methods in Psychology. Lecture, two hours; laboratory, two hours. Prerequisites: courses 41, 42, psychology major standing. The nature of attitudes and opinions and their measurement by means of attitude scales and public opinion surveys. Class projects and fieldwork. Concurrently scheduled with course C223.

137A. Group Behavior. Lecture, three hours. Prerequisites: courses 10, 41, 135. Psychology of interdependence, group membership, leadership, and social influence.

137B. Attitude Formation and Change. Lecture, three hours. Prerequisites: courses 10, 41, 135. Effects of propaganda, personal influence, socialization, and social structure on private attitudes and public opinion.

137C. Interpersonal Relations. Lecture, three hours. Prerequisites: courses 10, 41, 135, consent of instructor. A study of the psychological facts, principles, problems, and theories concerned with interactions and relationships between persons. Focus on such phenomena as interpersonal attraction, exchange, aggression, conflict, control, power relations, and the initiation, development, and dissolution of relationships.

137D. Introduction to Health Psychology. Prerequisite: course 10. The areas of health, illness, treatment, and delivery of treatment that can be elucidated by an understanding of psychological concepts and research, the psychological perspective on these problems, and how the psychological perspective might be enlarged and extended in the medical area.

M137E. Work Behavior of Women and Men. (Same as Women's Studies M137E.) Prerequisites: course 10 or Women's Studies 100, junior or senior standing. Examination of work behavior of men and women. Topics include antecedents of career choice, job finding, leadership, performance evaluation, discrimination and evaluation bias, job satisfaction, and interdependence of work and family roles.

137F. Special Topics in Social Psychology. Prerequisite: course 135. Study of selected topics in social psychology. May be repeated for credit with consent of instructor.

M138. Political Psychology. (Same as Political Science M140.) Prerequisite: course 10. Examination of political behavior, political socialization, personality and politics, racial conflict, and the psychological analysis of public opinion on these issues.

139. Psychology of Social Issues. Prerequisite: course 10. An analysis of the contribution of current psychological theory and research to the understanding of selected historical, social, and political problems.

M142. Advanced Statistical Methods in Psychology. (Formerly numbered 142.) (Same as Psychiatry M142.) Lecture, two hours; discussion, two hours. Prerequisite: course 41. Chi square, special correlation methods, multiple regression, nonparametric methods, analysis of variance, reliability and validity.

143. Foundations of Psychological Investigation. Prerequisites: courses 41, 42, psychology major standing. Outline and examination of concepts associated with psychological investigation and the interpretation of results. Readings, discussions, and reports; individual and class projects.

144. Psychological Tests and Evaluation. Prerequisite: course 41. Further study of the principles of measurement, stressing basic concepts. Application to problems of test construction, administration, and interpretation.

147. Elements of Psychology of Sport. The application of psychological theories, principles, and techniques to recreation, games, and sport. Current theories of the role of the brain in learning and performance of skills and the utilization of Oriental philosophies and the martial arts in Western sport.

148. Industrial and Organizational Psychology. Lecture, three hours. Prerequisite: course 10. Introduction to the applications of psychology in industrial and other organizations.

150. Mathematical Models in Psychology. Prerequisites: Mathematics 3C or 31B, Computer Science 10C or 10F, or consent of instructor. Review of theoretical models and the 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. Prerequisites: Computer Science 10C or 10F, consent of instructor. Topics include hardware and software computer problems in the design, control, and analysis of experiments; programming problems arising in the evaluation of models of psychological processes of the various content areas such as learning, perception, social, personality, and clinical.

M153. Principles of Biotechnology. (Same as Materials Science and Engineering M107A.) Prerequisite: upper division standing. The principles of biological science developed in an engineering design context. Emphasis on how physiological, psychological, and sociological factors affect the integration of man into environmental, informational, and managerial systems through engineering design.

(F,W,Sp)

M155. A Laboratory for Naturalistic Observations: Developing Skills and Techniques. (Same as Anthropology M136Q and Psychiatry M112.) Prerequisite: consent of instructor. The 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 the social sciences. (W)

162. The Personological System of Henry A. Murray: An Undergraduate Seminar. Lecture, two hours; discussion, one hour. Prerequisite: consent of instructor. The study of lives and the personality theory of Henry A. Murray, touching on autobiographical writings and biographical materials; personality as a dynamic system of growth and change. Creative, proactive, normal, and supernormal aspects of personality; the roles of values in the study of personality, society, and culture.

M163. Death and Suicide: Psychological and Sociological Aspects. (Same as Sociology M158.) Lecture, three hours. Prerequisite: junior standing. The definition and taxonomy of death; the new permissiveness and taboos relating to death; the romanticization of death; the role of the individual in his own demise; the modes of death; development of ideas of death through the life span; ways in which ideas of death influence the conduct of lives; the impact of dying on the social structure surrounding the individual; preventive, interventive, and postventive practices in relation to death and suicide; partial death; megadeath; lethality; the psychological autopsy; the death of institutions and cultures. P/NP grading recommended (letter grading required if course is to be applied toward the psychology or sociology major).

M165. The Psychology of Gender. (Same as Women's Studies M165.) Lecture, two hours; discussion, one hour. 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 the impact of gender on social interaction.

168. Environmental Psychology. Prerequisites: courses 41, 125. A 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. Prerequisites: course 10, upper division standing. Applied behavior theory; a study of the application of principles derived from learning theory, especially modeling and reinforcement, to behavior problems of retarded and autistic children, adult psychotic disorders, reading disorders, etc. Lectures, discussions, and demonstrations.

170B. Fieldwork in Behavior Modification. Discussion, two hours; fieldwork, eight hours. Prerequisites: courses 41, 42, 170A, psychology major standing, consent of instructor. Advanced fieldwork in applied behavior theory, especially to problems of retarded and autistic children, adult psychotic disorders, etc. May be repeated once for credit.

170C. Practicum: Design and Implementation of Behavioral Interventions. Lecture, one hour; discussion, one hour; fieldwork, six hours. Prerequisites: courses 170A or 110, 170B (two quarters), upper division psychology or psychobiology major standing, consent of instructor. The design and evaluation of behavioral interventions with developmentally delayed 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; and clinical issues. May be repeated once for credit.

M172. The Afro-American Woman in the U.S. (Same as Afro-American Studies M172 and Women's Studies M172.) Prerequisite: upper division standing. The impact of the social, psychological, political, and economic forces which impact on the interpersonal relationships of Afro-American women as members of a large society and as members of their biological and ethnic group.

174. Interpersonal Process Analysis. Discussion, two hours; laboratory, three hours. Prerequisites: courses 41, 42, 127, psychology major standing. An introduction to the 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. The application of psychological principles to the understanding and solution of community problems. Topics include community development, community mental health problems, drugs, racism, and rehabilitation of prisoners.

176. Experimental Community Psychology. Lecture, three hours. Prerequisites: courses 42, 127, 175, psychology major standing, consent of instructor. Examination and experimental application of concepts drawn from interpersonal and community psychology for understanding the behavior of individuals in structured social systems (communities, schools, mental hospitals, prisons, etc.).

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. Prerequisite: upper division standing. Examination of current theories of human motivation, the experimental findings supporting the theories, and their applied value. Emphasis on motivation in the classroom, particularly the effects of success and failure on performance. Other topics include stress, conflict, frustration, and perceptions of control.

179. Health Promotion in Minority Populations. Lecture, three hours. Prerequisite: course 10 or consent of instructor. Designed for undergraduates interested in or considering a career in a health or mental health profession (medicine, clinical psychology, social work, nursing, public health, etc.) and for those who would deliver such health services to ethnic minority peoples.

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 the concepts, issues, and research techniques in the area of mental retardation. Biological, psychological, and community questions concerning the causes and treatment of developmental disabilities, as well as systems for the 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.

M182A. Advanced Statistical Methods in Mental Retardation. (Same as Psychiatry M182A.) Prerequisite: course 41. Limited to Immersion Program students. Introduction of statistical method and design in experimentation principles of statistical inference and appropriate testing methods. Introduction to the use of computers and various software packages.

M182B. Advanced Design and Statistics. (Same as Psychiatry M182B.) Prerequisite: course M182A. Continuation of course M182A.

M182C. Perception. (Same as Psychiatry M182C.) Limited to Immersion Program students. Human information processing, both physical and psychological, with special emphasis on pathologies in the mentally retarded.

M182D. Current Issues in Mental Retardation. (Same as Psychiatry M182D.) Limited to Immersion Program students. Advanced topics in mental retardation. May be repeated for credit with consent of instructor.

M183. Introduction to Neuroscience. (Same as Psychiatry M183.) Limited to Immersion Program students. Gross anatomy of the human brain and spinal cord.

M184. Human Genetics. (Same as Psychiatry M184.) Lecture, two hours; discussion, two hours. Limited to Immersion Program students. Application of genetic principles in human populations, with emphasis on cytogenetics, biochemical and population genetics, and family studies. Lectures and readings on the methodologies appropriate to answer current questions in the fields of medical and human genetics. Mr. Fluharty

185. Cognitive Science. Lecture, three hours. Prerequisites: courses 10, 41, 42, and 120, or consent of instructor. Survey of theories and methods in the study of cognition. Topics include perception, attention, mental imagery, representation, elaboration and reconstruction of information in memory: schemata and prototypes; cognitive skills, problem solving and reasoning; comprehension, construction, and transformation of natural language; neuropsychology and models of brain function; artificial intelligence, knowledge representation, programming, and thinking.

186. Cognitive Science Laboratory. Lecture, one hour; laboratory, three hours. Prerequisites: courses 10, 41, 42, 120, 185 (may be taken concurrently). Individual and group computer-based projects: information processing methods and analyses; experimental tests of cognitive theories and models; simulation of cognitive processes.

187. Legalistic Psychology. Discussion, two hours; seminar, one hour. Prerequisite: junior standing. A study of new topics on legal psychology, including suspect identification, witness reports, and police procedures. Outside speakers utilized in the presentation of these materials. Students participate in presentations and/or discussions.

187H. Legalistic Psychology (Honors). Discussion, two hours; seminar, one hour. Prerequisite: junior standing. An 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. The Psychology Undergraduate Office, 1531 Franz Hall, should be consulted for contracts and further information. P/NP grading.

189. Human Factors. Lecture, two hours; discussion, one hour. Prerequisites: courses 10, 110, sophomore standing. The principal objective of human factors psychology is the optimization of human-machine productivity and efficiency while ensuring human safety. Research from engineering, computer science, and psychology combined for the design of systems for human use. Contemporary applications include health care, safety systems, pollution control, transportation, and urban design.

190A-190B-190C. Honors Course. Lecture, three hours. Prerequisite: psychology honors program standing. Opportunity for the development and analysis of creative ideas through conceptual or experimental research and their implementation by experimental research. Information and applications may be obtained from the Psychology Undergraduate Office, 1531 Franz Hall. Only one 190 course may be applied toward the elective course requirement for the psychology major.

192. Practicum in the Teaching of Psychology. Prerequisites: upper division psychology major, department consent. Training and supervised practicum for advanced undergraduates in the teaching of psychology. Students serve as junior teaching assistants and assist in the preparation of materials and the development of innovative programs. The Psychology Undergraduate Office, 1531 Franz Hall, should be consulted for contracts and further information. Only 12 units from courses 192, 193, and 194 may be applied toward the undergraduate degree. May not be applied toward course requirements for any of the psychology majors. P/NP grading.

193. Fieldwork in Psychology. Seminar, two hours; fieldwork (approved community setting), six hours. Prerequisites: sophomore pre-psychology or psychology major standing, department consent. Fieldwork in applications of psychology. The Psychology Undergraduate Office, 1531 Franz Hall, should be consulted for contracts and further information. Only 12 units from courses 192, 193, and 194 may be applied toward the undergraduate degree. May not be applied toward course requirements for any of the psychology majors. P/NP grading.

194. Research in Psychology. Seminar, one hour; internship (approved research setting), seven hours. Prerequisites: sophomore pre-psychology or psychology major standing, department consent. Practical applications of psychology through research. The Psychology Undergraduate Office, 1531 Franz Hall, should be consulted for contracts and further information. Only 12 units from courses 192, 193, and 194 may be applied toward the undergraduate degree. May not be applied toward course requirements for any of the psychology majors. P/NP grading.

195. Current Issues in Psychology. Lecture, three hours. Prerequisite: junior or senior psychology major standing (some sections may require consent of instructor). A study of selected current topics of psychological interest. See *Schedule of Classes* for topics and instructors. May be repeated for credit with consent of instructor and may be applied as an elective toward the psychology major. May not be applied as an elective toward the psychobiology major.

199. Directed Individual Research and Study. Prerequisites: senior psychology major standing or junior psychology major standing with at least a 3.0 GPA in the major, consent of instructor and vice chair for Undergraduate Affairs (based on a written proposal outlining the course of study). Students should consult the Psychology Undergraduate Office, 1531 Franz Hall, for further information and approval forms. Only one four-unit 199 course in psychology may be taken per quarter and only one for a letter grade (additional 199 courses may be taken in the department). Only four units may be applied toward the elective course requirement for the psychology 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 the application of learning principles in the 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.

204A-204B. Seminar in Critical Problems in Learning. Each course may be taken independently and in any order. Critical problems drawn from the following:

204A. Psychophysiology of Attention and Learning. The study of research and theories concerned with the psychophysiology of attention and learning primarily in humans. Concepts and areas include the orientating reflex, dominant focus, classical conditioning, and their implications for the psychophysiology of psychopathology and psychotherapy. Mr. Maltzman

204B. Theories of Learning. Prerequisite: course 200A or equivalent. Critical discussion of the major theories in learning and their current status.

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. Garcia, Mr. Lovaas

205A-205B. Physiological Correlates of Behavior. Lecture, three hours. The physiological substrate of behavior and the neural and endocrine mechanisms which underlie psychological phenomena and behavior. New concepts of structural and functional organization in the nervous system and the ways these relate to behavioral and neurological dysfunction.

206. Psychophysiology of Brain Function. Modern concepts of the 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. Seminar in Physiological Psychology. Prerequisite: course 115 or equivalent. Mr. Butcher, Mr. Ellison, Mr. Krasne

208. Seminar in Comparative Psychobiology. Mr. Arnold

210. Comparative Psychobiology. Prerequisites: course 115 or equivalent, consent of instructor. A survey of the 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 the seminar and their significance and methodology discussed and criticized in depth. May be repeated for credit. S/U grading.

218A-218B. Advanced Industrial Psychology. Selection and training of employees, factors influencing efficiency of work. Mr. Barthol

219. Special Problems in Industrial Psychology. Mr. Barthol

220A-220B. Social Psychology. Prerequisite: course 135 or equivalent. An intensive consideration of the concepts, theories, and major problems in social psychology.

221. Seminar in Attitude Formation and Change. Discussion, three hours. Prerequisites: courses 220A-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. Seminar in Group Behavior. Discussion, three hours. Prerequisites: courses 220A-220B or consent of instructor. Special topics in interpersonal relations and group dynamics. Power control, structure and organization, group functioning. Mr. Kelley, Mr. Raven

222B. Interpersonal Influence, Social Power, and Health. Lecture, two hours; discussion, two hours. Prerequisites: courses 220A-220B or consent of instructor. A review of theory and research on interpersonal influence and social power, with particular application to health issues such as the doctor/patient, doctor/nurse, and counselor/client relationships. Supervisor/worker, parent/child, wife/husband, and teacher/student applications also considered.
Mr. Raven

C223A. Survey Research in Psychology. (Formerly numbered C223.) Lecture, three hours. A critical review of the theory and practice of large-scale sampling, measurement, and analysis of beliefs, attitudes, and other psychological variables. Concurrently scheduled with course C136B. Mr. Shure

224. Experimental Methods in Social Psychology. Lecture, three hours. Prerequisites: courses 220A-220B or consent of instructor. A critical review of laboratory techniques and problems of experimental control and measurement encountered in research on social psychological phenomena. Mr. Collins

225. Seminar: Critical Problems in Social Psychology. Discussion, three hours. Prerequisites: courses 220A-220B or consent of instructor. May be repeated for credit with consent of instructor.

226. Current Literature in Social Psychology (2 units). Recent and current research papers in social psychology presented by members of the seminar and their significance and methodology discussed and criticized in depth. May be repeated for credit. S/U grading.

227. Health Psychology. Lecture, two hours; discussion, one hour. Prerequisite: undergraduate degree or training in psychology. The psychological and social factors involved in the etiology of illness, the treatment and course of illness, the long-term care and adjustment of the chronically ill or disabled, and the practice of institutional health care and self-care.
Ms. Taylor

M228. Political Psychology. (Same as Political Science M224G.) Discussion, three hours. Prerequisites: course 220A or Political Science 214A. Examination of political behavior, political socialization, personality and politics, racial conflict, and the analysis of public opinion on these issues. Mr. Sears

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 a 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

M230A-M230B. Seminar in Behavioral Biology. (Same as Anthropology M228A-M228B, Biology M252A-M252B, Education M229A-M229B, Physiology M252A-M252B, and Psychiatry M291A-M291B.) Discussion, six hours. Prerequisite: consent of instructor. Basic seminar for graduates interested in behavioral biology. An interdisciplinary course dealing with behavioral research in anthropology, biology, psychology, and the medical sciences. Proximate causation, development, and evolution in animal behavior. Physiology and the organization of behavior. Vertebrate social organization. Animal communication. The application of natural selection theory to human social behavior. In Progress grading.

231. The Psychology of Gender. Seminar, three hours. Prerequisite: one prior course on gender/women's studies or consent of instructor. A critical evaluation of current research and theory concerning the psychology of gender, drawing on work from various areas of psychology to understand the 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, radio-immunoassay (measuring hormones in blood sample), ethical issues, methodological and statistical considerations, the measurement of sexual arousal, fantasy, and sexual dysfunction therapy. Discussion-oriented, with emphasis on operationalizing predictions concerning human sexual functioning.
Mr. Abramson

233. Seminar in Environmental Psychology. Prerequisites: courses 235, 250A, 250B. Critical review of work in environmental psychology designed to identify basic dimensions for the 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 the emotional response dimensions used to explain within-individual differences in response to the same environment over time or between-individual differences to the same situation. Review of literature relating information rate from environments to arousal and preferences for those environments.
Mr. Mehrabian

M234. Social Psychological Aspects of Competitive Youth Sport. (Same as Kinesiology M273.) Prerequisite: Kinesiology 120 or consent of instructor. Review of research concerning the 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. A survey of cognitive, analytic, and learning theory approaches to the study of personality. Emphasis on the intensive exploration of selected concepts and related research.

238. Seminar in Mental Measurements.
Mr. Woodward

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. (Formerly numbered 240.) Lecture, three hours. Prerequisites: one undergraduate course in developmental psychology, graduate standing. Consideration of variables influencing the cognitive social and emotional development of the human organism from conception through adolescence. Emphasis on research methodology and the research base for current theories of development.

242A-242F. Seminar in 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, Mr. Jeffrey

242C. Socialization.

242E. Cognitive Factors in Learning Disorder.
Mr. Adelman

242F. The Development of Language and Communication. Ms. Greenfield, Mr. Padilla

243A-243B. Seminar in 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. Mr. Nakamura

244. Critical Problems in Developmental Psychology. Lecture, three hours. Prerequisites: courses 240A-240B or equivalent, consent of instructor. Current problems; content varies depending on the interest of the 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 the status of emotional behavior in personality theory and development. Ms. Feshbach

M246. Psychological Aspects of Mental Retardation. (Same as Psychiatry M246.) Prerequisite: consent of instructor. Discussion of the 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 (F)

247A-247B. Theory and Methods of Computing in the Behavioral Sciences:

247A. Acquisition and analysis of data, on-line analysis of behavior, and control of experiments in the diverse content areas of psychology (e.g., perception, social, clinical, personality, and physiological).
Mr. Carterette

247B. Prerequisite: course 247A or consent of instructor. Topics in human problem solving, information processing, automata, language cognition, and problems arising in computer simulation of behavior. Each student undertakes a substantial project.
Mr. Carterette

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 the 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 the supervision of the instructor in charge. It is anticipated that many students will complete their project in two quarters (normally three quarters are allowed). S/U grading (course 251A only).

252. Multivariate Analysis. Prerequisites: courses 250A, 250B. Introduction to the analysis of data having multiple dependent measures. Topics include multivariate distributions, principal components analysis, multiple regression, canonical correlation, discriminant analysis, and the multivariate analysis of variance. Example applications from a variety of psychological areas of research, including clinical, cognitive, physiological, and social. Computer implementation includes APL and standard statistical packages. Mr. Woodward

253. Factor Analysis. Theory and practice of factor analysis in psychological research. Methods of factor exaction and rotation. Applications of computers to computations in factor analysis. Mr. Comrey

254. Seminar in Psychological Scaling. Theory of measurement, law of comparative judgment, methods of unidimensional scaling, multidimensional scaling, and related topics of current interest.
Mr. Holman

255. Quantitative Aspects of Assessment. Fundamental assumptions and equations of test theory. Current problems in assessment. Mr. Woodward

256. Seminar in Critical Problems in Psychological Measurement. Critical examination of issues in the major approaches to psychological measurement; relation in psychological methods and data to a general theory of measurement. Mr. Mount

M257. Multivariate Analysis with Latent Variables. (Formerly numbered 257.) (Same as Political Science M247.) Prerequisite: consent of instructor. Introduction to models and methods for the 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 the analysis of moment structures. Measurement models such as confirmatory, higher order, and structured-means factory 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. Prerequisites: courses 250A and 250B, or consent of instructor. Special problems in psychological statistics and data analysis. Mr. Wickens

259. Quantitative Methods in Cognitive Psychology. Prerequisites: courses 250A and 250B, or consent of instructor. A 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. Proseminar in Cognitive Psychology. 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 the 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, the 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 the analysis of value decisions. Mr. Parducci

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. The representation of cognitive structures and higher-level processes. Specific areas include perception, learning and memory, problem solving, and reasoning. Relationships to artificial intelligence. Mr. Richards, Mr. Wickens

268A-268E. Seminar in Human Information Processing. Seminar, three hours. Prerequisite: consent of instructor. Topics vary with the interests of the 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. Mr. Parducci

268D. Language and Thought. Mr. MacKay

268E. Human Performance. Mr. Beatty, Mr. Carterette

269. Seminar in Cognitive Psychology. Seminar, three hours. Prerequisite: consent of instructor. A 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 the 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 the psychological attributes of psychopathology and the procedures for psychological assessment, intervention, and research with clinical populations. Experience closely coordinated with the 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

272A-272F. 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. A course in the 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

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.

M275. Family Process: Psychological and Social Perspectives on the Family. (Same as Social Welfare M275.) Various theoretical perpectives applicable to the analysis of family structure and dynamics. Critical issues in the application of family constructs to clinical problems. Mr. Cohen, 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

277. Advanced Clinical Assessment. Projective techniques, clinical interpretation, case studies, the psychological test battery, psychopathology, and application of assessment to problems in psychotherapy.

278. Seminar in Motivation, Conflict, and Neurosis. Mr. Feshbach

279. Seminar in Research in Psychopathology.

281. Seminar in Behavior Therapy. Mr. Lovass

282. Interpersonal Forms Analysis of Human Interaction Structures. 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. A survey of the dominant psychological attributes of particular forms of psychopathology, including an analysis of the status of various theories concerned with the etiology and mediating mechanisms of personality, neurotic, schizophrenic spectrum, and affective disturbances.

284. Seminar in 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. Mr. Broen

287. Critical Problems in Clinical Research Methodology. Prerequisites: courses 250A, 250B. Special problems of measurement and design in clinical research. Mr. Christensen

288. Seminar in Research in Personality (1 unit). Prerequisite: graduate standing in personality. Required of all students majoring in personality. Current research, theory, and professional issues within the area of personality. A brown-bag format utilized to foster intellectual exchange and discussion. Students make at least one presentation per quarter 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 the 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 the 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. The behavior-physiology interactions of some major bodily systems: the 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. Castro, Mr. Grijalva, Ms. Morell

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 in 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. Mr. Arnold
(W, M294A, M294C; Sp, M294B, M294D)

297. Issues in the Social Development of the Minority Child. (Formerly numbered 229A.) Seminar, three hours. Prerequisites: graduate standing, consent of instructor. A critical evaluation and integration of existing research on the social psychological development of the minority child. Emphasis on the socialization of cognitive and personality style, with the goal of empirically clarifying the issues raised in this area of developmental study. Mr. Myers

298. Special Problems in Psychology. Content depends on the interests of the 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 the measurement of change. Some experience in analysis of actual data sets. Mr. Kaye

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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 (4 or 8 units). Prerequisites: courses 271A-271B-271C. Students on practicum assignments are required to register for this course each quarter (except by consent of clinical program committee).

402. Fieldwork in Speech Pathology (4 or 8 units). Prerequisite: consent of instructor. Practical work in hospitals and clinics in diagnostic testing and psychotherapy with speech disorders.

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 the knowledge, concepts, and theories on teaching and supervision of applied clinical psychology. Ms. Jacobs, Mr. Nakamura

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 an understanding of psychological concepts and research; the psychological perspective on these problems; how the psychological perspective might be enlarged and extended in the medical area. Through a practical field placement helps students apply the knowledge acquired in class to research observation and/or clinical work in the field. Ms. Taylor

425. Health Psychology Lecture Series (2 units). Clinicians and researchers in health psychology from the 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). Mr. Barthol

490. Scientific Writing for Psychologists (2 units). Lecture, two hours; laboratory, two hours. Prerequisite: consent of instructor. Gives graduate students the 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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. S/U grading.

596. Directed Individual Research and Study in Psychology (2 to 12 units). One 596 course is required during the 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 the 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)

383 Dodd Hall, (213) 825-7831, 825-4641

Professors

Marilyn Adams, Ph.D. *(Philosophy)*
Robert Merrihew Adams, Ph.D. *(Philosophy), Chair*
Rogers Albritton, Ph.D. *(Philosophy)*
Amin Banani, Ph.D. *(Persian and History)*
Arnold J. Band, Ph.D. *(Hebrew)*
Robert L. Benson, Ph.D. *(History)*
Kees W. Bolle, Ph.D. *(History)*
Seeger A. Bonebakker, Ph.D. *(Arabic)*
Giorgio Buccellati, Ph.D. *(Ancient Near East and History)*
John Callender, Ph.D. *(Egyptology)*
Claus-Peter Clasen, Ph.D. *(History)*
Herbert A. Davidson, Ph.D. *(Hebrew)*
Vinton A. Dearing, Ph.D. *(English)*
Patrick K. Ford, Ph.D. *(English)*
Amos Funkenstein, Ph.D. *(History)*
Marija Gimbutas, Ph.D. *(Archaeology)*
Richard Hovannisian, Ph.D. *(History)*
Daniel W. Howe, Ph.D. *(History)*
Henry Ansgar Kelly, Ph.D. *(English)*
William R. LaFleur, Ph.D. *(Buddhism)*
Bengt T. M. Löfstedt, Ph.D. *(Medieval Latin)*
Jacques Maquet, Ph.D. *(Anthropology)*
Afaf Marsot, D.Phil. *(History)*
Ronald J. Mellor, Ph.D. *(History)*
Ismail Poonawala, Ph.D. *(Arabic)*
Merrick Posnansky, Ph.D. *(History and Anthropology)*
Douglass Price-Williams, Ph.D. *(Anthropology and Psychiatry)*
Jaan Puhvel, Ph.D. *(Classics and Indo-European Studies)*
Yona Sabar, Ph.D. *(Hebrew)*
Hartmut E. F. Scharfe, Ph.D. *(Sanskrit)*
Hanns-Peter Schmidt, Ph.D. *(Indo-Iranian)*
Stanislav Segert, Ph.D. *(Northwest Semitics)*
Johannes Wilbert, Ph.D. *(Anthropology)*
Milton V. Anastos, Ph.D., *Emeritus (Classics)*
Kenneth K.S. Chen, Ph.D., *Emeritus (Buddhism)*
Hilda Kuper, Ph.D., *Emeritus (Anthropology)*
Gerhart B. Ladner, Ph.D., *Emeritus (History)*
William A. Lessa, Ph.D., *Emeritus (Anthropology)*

Associate Professors

Edward G. Berenson, 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)*
Philip L. Newman, Ph.D. *(Anthropology)*
Herbert E. Plutschow, Ph.D. *(Japanese Religion and Cultural History)*

Assistant Professor

Ruth Bloch, Ph.D. *(History)*

Lecturer

David L. Lieber, D.H.L. *(Hebrew)*

Adjunct Associate Professor

S. Scott Bartchy, Ph.D. *(History)*

Scope and Objectives

The UCLA major in the study of religion has a twofold purpose. In the first place it 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. In the second place, the program asks the student to select one particular religious tradition for study in greater depth. Cohesion and integrity in the program are furthered by courses dealing with philosophical problems in religion and with general anthropological reflections.

The program requires one year of language study which should be related to the major tradition of concern. This minimum requirement allows every student to develop some idea of the basic problems in understanding religious texts. Students contemplating graduate study will generally do more than fulfill the minimum requirement.

Bachelor of Arts Degree

Preparation for the Major

Required: Anthropology 22; History 4; Philosophy 2; two courses from History 1A, 1B, 1C, 9A, 9B, 9C, 9D, 10A, 10B.

The Major

Required: A minimum of 13 upper division courses and three related courses in foreign language. These must include History 193A or 193E; Anthropology 133R or 156; two courses from Philosophy 175, 177B or 195, 193.

In addition, you must select one of the nine groups below as your main area of study and take three courses in that main area and three related courses in foreign language as indicated. (The language courses may be either upper or lower division. If any requirements have been satisfied prior to admission to the program, they will be honored on the recommendation of the appropriate instructor. Another language pertinent to your main area may be substituted with the consent of the committee in charge of the major. Among these languages are Hittite, Ugaritic, Syriac, Coptic, Persian, Armenian, French, German, Irish, Welsh.)

You must also select six courses in traditions chosen from at least two groups outside your main area of study, excluding foreign language courses.

Group 1: Ancient Near East and Eastern Europe — Three courses from History 193D, Ancient Near East 130, 150A, 150B, 150C, 170, Indo-European Studies 131, 132, Iranian 170; three courses in either Ancient Egyptian or Akkadian.

Group 2: Indo-European Traditions — Three courses from English M111D, M111E, History 193B, Old Norse Studies 140, Iranian 170, Slavic M179; three courses in Sanskrit, Latin, or Greek.

Group 3: Greece and Rome — Three courses from Classics 161, 162, 166A, 166B, History 197 (Roman History: Christianity and Imperial Rome); three courses in either Latin or Greek.

Group 4: Israel and Judaism — Three courses from English 108A, History M191A, M191B, 192A, 192B, Hebrew 120, 130, 135, 220, Jewish Studies 110, M150A, 150B, 151A, 151B, 199, Ancient Near East 170; three courses in Hebrew.

Group 5: Christianity — Three courses from Philosophy 105, 106, 107, English 108B, History 116A, 116B, 119, 120, 121A, 121B, 125B, 150A, 150B, 150C, 194A, 194B, Ancient Near East 170, Classics M170A; three courses in either Latin or Greek.

Group 6: Islam — Three courses from Philosophy 104, History 106A, 107A, 107B, Arabic 150A, 150B, Iranian 150A, 150B; three courses in Arabic.

Group 7: South Asia — Three courses from History 188A, 193B, 193C, 197 (South Asian Religions), East Asian Languages and Cultures 167, Iranian 170; three courses in Sanskrit.

Group 8: Far East — Three courses from History 193C, East Asian Languages and Cultures 172, 173, 174; three courses in Sanskrit, Chinese, or Japanese.

Group 9: Traditional and Nonliterate Cultures — Three courses from Anthropology 171, 174P, 177, Folklore and Mythology M111, M123A, M125, M129, 130, History 157A, 157B, 157C, Linguistics M150; three courses in a language selected in consultation with an instructor in these areas.

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 13 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 in the Study of Religion. Prerequisite: consent of instructor. Limited to 20 students. An interdisciplinary approach to some major topics in the 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

Romance Linguistics and Literature
(Interdepartmental)

359 Royce Hall, (213) 825-0237

Professors

Stephen R. Anderson, Ph.D. *(Linguistics)*
Shirley L. Arora, Ph.D. *(Spanish)*
José R. Barcia, Lic. F. y L. *(Spanish)*
Rubén A. Benítez, Ph.D. *(Spanish)*
Marc Bensimon, Ph.D. *(French)*
Franco Betti, Ph.D. *(Italian)*
Giovanni Cecchetti, Ph.D., Dottore in Lettere *(Italian)*
Fredi Chiappelli, Dottore in Lettere *(Italian)*
Margherita Cottino-Jones, Ph.D., Dottore in Lettere *(Italian)*
Hassan el Nouty, Docteur ès Lettres *(French)*
Eric Gans, Ph.D. *(French)*
Joaquín Gimeno, Ph.D. *(Spanish)*
Peter Haidu, Ph.D. *(French)*
Claude L. Hulet, Ph.D. *(Spanish and Portuguese)*
Carroll B. Johnson, Ph.D. *(Spanish)*
Bengt T. M. Löfstedt, Ph.D. *(Classics)*
Gerardo Luzuriaga, Ph.D. *(Spanish)*
C. B. Morris, Litt.D. *(Spanish)*
C. P. Otero, Ph.D. *(Spanish and Romance Linguistics)*
Edward F. Tuttle, Ph.D. *(Italian)*
Stephen D. Werner, Ph.D. *(French)*
Pier-Maria Pasinetti, Ph.D., Dottore in Lettere, *Emeritus (Italian)*
Stanley L. Robe, Ph.D., *Emeritus (Spanish)*

Associate Professors

George D. Bedell, Ph.D. *(Linguistics)*
Patrick Coleman, Ph.D. *(French)*
E. Mayone Dias, Ph.D. *(Portuguese)*
Shuhsi Kao, Ph.D. *(French)*
Sara Melzer, Ph.D. *(French)*
Susan Plann, Ph.D. *(Spanish)*
A. Carlos Quícoli, Ph.D. *(Portuguese and Romance Linguistics), Chair*
Richard M. Reeve, Ph.D. *(Spanish)*
Enrique Rodríguez-Cepeda, Ph.D. *(Spanish)*
A. John Skirius, Ph.D. *(Spanish)*
Paul C. Smith, Ph.D. *(Spanish)*

Assistant Professors

Jean-Claude Carron, Ph.D. *(French)*
James Reid, Ph.D. *(French)*
Timothy A. Stowell, Ph.D. *(Linguistics)*

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 Aptitude 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. Students admitted from elsewhere whose preparation is considered deficient in view of their intended specialization are required to take specified upper division 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 quarter 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 quarter 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 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 100 is required as a prerequisite of all students majoring in the linguistics field. 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 committee, 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 quarter 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) Aptitude 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 form 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; (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 Educational Testing Service (ETS) test. 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 a grade 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 quarter 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. These 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 100 is required as a prerequisite of all students majoring in the linguistics field.

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 the 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 prospectus 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.

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.

Candidate in Philosophy Degree

You are eligible to receive the C.Phil. degree on advancement to candidacy for the Ph.D.

Graduate Courses

211. Comparative Romance Syntax. Lecture, three hours. Prerequisite: French 204A, Portuguese 204A, Spanish 204A, or consent of instructor. Comparative study of syntactic processes in Romance languages. Investigation of the parameters underlying linguistic variation. Mr. Otero, Mr. Quícoli

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 the M.A. degree requirements. S/U grading.

597. Preparation for Graduate Examinations (4 to 8 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 the quarter 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 201A. Phonological Theory: Current Issues

201B. Phonological Theory in the 20th Century

206A. Syntactic Theory: Current Issues in Formal Syntax

206B. Syntactic Theory: Current Issues in Functional and Typological Approaches to Syntax

Development of the Romance Languages

Hispano-Romance: Spanish M205A-M205B. The Development of the Portuguese and Spanish Languages

Indo-European: Indo-European Studies 210. Indo-European Linguistics: Advanced Course

280A-280B. Seminar in 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. Seminar in Medieval Latin

Northern Gallo-Romance: French 204A. Phonology and Morphology from Vulgar Latin to French Classicism

204B. Syntax and Semantics from Vulgar Latin to French Classicism

Paleography: History 219A. Paleography I

219B. Paleography II

Romance Dialectology: Italian 259C. Italian Dialectology

Spanish 209. Dialectology

Romance Linguistics: Linguistics 225G. Linguistic Structures

Southern Gallo-Romance: French 215E. The Medieval Language and Literature: Provencal Poetry

Vulgar Latin: Latin 232. Vulgar Latin

Studies in the History of the Romance Languages

Gallo-Romance: French 215A. The Medieval Language and Literature: Old and Middle French

Hispano-Romance: Spanish M251A-M251B. Studies in Galegan-Portuguese and Old Spanish

Italo-Romance: Italian 210A. Early Italian Literature: The Origins of Italian Language and Early Texts

259A-259B-259C. Studies in the History of Italian Language

Synchronic Linguistics

Advanced Grammar: French 201. Literary Research and Composition

206. French Linguistics

Italian 259B. The Structure of Modern Italian

Portuguese 202. Synchronic Morphology and Phonology

204A-204B. Generative Grammar

Spanish 202. Phonology and Morphology

204A-204B. Generative Grammar

Studies in Linguistics and Dialectology: French 261. Studies in French Linguistics

262. Studies in Stylistics

Spanish 256A-256B. Studies in Spanish Linguistics

257. Studies in Dialectology

Literature Courses

French Literature: French 205A-205D. The Intellectual Background of French Literature

History of Ideas: French 260A-260B. Studies in the History of Ideas

Literary Criticism: French 203A-203B. French Literary Criticism

258A-258B. Studies in Literary Criticism

Italian 205A-205B. Methods of Literary Criticism

Spanish M201. 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 on Petrarch

Studies in Early Romance Literature: French 215B-215F. The Medieval Language and Literature

250A-250B. Studies 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. Seminar on Dante

252. Seminar on 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-218D. The 18th Century

254A-254B. Studies in the 18th Century

Italian 218A-218E. Italian Literature of the 18th Century

256A-256B. Seminar on the 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-219K. The 19th Century

255A-255B. Studies in the 19th Century

Italian 219A-219F. Italian Literature of the 19th Century

257A-257B. Seminar on 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-220P. The 20th Century

221A-221D. 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. Seminar on 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-216H. The Renaissance

217A-217I. The 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. Seminar on Chivalric Poetry in Italy
255A-255B. Seminar on the 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 entering their junior year of undergraduate study. All have leadership laboratories which help to build management skills.

Scholarships

Students in all three departments are eligible to compete for scholarships based on merit and achievement. Scholarships, available for up to four years of study, normally cover the full cost of tuition, a book allowance, fees, and educational expenses and provide a living allowance of $100 per month during the academic year. For further information, contact the specific department in which you are interested.

Aerospace Studies

210 Men's Gym, (213) 825-1742

Professor
Richard L. Folks, M.A., Colonel, *Chair*

Adjunct Assistant Professors
Dean S. Allred, M.S., Captain
Ronald J. Calloway, M.S., Captain
Murray D. Johannsen, M.B.A., M.A., Captain

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, and operating principles and national security policies, demonstrating ability to apply modern principles of management and human relations in the Air Force environment, and mastery 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-quarter 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 two hours of academic class every other week and two hours of leadership laboratory on alternating weeks 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 every other week and two or four hours of academic class (each week that laboratory does not meet) during the academic year.

A prerequisite for the two-year program is 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 this program are encouraged to apply to the department chair early during the Fall Quarter preceding the six-week summer field training course. The application deadline normally is March 1, and 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, and performance during an officer board interview.

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 (1 unit each). Lecture, one hour; discussion, one hour. Air Force ROTC students should complete all three courses, preferably in sequence. Willingness to participate in class discussion is required. **1A.** A "threat assessment" of the U.S.S.R./Warsaw Pact; summary of the United States agencies and armed services which specifically counter that "threat," comparing and contrasting the U.S.S.R. and the U.S. in numerous areas. **1B.** Discussion of doctrine and policy, giving students an opportunity to role play and create problems/solutions. Defense contracting and the attached and specialized units of the Air Force; civilian influence and Air Force contributions to industry. **1C.** The major commands of the Air Force, their contributions to civilian industry/economy, and the special programs/challenges of the future. More technical in nature, covering basic improvements in Air Force weapon systems, humanitarian efforts, and the importance of current events. Pros and cons. Capt. Johannsen (F,W,Sp)

Sophomore-Year Courses

20A-20B-20C. The Developmental Growth of Air Power (1 unit each). Prerequisites: courses 1A-1B-1C. The development of air power over the past 60 years. The 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 the history of air power, especially where these provide significant examples of the impact of air power on strategic thought.
Col. Folks (F,W,Sp)

Upper Division Courses

130A-130B-130C. Concepts of Air Force Management and Leadership (3 units each). Course 130A is prerequisite to 130B, which is prerequisite to 130C. An analysis of the 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. Calloway (F,W,Sp)

140A. Military Judicial System (3 units). Seminar. Prerequisite: course 130C. An introduction to the military justice system, international laws of armed conflict relating to air operations, and the foundations of military professionalism. Oral and written reports to strengthen communicative skills. Capt. Allred (F)

140B. The Military in American Society (3 units). Seminar. Prerequisite: course 140A. Forces and issues in the social context of the American military. The influence of social norms, societal pressures, and cultural factors on the functions and role of the military professional in the United States. Communicative skills strengthened through extensive classroom presentations. Capt. Allred (W)

140C. American Defense Policy (3 units). Seminar. Prerequisite: course 140B. U.S. security policy with respect to factors that influence its formulation, the bureaucracy that formulates and implements it, and the 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. Capt. Allred (Sp)

199. Special Studies in Aerospace Studies (1 or 3 units). Prerequisite: consent of instructor. A course of study for undergraduates who wish to engage in independent research under the direct supervision of a department faculty member. Col. Folks

Military Science

142 Men's Gym, (213) 825-7381

Professor

Richard H. Zeiler, M.A., Lieutenant Colonel

Assistant Professors

William Coffey, M.E.A., Major
Anthony Dennard, M.A., Major
Carla J. Smith, M.A., Captain
J.L. Steuber, M.B.A., Captain

Army ROTC Scope and Objectives

Army ROTC prepares selected students for leadership as commissioned officers in the United States Army, Army Reserve, or National Guard. This training includes an 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 13 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, students are 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 service 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 only three months. Students accepting ROTC scholarships, 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 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, enlist in the United States Army Reserve for eight years, 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 leads 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

ROTC students may satisfy military history requirements by completing History 7B, 148A, 148B, 148C, 152A, or 152B in lieu of courses 22 and 23, with consent of the ROTC adviser.

000. Leadership Laboratory (No credit). Laboratory, two hours. Cadets must be concurrently enrolled in a military science course and actively pursuing a commission through the ROTC program. Required of all Army ROTC students each quarter. Designed to allow cadets to apply the leadership techniques and military skills taught in the classroom and to develop the confidence needed to cope with the challenges associated with being an officer.

11. U.S. Defense Establishment (2 units). A study of the evolution of the U.S. Department of Defense, including a study of the military services, with emphasis on the U.S. Army. (F)

12. U.S. Defense Establishment (2 units). A study of the military institution and other elements of national power as instruments of national policy and strategy in conditions of peace and war. (W)

13. Theory of Warfare (2 units). Inquiry into the theory, nature, causes, and elements of warfare, with attention also to the evolution of weapons and warfare. (F)

14. Principles of Land Navigation Applicable in Maneuver (2 units). (Formerly numbered 114.) Lecture, one hour; laboratory, one hour. Limited to military science students. 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 the military and government, psychological warfare, and civic actions. (Sp)

22. United States Military History, 1860-1919 (2 units). A survey of American military history during the period from 1860 to 1919. The causes of war, strategy, tactics, and technological developments. Economic, political, diplomatic, and social history is woven into the fabric of war, and a special effort is made to reveal the character and personalities of the leading political and military figures of the period. (W)

23. United States Military History, 1919-1986 (2 units). Survey of American military history which examines American involvement in World War II, Korea, and Vietnam. Causes of war, strategy, tactics, and technology set against economic, political, and diplomatic concerns. The impact of warfare on society. (Sp)

Upper Division Courses

111. The Psychology of Leadership I (2 units). Limited to military science students. The basis for understanding the relationship of individual differences and the leadership process, group dynamics and their relationship to the leadership process, formal organizational constraints on the leadership process, and the impact of society on the leadership process. Introduction to the external environment in which a leader functions and the pressures that exist on a leader. The psychology of the individual as a follower, examined in the areas of motivation, peer pressure/conformity, and group norms to determine how they influence an individual. (F)

112. The Psychology of Leadership II (3 units). Lecture, two hours. Limited to military science students. Introduction to various individual leadership styles and personalities to assist students in development of their own individual style. Different philosophies of leadership, along with the 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). Limited to military science students. A study of instructional processes, lesson content planning procedures, techniques of applicatory education, role of testing (including evaluation and analysis). Emphasis on improvement of teaching and group process. (Sp)

123. Military Legal Systems (2 units). Limited to military science students. An introduction to the theory and application of military law and legal systems, with emphasis on the Uniform Code of Military Justice and the rights of the accused under the constitution. (F)

125. Decision Making (2 units). Limited to military science students. Designed to present students who will become commissioned officers with a new insight into the modern methods of managerial decision making and into the various steps involved in the process. Introduction to the various components of leadership and the functions of management in order to understand where the areas of problem analysis and decision making impact and how they fit into leadership and management. The various steps which comprise the problem analysis and decision-making processes. (Sp)

126. Military Professionalism and Ethics (2 units). Lecture, 90 minutes; discussion, 30 minutes. Limited to military science students. The ethical concepts held by America's military institution. The classification of the military as a profession, the 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 Study (1 to 3 units). Prerequisites: upper division standing, consent of instructor. Supervised independent study and research for undergraduate students who desire to pursue topics of their own selection.

Naval Science

123 Men's Gym, (213) 825-9075

Professor

Allen L. Shapero, M.S., Captain, U.S. Navy, *Chair*

Assistant Professor

Michael P. Jonas, M.S., Commander, U.S. Navy, *Vice Chair*

Adjunct Assistant Professors

Kevin W. Alt, B.S., Lieutenant, U.S. Navy
John M. Misiewicz, M.S., Captain, U.S. Marine Corps
Peter A. Shaner II, M.S., Lieutenant, U.S. Navy

Navy ROTC Scope and Objectives

Navy ROTC at UCLA offers subsidized and nonsubsidized 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 an understanding of the fundamental concepts and principles of naval science; a basic understanding of associated professional knowledge; an 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 and aviation. It also provides an 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, with the same obligations and privileges as in the College Program described above. The age limit is 27½ years at the time of graduation. Applicants should contact the department no later than March 1 of their sophomore year.

Freshman-Year Courses

1A. Introduction to Naval Science (1 unit). An introduction to the structure of the Department of the Navy and its legal framework. Relationships in the Department of Defense. Components of the Naval Service. Shipboard organization. Lt. Alt

1B. Naval Ship Systems I. An introduction to the principles of ship hull and superstructure design. The concepts of ship structural integrity, stability, and buoyancy examined in detail. Basic thermodynamic principles inherent in ship propulsion and salt water distillation systems. Lt. Alt

Sophomore-Year Courses

20A. Naval Ship Systems II. (Formerly numbered 20B.) A study of naval weapon systems, with emphasis on target designation and acquisition, methods of solving fire control problem and target detection systems. Analysis of transfer and feedback functions inherent in weapon systems. Infrared, radar, and sonar principles. Lt. Alt

20B. Seapower and Maritime Affairs (2 units). (Formerly numbered 20A.) A conceptual study of seapower, emphasizing the 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. Shapero

Junior-Year Courses

101A. Navigation I. A study of principles of piloting, rules of the road, shiphandling, and basic concepts of multiple ship formations in ocean transit. In-depth discussion of problems associated with high seas and inland water, applying to small craft and supertankers alike. Lt. Shaner

101B. Navigation II. Prerequisite: course 101A or consent of instructor. A detailed study of electronic and celestial navigation employed in the determination of a ship's position at sea, including spherical trigonometry, mathematical analysis, sextant sights, and the use of navigational aids. Lt. Shaner

***103. Evolution of Warfare.** A study of the evolution of warfare, including historical and comparative consideration of the influence that leadership, political, economic, and sociological and technological development factors have had on warfare and the influence they continue to exert in the age of limited warfare. Capt. Misiewicz

*Course to be taken by candidates for commissions in the Marine Corps or Marine Corps Reserve in lieu of courses 101A, 101B, 102B, 102C.

Senior-Year Courses

102B. Naval Leadership and Management I. An examination of current and classical leadership and management theories and their application to the military environment. Interpersonal communication, counseling theory, moral and professional ethics, conflict resolution, and management of change. The leadership problems created by racism, sexism, alcoholism, and drug abuse. Capt. Misiewicz

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. Cdr. Jonas

***104. Amphibious Operations.** A study of the art of amphibious operations, including the historical development of techniques used to project military power from sea to land. The evolution of amphibious doctrine and techniques, examined through study of the U.S. landings during World War II, the Korean Conflict, and the Vietnam War. Capt. Misiewicz

*Course to be taken by candidates for commissions in the Marine Corps or Marine Corps Reserve in lieu of courses 101A, 101B, 102B, 102C.

Slavic Languages and Literatures

115 Kinsey Hall, (213) 825-2676

Professors

Aleksandar Albijanić, Ph.D. *(South Slavic Languages and Literatures)*
Henrik Birnbaum, Ph.D. *(Slavic Languages and Literatures)*
Thomas Eekman, Ph.D. *(Slavic Literatures)*
Michael S. Flier, Ph.D. *(Slavic Languages and Literatures)*
Marija Gimbutas, Ph.D. *(European Archaeology)*
Vladimir Markov, Ph.D. *(Russian Literature)*
Alan H. Timberlake, Ph.D. *(Slavic Languages), Chair*
Dean S. Worth, Ph.D. *(Slavic Languages)*

Associate Professors

Michael Heim, Ph.D. *(Czech and Russian Literature)*
Peter Hodgson, Ph.D. *(Russian Literature)*
Rochelle Stone, Ph.D. *(Polish and Russian Literature)*

Assistant Professor

Irina Paperno, Ph.D. *(Russian Literature)*

Lecturer

Edward Denzler, M.A. *(Russian)*

Scope and Objectives

The undergraduate program, leading to a Bachelor of Arts degree in Slavic Languages and Literatures, is designed to provide students with a basic mastery of the Russian language, a familiarity with the classics of Russian literature, and a general background in the cultural, political, and social history of the Slavic peoples.

The program presents a considerable range of options to students with specialized interests. Besides the traditional major in Slavic languages and literatures, the program also offers B.A. degrees in Russian Civilization (language, literature, history, economics, political science, geography, art, music, film) and Russian Linguistics (language, literature, Russian and Slavic linguistics, general linguistics, psychology).

The graduate program provides advanced training in Slavic linguistics and literature leading to the master's degree and the Ph.D. 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 secondary language teaching, translation, interpreting, librarianship, and government service.

Undergraduate Study

The department offers three majors: (1) Slavic languages and literatures, (2) Russian civilization, and (3) Russian linguistics. The major in Slavic languages and literatures 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 civilization or Russian linguistics are expected to make up in order to receive graduate degrees in the department. Students who do not choose the major in Slavic languages and literatures but 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 several graduate courses numbered below 220 with consent of the instructor and the graduate adviser.

Work completed in the University's summer or semester Russian programs at Leningrad State University may be applied toward fulfillment of the Russian 101- and 111-series requirements in any of the following majors.

Bachelor of Arts in Slavic Languages and Literatures

Preparation for the Major

Required: Slavic 99, Russian 1, 2, 3, 4, 5, 6, 99.

The Major

Required: Russian 101A-101B-101C, 111A-111B-111C, 118, 119, 120, 121, 122, 123; three courses from 130A, 130B, 130C, 134, 140A, 140B, 140C, 140D, M150; one course from 124A through 124F; any two electives from Russian 102A, 102B, 102C (when taken in conjunction with Russian 112A, 112B, 112C), 124A through 124F, 125, 126, 130A, 130B, 130C, 134, 140A, 140B, 140C, 140D, M150, 193, Czech 155A, 155B, Polish 152A, 152B, Serbo-Croatian 154A, 154B. Note: Russian 118, 119, and 120 may be taken in the sophomore year.

Bachelor of Arts in Russian Civilization

Preparation for the Major

Required: Russian 1, 2, 3, 4, 5, 6, 99.

The Major

Required: Russian 101A-101B-101C, 111A-111B-111C, 119, 120, three additional courses in Russian literature, seven courses from Russian M170, Economics 182, Geography 184, History 131A, 131B, 131C, 131D, Political Science 128A, 128B, 156, or special courses in the Departments of Art, Design, and Art History, Music, Theater, Film, and Television, and Slavic Languages and Literatures approved by the undergraduate adviser.

Bachelor of Arts in Russian Linguistics

Preparation for the Major

Required: Russian 1, 2, 3, 4, 5, 6.

The Major

Required: Russian 101A-101B-101C, 111A-111B-111C, 121, 122, 123, Linguistics 100, 103, 110, 120A, 120B, five courses from Russian 102A, 102B, 102C (when taken in conjunction with Russian 112A, 112B, 112C), 130A, 130B, 130C, 134, 140A, 140B, 140C, 140D, M150, Slavic 201, 202, Linguistics 125, 127, M150, 164, C165A, C165B, Psychology 123. Students majoring in Russian linguistics who intend to pursue graduate study in the department are strongly encouraged to take at least three of the Russian literature courses enumerated above.

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 the equivalent of a UCLA B.A. in Slavic Languages and Literatures, or three years of Russian language and a sufficient number of Russian history, literature, and linguistics courses so that you will not need more than one year (nine courses) to make up deficiencies. 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 take the M.A. comprehensive examination as a screening examination within your first year and to make up any deficiencies in your background compared with that of a UCLA master's degree recipient.

For all applicants, three letters of recommendation are required from persons capable of judging your academic potential. 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.

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 lan-

guage 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 at least one quarter 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 quarter until a pass grade is achieved; (2) you must demonstrate an ability to read scholarly literature in either French or German by one of three options: (a) passing the appropriate Educational Testing Service (ETS) 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 before admittance may satisfy this requirement at the discretion of the graduate adviser).

Course Requirements

Slavic 201, Russian 102A-102B-102C, 112A-112B-112C, and 204 are required of all M.A. students.

Literature students must also take Russian 211, 212, 213, and one other literature course in the department.

Linguistics students must also take Slavic 202, Russian 221, 222, 225, and two courses from 211, 212, 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 quarter 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 each quarter. After you have declared your intention to take the examination in a given quarter, a committee consisting of three members is appointed by the chair and the graduate adviser. The comprehensive examination has two parts — written (three hours) and oral (two hours) — and is based on coursework and the departmental reading list. The examination covers either linguistics or literature. If you receive a pass grade on the written examination, you are admitted to a two-hour 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, no later than one calendar year after the first attempt.

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"); (3) taking one year (or the equivalent) of a second Slavic language.

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 an ability to read scholarly literature in both French and German by completing one of the three options listed under the master's degree. With departmental consent, students specializing in linguistics may substitute a 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 Educational Testing Service (ETS) examination 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 221, 222, 223, and four other advanced linguistics courses or seminars (numbered above 220).

Recommended preparation for linguists includes Linguistics 100, 103, 110, 120A, 120B, M150.

Literature students must take two courses from Slavic 230A-230B-230C; Russian 251A; and three additional seminars.

Candidates specializing in literature are advised to acquire a sound general knowledge of modern Western European literature.

Qualifying Examinations

Candidates are required to submit to the examination committee a serious research paper of publishable quality. The paper must be received and approved no later than one quarter preceding the comprehensive written examination.

All students are expected to have a sound general knowledge of both Slavic philology and Russian literary history equivalent to that required for the M.A. at UCLA. For linguistics students, there is one written three-hour qualifying examination given at the end of each quarter. For literature students, there are two written three-hour qualifying examinations given one week apart at the end of each quarter.

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 quarters (or one quarter 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 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. An introductory survey of the social and cultural institutions of the Slavic peoples and their historical background.

Upper Division Courses

177. Baltic Languages and Cultures (2 units). A general survey of the peoples speaking Old Prussian, Lithuanian, and Latvian; their linguistic, historical, and ethnic affiliations. Mrs. Gimbutas

M179. Baltic and Slavic Folklore and Mythology. (Same as Folklore M126.) Lecture, three hours. A general course for students interested in folklore and mythology and for those interested in Indo-European mythic antiquities. Mrs. Gimbutas

199. Special Studies (2 to 8 units). Prerequisites: senior standing, consent of instructor.

Graduate Courses

Linguistics

201. Introduction to Old Church Slavic. Lecture, three hours. Required for the M.A. (linguistics, literature). Introduction to phonology and grammar; readings.

202. Introduction to Comparative Slavic Linguistics. Lecture, three hours. Required for the M.A. (linguistics). Introduction to the comparative phonology and grammar of the 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 the Ph.D. (linguistics). Introduction to the structure and history of the 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 the Ph.D. (linguistics). Introduction to the structure and history of the 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 the Ph.D. (linguistics). Introduction to the structure and history of the South Slavic languages.

224. Introduction to Ukrainian and Belorussian. Lecture, three hours. Prerequisite: course 202. Introduction to the history and structure of Ukrainian and Belorussian.

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 the development of Common Slavic.

251. Introduction to Baltic Linguistics. Lecture, three hours. Prerequisite: course 202. Introduction to Baltic linguistics, with special attention to the 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 in 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 in 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 quarters required for the Ph.D. (literature). **230A.** Middle Ages through Baroque; **230B.** Classicism to Romanticism; **230C.** Realism to Modernism.

290. Seminar in 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 in Literary Analysis. Seminar, three hours. Recommended 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. A teaching apprenticeship under the 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. An introductory survey of the social and cultural institutions of the Bulgarian people and their historical background.

Upper Division Courses

103A-103B-103C. Elementary Bulgarian. Recitation, five hours. Basic course in the Bulgarian language.

154. Survey of Bulgarian Literature. Lecture, three hours. Prerequisite: upper division standing. Lectures and readings in English. A survey of Bulgarian literature from the Middle Ages to the present.

Czech

Upper Division Courses

102A-102B-102C. Elementary Czech. Recitation, five hours. Basic course 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 course in the Polish language.

102D-102E-102F. Advanced Polish. Recitation, three hours. Prerequisite: course 102C.

152A-152B. Survey of Polish Literature. Lecture, three hours. Lectures and readings in English. **152A.** From the Middle Ages to Romanticism; **152B.** From Realism to the Present.

160. Polish Romanticism. Lecture, three hours. Lectures and readings in English. Comparison of Polish Romanticism with that of other Slavic and Western European countries.

Graduate Course

280. Seminar in 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.

10A-10B-10C. Russian Conversation (2 units each). Prerequisite: course 3 or consent of instructor. Russian conversation designed to supplement the grammar and readings of courses 4, 5, 6.

11A-11B-12A-12B-13A-13B. Self-Paced Program in Russian (2 to 12 units). Basic course in the Russian language. Each two-unit course in the 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 the completion of or simultaneous enrollment in all courses lower in the sequence.

101A-101B-101C. Advanced Russian (3 units each). Prerequisite: course 6. Advanced grammar and reading.

102A-102B-102C. Advanced Grammar and Reading (3 units each). Prerequisite: course 101C or consent of instructor. Required for the M.A. (linguistics, literature). Advanced grammatical analysis; reading of difficult texts.

107A-107B-108A-108B-109A-109B. Russian for Social Scientists (2 to 12 units). Lecture, one hour (per each two units); discussion, one hour (per each two units). Prerequisite: course 3 or equivalent. Reading, oral practice, and translation of the Russian that is relevant for students of social sciences. May be repeated for credit.

111A-111B-111C. Conversation and Composition (1 unit each). Recitation, two hours. Prerequisites: courses 6 and 10C, or consent of instructor. Required of majors. Conversation and composition. Conducted in Russian.

112A-112B-112C. Advanced Conversation and Composition (1 unit each). Recitation, two hours. Prerequisite: course 111C or consent of instructor. Required for the M.A. (linguistics, literature). Advanced conversation and composition. Conducted in Russian.

Linguistics Courses

121. Russian Phonology. Lecture, three hours. Prerequisite: course 6. Introduction to transliteration and transcription, articulatory phonetics, phonemics.

122. Russian Morphology. Lecture, three hours. Prerequisite: course 121. Introduction to morphophonemics, inflection, derivation.

123. Historical Commentary on Modern Russian. Lecture, three hours. Prerequisites: courses 121, 122. Historical explanation of the phonological and morphological anomalies of modern Russian.

Literature and Civilization Courses

99. Introduction to Russian Civilization. Lecture, three hours. An introductory survey of the social and cultural institutions of the Russian people and their historical background.

100. The Russian Novel in Translation. Lecture, three hours. Designed for nonmajors. A study of major works by the great 19th-century Russian novelists.

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. The following writers are alternately discussed: **124A.** Pushkin; **124B.** Gogol; **124C.** Turgenev; **124D.** Dostoevsky; **124E.** Tolstoy; **124F.** Chekhov.

125. The Russian Novel in its European Setting. Lecture, three hours. Prerequisite: upper division standing. Emphasis on 19th- and 20th-century novelists. Lectures and readings in English.

126. Survey of Russian Drama. Lecture, three hours. Prerequisite: upper division standing. Major Russian plays from the 18th to 20th century. Lectures and readings in English.

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. Major poetical works. Lectures and readings in Russian.

140A-140D. Russian Prose. Lecture, three hours. Prerequisite: course 6. Lectures and readings in Russian. **140A.** Major Writers from Karamzin to Turgenev; **140B.** Dostoevsky to Gorky; **140C.** Contemporary Writers; **140D.** Advanced Readings in Russian Prose.

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. A general introduction to Russian folklore, including a survey of genres and related folkloric phenomena. Lectures and readings in English.

180. Russian Art. Lecture, three hours. Recommended prerequisites: Art History 51, 54, 57. Knowledge of Russian is not required. A survey of the art and architecture of Russia to the present day. Emphasis on the development of Russian art in its religious, social, and political context.

193. Seminar in 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

203. Higher Course in Russian (2 units). Prerequisite: course 102C. Two quarters 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 the History of the Russian Literary Language. Lecture, three hours. Prerequisites: course 123, Slavic 99. Required for the M.A. (linguistics, literature). Survey of literary Russian in its cultural and historical setting.

210. Readings in Russian Historical Texts. Lecture, three hours. Prerequisite: Slavic 201 or consent of instructor. Readings in early Russian chronicles and other documents of historical interest.

221. Advanced Russian Phonology (2 units). Prerequisites: courses 102A-102B-102C, 121 (may be taken concurrently). Required for the M.A. (linguistics). Advanced study and analysis of problems in Russian phonology.

222. Advanced Russian Morphology (2 units). Prerequisites: courses 102A-102B-102C, 122 (may be taken concurrently). Required for the M.A. (linguistics). Advanced study and analysis of problems in Russian inflection and derivation.

225. Russian Syntax. Lecture, three hours. Prerequisites or corequisites: courses 102A-102B-102C. Required for the M.A. (linguistics). Survey of Russian syntax and grammatical categories.

241. Topics in Russian Phonology. Lecture, three hours. Prerequisite: course 221. Selected topics in Russian phonology.

242. Topics in Russian Morphology. Lecture, three hours. Prerequisite: course 222. 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. The History of the Russian Literary Language. Lecture, three hours. Prerequisites: course 204, Slavic 201. The evolution of literary Russian from the 11th to 20th century. Lectures and analysis of texts.

265. Advanced Russian Syntax. Lecture, three hours. Prerequisite: course 225. Traditional and generative approaches to Russian syntax.

266. Russian Lexicology. Lecture, three hours. Examination of the formal and semantic structure of the Russian lexicon.

Literature and Civilization

211. 18th-Century Russian Literature. Lecture, three hours. Required for the M.A. (literature). Lectures and readings in major and secondary writers. Analysis of selected literary works.

212. 19th-Century Russian Literature. Lecture, three hours. Required for the M.A. (literature). Lectures and readings in major and secondary writers.

213. 20th-Century Russian Literature. Lecture, three hours. Required for the M.A. (literature). Lectures and readings in major and secondary writers.

251A-251B. Old Russian Literature. Lecture, three hours. **251A.** Required for the Ph.D. (literature). Survey of Old Russian literature from the beginnings through the Kievan and the Muscovite periods up to the end of the 17th century. **251B.** Detailed discussion of specific writers, periods, or genres.

270. Russian Poetics. Lecture, three hours. Prerequisites: courses 130A-130B-130C. Introduction to the technical study of Russian poetics and versification, with attention to metrics, stanza forms, rhyme, and the development of various verse types from the 18th into the 20th century.

290. Seminar in 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 in Old Russian Literature. Seminar, three hours. Prerequisite: course 251A. Selected topics from the 11th through the 17th century. May be repeated for credit with consent of instructor and graduate adviser.

291B. Seminar in 18th-Century Russian Literature. Seminar, three hours. Prerequisite: course 211. 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 in 19th-Century Russian Literature. Seminar, three hours. Prerequisite: course 212. 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 in 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 in Russian Literary Criticism. Seminar, three hours. Prerequisites: courses 211, 212, 213. Detailed study of a specific school of literary criticism, a single literary critic, or a 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 in Russian History and Culture. Reading and discussion on selected topics in the history of Russian Culture.

Serbo-Croatian

Upper Division Courses

103A-103B-103C. Elementary Serbo-Croatian. Recitation, five hours. Basic course 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. The Structure of Slovak. Lecture, three hours. Prerequisite: Slavic 202. Recommended: Slavic 222. Introduction to the 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 course in the Ukrainian language.

152. Ukrainian Literature. Lecture, three hours. A survey of writers, literary trends, and issues in Ukrainian literature from the late 18th century to the present. Special attention to the works of such major figures as I. Kotlyarevsky, T. Shevchenko, I. Franko, L. Ukrainka, and P. Tychyna. Lectures and readings in English.

Non-Slavic Languages of Eastern Europe

Lithuanian

Upper Division Courses

101A-101B-101C. Elementary Lithuanian. Recitation, five hours. Basic course in the Lithuanian language.

Romanian

Lower Division Course

99. Introduction to Romanian Civilization. Lecture, three hours. An introductory survey of the social and cultural institutions of the Romanian people and their historical background.

Upper Division Courses

101A-101B-101C. Elementary Romanian. Recitation, five hours. Basic course in the Romanian language.

152. Survey of Romanian Literature. Lecture, three hours. Lectures and readings in English. A survey of Romanian literature from the Middle Ages to the present.

Graduate Course

201. Romanian as a Romance Language. Lecture, three hours. A survey of the structure and development of the Romanian language, with special emphasis on the relationship of Romanian to other members of the Romance group.

Related Courses in Other Departments

Dance 74B, 184B; **Economics** 182; **Geography** 184; **Linguistics** 100, 103, 110, 120A, 120B, M150, as well as several of the graduate courses in linguistics; **Music** 81C, 142A-142B; **Political Science** 128A-128B, 156, 157.

Social Sciences

3232 Campbell Hall, (213) 825-2974

Professors

Lucie Cheng, Ph.D. *(Sociology), Coordinator*
Harry H.L. Kitano, Ph.D. *(Social Welfare)*
Claudia Mitchell-Kernan, Ph.D. *(Anthropology)*
Gary B. Nash, Ph.D. *(History)*
Amado M. Padilla, Ph.D. *(Psychology)*
Alexander P. Saxton, Ph.D. *(History)*
David O. Sears, Ph.D. *(Political Science, Psychology)*

Associate Professors

Charlotte A. Heth, Ph.D. *(Music)*
Kenneth R. Lincoln, Ph.D. *(English)*
Robert A. Nakamura, M.F.A. *(Theater, Film, and Television)*
Melvin Oliver, Ph.D. *(Sociology), Coordinator*
Raymund A. Paredes, Ph.D. *(English)*
Jeffrey Prager, Ph.D. *(Sociology)*
Raymond A. Rocco, Ph.D. *(Political Science)*
Richard A. Yarborough, Ph.D. *(English)*

Assistant Professors

Duane Champagne, Ph.D. *(Sociology)*
King-Kok Cheung, Ph.D. *(English)*
Jacqueline C. DjeDje, Ph.D. *(Music)*
Halford H. Fairchild, Ph.D. *(Psychology)*
Rebecca Morales, Ph.D. *(Architecture and Urban Planning)*
Paul Ong, Ph.D. *(Architecture and Urban Planning)*

Visiting Lecturers

Steven J. Loza, Ph.D. *(Music)*
Nora Yeh, Ph.D. in Music

There is no major in social sciences; however, the following undergraduate course is offered for interested students.

Lower Division Course

20. Racial Minorities in the United States. (Formerly numbered Afro-American Studies M20, American Indian Studies M20, Asian American Studies M20, Chicano Studies M20.) Lecture, three hours; discussion, one hour. A multidisciplinary examination of the 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.

Sociology

264 Haines Hall, (213) 825-1313

Professors

Jeffrey Alexander, Ph.D.
Rodolfo Alvarez, Ph.D.
Judith Blake, Ph.D.
Phillip Bonacich, Ph.D., *Chair*
Lucie Cheng, Ph.D.
Burton R. Clark, Ph.D.
Robert M. Emerson, Ph.D.
Howard E. Freeman, Ph.D.
Harold Garfinkel, Ph.D.
Oscar Grusky, Ph.D.
Harry H. L. Kitano, Ph.D.
Gene N. Levine, Ph.D.
Ivan H. Light, Ph.D.
Valerie K. Oppenheimer, Ph.D.
Georges Sabagh, Ph.D.
Emanuel A. Schegloff, Ph.D.
Melvin Seeman, Ph.D.
Edwin S. Shneidman, Ph.D.
Gerald H. Shure, Ph.D.
Warren D. TenHouten, Ph.D.
Donald J. Treiman, Ph.D.
Ralph H. Turner, Ph.D.
Maurice Zeitlin, Ph.D.
C. Wayne Gordon, Ph.D., *Emeritus*
Leo J. Kuper, Ph.D., *Emeritus*

Associate Professors

Kenneth D. Bailey, Ph.D.
Michael S. Goldstein, Ph.D.
John E. Horton, Ph.D.
Jack Katz, Ph.D.
David E. López, Ph.D.
David D. McFarland, Ph.D.
Melvin Oliver, Ph.D.
David O'Shea, Ph.D.
Melvin Pollner, Ph.D.
Jeffrey Prager, Ph.D.
Jerome Rabow, Ph.D.
William G. Roy, Ph.D.
Samuel J. Surace, Ph.D.
Julia C. Wrigley, Ph.D.
Lynne G. Zucker, Ph.D.

Assistant Professors

Duane Champagne, Ph.D.
Clarence Lo, Ph.D.
Kazuo Yamaguchi, Ph.D.

Adjunct Assistant Professors

Bonnie Berry, Ph.D.
Lee Clarke, Ph.D.
Christine Grella, Ph.D.
Margaret Spanish, 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: Sociology 1, 18 (or Mathematics 50, Psychology 41, Economics 40, or Public Health 100A), one course from Group A (Mathematics 2, 3A), one course from Group B (Philosophy 8, 9, 31), one course from Group C

(Anthropology 5, 6, 22, Economics, 1, 2, Geography 3, History 1A, 1B, 1C, Political Science 1, Psychology 10).

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, not including former course 101. The 10 courses (40 units) must include the following:

(1) Sociology 109 and 112 or 113. These courses, devoted to the systematic exploration of sociological methods and theories, should be completed as early as possible in your junior year.

(2) Four upper division courses as required by one of the specialized "Concentrations for the Major" listed below.

(3) Any four additional upper division sociology courses.

(4) Four upper division allied field courses (16 units) in other departments to complete the major. The allied fields are anthropology, economics, geography, history, political science, and psychology.

(5) English 100W.

Concentrations for the Major

By the end of the junior year and no later than the beginning of the senior year, you are required to declare your specific concentration by filing a statement with the undergraduate counselor. The purpose of the concentration requirement is to expose you to systematic, in-depth work within a specific area of sociology. Completion of a concentration requires four upper division sociology courses. You must take a concentration's required course (if any) before declaring that concentration. You must select one of the following concentrations and meet its course requirements:

(1) *Comparative and Historical Sociology*

Required: 138
Two of the following: 120, 125, 126, 140, 141
One of the following: 130, 131, 132, 133, 134, 135, 136, 137

(2) *Organizations*

Required: 121
Three of the following: 120, 123, 128, 140, 141, 147, 152

(3) *Political Sociology*

Required: 140
Three of the following: 114, 120, 124, 136, M143, 147, 150

(4) *Quantitative Sociology*

Consult the faculty adviser for premajor requirements for this concentration.
Required: 116
Three of the following: 123, 126, 152, 154
Recommended: Mathematics 152A-152B instead of Sociology 18 on the preparation

(5) *Race and Ethnicity*

Required: 124
Two of the following: 120, 123, 125, 151, 155
One of the following: 130, 131, 132, 133, 134, 135, 136, 137

(6) *Social Change and Modern Society*

Required: 120
Two of the following: 123, 140, 150
One of the following: 124, 125, 136, 141

(7) *Social Demography*

Required: 126
Three of the following: 116, 123, 127, 132, 160

(8) *Social Organization and Language, Thought, and Experience*
Four of the following: 117, C144A, C144B, 146, 148, 149, 153, 157, 159

(9) *Social Psychology*

Required: 154
Three of the following: 115, 150, 151, 152, 153, 155, 156

(10) *Social Stratification*

Required: 123
Three of the following: 114, 116, 124, 128, 136, 140, 155, 160

(11) *Social Policies and Social Programs*

Required: 110, 129
One of the following: 120, 121, 124, 136
One of the following: M143, 146, 147, 157, 161, 162

A psychology course taken to fulfill the breadth requirement cannot also be used for the allied field requirement. 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 109, 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, (3) completing two courses from Sociology 9, 116, 118. You graduate with a bachelor's degree in sociology and a specialization in computing.

Honors Program

The honors program in sociology provides an opportunity for outstanding students to undertake an independent year-long research project under the guidance of a faculty member. The project culminates with an honors thesis or paper. Students intending to obtain advanced degrees will find this program especially useful. If you are selected, you enroll in Sociology 199HA-199HB-199HC in your senior year. These courses may be applied toward the 10 upper division courses required of all sociology majors. After completing the program, you graduate either with departmental honors or highest honors.

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 quarter 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 January 15. Appli-

cation forms and more detailed information are available from the Graduate Affairs Assistant, Department of Sociology, 254C Haines Hall, UCLA, Los Angeles, CA 90024.

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 quarter of residence. During the first year of graduate study, and no later than the first quarter of the second year, you are expected to form a two-person master's committee to help you prepare the master's paper.

In the quarter 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) **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.

(2) **Macrosociology:** Political sociology, economy and society, historical and comparative sociology, macrosociological theory, and comparative stratification.

(3) **Methods and Models:** Survey research methods, methods of applied and evaluation research, formal demography, advanced social statistics, and mathematical sociology.

(4) **Social Organization and Institutions:** Social demography, stratification, and mobility, work and occupations; social change and class analysis; complex/formal organizations; crime, deviance, and social control; sociologies of education and cognitive development; sociologies of knowledge, science, and technology; mass media and mass communication; medical sociology; biosociology; social and ethnic communities; intergroup relations; urban studies.

(5) **Social Psychology:** Attitudes and social structure, collective behavior, socialization, social interaction and small group behavior, and organizational social psychology.

Foreign Language Requirement

Master's Degree: There is no foreign language requirement for the master's degree.

Ph.D. Degree: The foreign language requirement for the Ph.D. is one language or a substitute program approved by the executive committee. Students who plan to study toward the Ph.D. degree should complete the foreign language requirement as early as possible, so as to make use of foreign language sociological publications throughout graduate study. In any case, the foreign language requirement must be fulfilled before the doctoral committee is nominated and the oral examination is taken. Reading knowledge of one language, as demonstrated either by acceptable performance on a standardized test or by completing level five of that language (or the equivalent), with at least a grade of C, is required. You must submit your selected language to your area governing committee for approval.

With the approval of the department, an international student may offer English as a foreign language if the native language is other than English. Proficiency in English is evaluated by the level of performance on the UCLA entrance examination in English for international students, together with achievement in graduate work.

A second alternative is to study sources in an allied field such as history, political science, linguistics, psychology, economics, philosophy, or mathematics. You would be permitted to substitute for the language requirement a set of three upper division or graduate courses offered at UCLA and passed with a grade of at least B. Contact the department for further information and guidelines for language substitutions.

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-quarter graduate-level methodology sequence of which there are several alternatives (e.g., the survey methods course, the demographic methods course, etc.). The methodology series is presently numbered 211A through 218B.

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 218B, and the 289, 290, 292, 293, 294, and 295 series.

Because four of the five area programs require successful completion of Sociology 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 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 and for other requirements such as special papers.

(1) *Ethnomethodological, Phenomenological, and Observational Sociologies:* Sociology 222; at least three courses from 223, 229, 251, 252, 266, 267, 284; an additional methods sequence selected from courses 217A-217B, 218A-218B, or C244A/C244B (two of these sequences must be completed before the oral qualifying examination); courses 293A-293B-293C. If you plan to take one field examination in this area, you should take at least three additional courses significantly related to this field; if you plan to take two field examinations in this area, you should take six additional courses (courses 223, 229, 251, 252, 266, 267, and 284 may be applied toward this requirement).

(2) *Macrosociology:* Sociology 211A-211B, 228A-228B, 294A-294B-294C, and three relevant graduate courses in any department approved by the director and your adviser.

(3) *Methods and Models:* Sociology 232 and 295A-295B-295C.

Advanced Statistics Specialty: Courses in calculus, linear algebra, and mathematical statistics (preferably taken as an undergraduate) and a program of coursework and supervised individual study, selected in consultation with the area faculty, designed to provide suitable depth of coverage of an appropriate range of statistical techniques.

Applied Sociology and Evaluation Research Specialty: Sociology 210C, 280, and courses in calculus and linear algebra (preferably taken as an undergraduate).

Formal Demography Specialty: Sociology 210C, 213A-213B, 240, and courses in calculus and linear algebra (preferably taken as an undergraduate).

Mathematical Sociology Specialty: Sociology 281, courses equivalent to Mathematics 115A, and other mathematics courses that may be required for particular specialties.

Survey Research Method Specialty: Sociology 216A-216B and a graduate-level course in sampling, such as Public Health 201H or Management 215E.

(4) *Social Organization and Institutions:* Sociology 290A-290B-290C and a second methods sequence selected from courses 212A-212B, 213A-213B, 214A-214B, 215A-215B, 216A-216B, or 217A-217B.

(5) *Social Psychology:* Completion of an undergraduate program equivalent to at least two courses from Sociology 150 through 157 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 214A-214B, 215A-215B, 216A-216B, or 217A-217B.

Courses in the 500 series (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

By the end of your second year of study, 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 Ph.D.-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 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 quarter of residence at UCLA, and under no circumstances later than the third quarter 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 here 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 the performance on the field examination is satisfactory and the foreign language requirement has been fulfilled, you may nominate a doctoral committee and take the University Oral Qualifying Examination. You must prepare a two-page abstract of the dissertation proposal for distribution to the entire departmental faculty no later than one week before the 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. Not open for credit to students with credit for former course 101. Survey of the characteristics of social life, the processes of social interaction, and the tools of sociological investigation.

9. Computers and Social Change. Lecture, two hours; laboratory, three hours. The impact of technological change from computers and computing on people, jobs, business firms, industries, and educational and legal institutions. Whenever needed for an adequate understanding of those topics, the course also provides information on selected aspects of contemporary computers and the history of computing. In addition to reading assignments and lectures, the course involves direct experience in a computing laboratory. Mr. McFarland

18. Interpretation of Quantitative Data. Prerequisite or corequisite: course 1. Satisfies the statistics requirement for the major in sociology. Reading graphs and tables; statistical description using indices of central tendency, dispersion, and association; simple linear regression. Probability; the 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.

20. Fates and Forecasts. Lecture, two and one-half hours. The utility of trend and other data in making social forecasts for the year 2000, with emphasis on the United States and Japan. In addition, consideration of Mexico for contrast as an example of a developing country. Popular treatments of future social and technological possibilities. Class discussion on reading and lecture materials. Mr. Levine

31. Dilemmas of Third World Development. Lecture, three hours; discussion, one hour. An introduction to understanding the dilemmas of Third World social development and the prospects for progress in the future. Mr. Lopez, Mr. Zeitlin

Upper Division Courses

102A-102Z. Special Topics in Sociology. Prerequisite: upper division standing (some sections may require prior coursework or consent of instructor). A study of selected current topics of sociological interest. See *Schedule of Classes* for topics and instructors. May be repeated for credit and may be applied as elective units toward the sociology major.

M102A. Sex Roles and Society. (Formerly numbered 102A.) (Same as Women's Studies M102.) Lecture, three hours; discussion, one hour. Prerequisite: course 1 or Women's Studies 100 or consent of instructor. Consideration of sociological literature pertaining to the development and functions of sex roles in society from a critical perspective. Topics include socialization and gender norms, contemporary sex role strain, and the challenge to traditional notions of sex roles posed by feminist critique.

109. Introduction to Sociological Research Methods. A 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. Bailey, Mr. Freeman, Mr. TenHouten

110. Research Methods in Policy Analysis and Evaluation. Prerequisite: course 129 or consent of instructor. Recommended: course 109. Approaches for identifying and analyzing social problems and for the assessment of policies and interventions for their control and management. Mr. Freeman, Ms. Zucker

112. Development of Sociological Theory. A comparative survey of basic concepts and theories in sociology from 1850 to 1920; the codification of analytic schemes; a critical analysis of trends in theory construction. Mr. Alexander, Mr. Horton, Mr. López

113. Contemporary Sociological Theory. A critical examination of significant theoretical formulations from 1920 to the present; an analysis of the relation between theoretical development and current research emphasis. Mr. Alexander, Mr. Champagne, Mr. TenHouten

114. Marxist Sociology. The 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 the theory requirement for the major. Mr. Horton

115. Experimentation and Laboratory Methodology in Sociology. Prerequisites: course 18 or equivalent introductory statistics and introductory social psychology. Provides opportunities for students to participate as observers, subjects, and experimenters in a variety of laboratory simulations of social and political settings and to use a number of computer-supported techniques as aids in conducting, analyzing, and interpreting their experiences in these settings. Mr. Shure

116. Introduction to Mathematical Sociology. Prerequisites: course 18, Mathematics 2, 3A (a course whose content includes introductions to probability theory, matrix algebra, and differential and integral calculus), or equivalent. Mathematical treatments 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 the deductive and computational aspects of mathematics). Mr. McFarland

117. Field Research Methods. Lecture, two hours; discussion, one hour. Prerequisites: upper division standing, consent of instructor. Fieldwork and extensive field notes required. Theory and practice of field research, with particular emphasis on the interrelations between fieldwork role and substantive findings.
Mr. Emerson, Mr. Rabow

118. Statistical and Computer Methods for Social Research. Lecture, three hours; laboratory, one hour. Prerequisite: course 18. A 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

120. Social Change. A study of patterns of social change, resistance to change, and change-producing agencies and processes.
Mr. Alexander, Mr. Surace

121. Organizations and Society. Sociological analysis of organizations and their social environment. An introduction to basic theories, concepts, methods, and research on the behavior of organizations in society. Mr. Alvarez, Mr. Grusky, Mr. Surace

122. Mass Communications. Lecture, three hours. Fieldwork may be required. Development, functions, and organization of the mass media in industrialized societies; social theory and social research in mass communications; short-term effects of the media; the media and socialization; mass media and the shaping of public opinion; prospects for media in the Third World. Technological innovations and their effects on future social systems. Mr. Levine

123. Social Stratification. An analysis of American social structure in terms of evaluational differentiation. Topics include criteria for differentiation, bases for evaluation, types of stratification, the composition of strata and status systems, mobility, consequences of stratification, and problems of methodology.
Mr. López, Mr. McFarland, Mr. Yamaguchi

124. Ethnic and Status Groups. The characteristics of the "visible" ethnic groups (e.g., Japanese, Mexican, and black); their organization, acculturation, and differentiation. The development, operation, and effects of selective immigration and population mobility. The status of the chief minorities in the continental U.S., with comparative materials drawn from Jamaica, Hawaii, and other areas.
Mr. Alvarez, Mr. Kitano, Mr. Prager

125. Urban Sociology. Lecture, three hours. Description and analysis of urbanization and urbanism in the United States and the world.
Mr. Bailey, Mr. Light, Mr. Oliver

126. 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 the correlates of fertility, mortality, and migration.
Mr. Bailey, Ms. Oppenheimer, Mr. Sabagh

127. Sociology of Family Demographic and Economic Behavior. An examination of demographic behavior associated with the social organization of the family and its relationship to the society's economic system. American and European historical studies of family socioeconomic and demographic characteristics and behavior in the first half of course; the U.S. experience since the 1930s in the second half. Ms. Oppenheimer

128. Occupations and Professions. Description and analysis of representative occupations and professions, with emphasis on the contemporary United States.

129. Social Policies and Social Programs. Lecture, three hours; discussion, one hour. Prerequisites: junior standing and course 1, or consent of instructor. Analysis of problems of social disorganization, with emphasis on social structural explanations. Consideration of social policies and intervention strategies related to control and management of social problems. Mr. Freeman, Ms. Zucker

130. Social Processes in Africa. A course in comparative sociology. A study of selected processes in African societies, primarily in the fields of urban sociology, social structure, and social change, involving an interdisciplinary approach.

131. Latin American Societies. A descriptive survey of the major Latin American societies, emphasizing their historical backgrounds and their emergent characteristics, with special attention to the relations between rural and urban life.
Mr. López, Mr. Zeitlin

132. Population and Society in the Middle East. Prerequisites: upper division standing, consent of instructor. A survey of the Middle Eastern societies; their historic and environmental bases; the contemporary demographic and cultural situation.
Mr. Sabagh

133. Comparative Sociology of the Middle East. Prerequisites: upper division standing, consent of instructor. A review of the unity of Middle Eastern societies in Islam and their diversity exemplified by such nomadic peoples considered throughout.

134. 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

135. Comparative American Indian Societies. Lecture, three hours. Prerequisite: course 1. The 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

136. 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. Lo, Mr. Roy, Mr. Zeitlin

137. Comparative Studies of Jewish Communities in the U.S. and Abroad. The history, distribution, structure, and functioning of major Jewish communities, with particular focus on North America and Israel. Interrelationships and sources of conflict between Jews and Gentiles in Western countries. More generally, the economic and social integration of Diaspora Jewish communities. Fieldwork may be required. Mr. Levine

138. Comparative and Historical Sociology. Prerequisite: course 1. A survey of the central themes of comparative and historical studies in sociology. The various aspects of the development of modern society, including the development of nation-state, the emergence of capitalism, industrialization, and population growth. Variation in contemporary society, viewed from a variety of theoretical perspectives.
Mr. Champagne, Mr. Lo, Mr. Roy

139. 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. Mr. Yamaguchi

140. Political Sociology. The contributions of sociology to the study of politics, including the analysis of political aspects of social systems, the social context of action, and the social bases of power.
Mr. Prager, Mr. Roy, Mr. Zeitlin

141. Economy and Society. The sociology of economic life, with emphasis on principal economic institutions of the United States.
Mr. Light, Mr. Lo, Mr. Zeitlin

142. 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 the influence of the contemporary society on the family.

M143. Sociology of Education. (Same as Education M108.) Prerequisite: course 1. Study of social processes and interaction patterns in educational organizations; the relationship of such organizations to aspects of society, social class, and power; social relations within the school, college, and university; formal and informal groups, subcultures in educational systems; roles of teachers, students, and administrators.
Mr. O'Shea, Mr. Rabow, Ms. Wrigley

C144A. Conversational Structures I. (Formerly numbered 144A.) Lecture, three hours. An introduction to some of the structures which are employed in the organization of conversational interaction, such as turn-taking organization, the organization of repair, and some basic sequence structures with limited expansions. May be concurrently scheduled with course C244A. Mr. Schegloff

C144B. Conversational Structures II. (Formerly numbered 144B.) Lecture, three hours. Prerequisite: course C144A. A consideration of some of the more expanded sequence structures, story structures, topical sequences, and the overall structural organization of single conversations. May be concurrently scheduled with course C244B. Mr. Schegloff

145. Sociology of Deviant Behavior. An examination of the leading sociological approaches to the study of deviation and a general survey of the major types of deviation in American society.
Mr. Horton, Mr. Surace

146. Criminology. Theories of the genesis of crime; factors in the organization of criminal behavior from the points of view of the person and group; criminal behavior systems. Mr. Katz, Mr. Rabow

147. Control of Crime. Theories of punishment; methods of dealing with convicts; social organization of police, courts, prisons, probation, and parole. Fieldwork required. Mr. Emerson, Mr. Rabow

148. Normal Environments. Structural interpretation of the concerted production, management, and alteration of perceivedly normal interpersonal environments. Fieldwork required.
Mr. Garfinkel, Mr. Pollner

149. A 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 the programmatic problems of analytic sociology. Fieldwork required. Mr. Garfinkel, Mr. Pollner

150. 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. Seeman, Mr. Turner

151. Culture and Personality. Prerequisites: courses 1, 18, or equivalent, upper division standing. Theories of the relation of variations in personality to culture and group life, in primitive and modern societies, and the influence of social role on behavior.
Mr. Turner

152. Group Processes. Systematic study of the 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

153. Process and Socialization in the Family. Prerequisites: courses 1, 18, or equivalent, upper division standing. Examination of the processes of interaction, decision making, role differentiation, conflict, integration, and socialization within the family and their interrelations with society.

154. Social Psychology: Sociological Approaches. A survey of the contribution of sociologists to theory and research in social psychology, including theories of social control; conformity and deviation; reference groups; and interaction process.
Mr. Bonacich, Mr. Rabow, Ms. Zucker

155. Intergroup Conflict and Prejudice. A study of the 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; the effects of minority status on the individual; and the possibilities for attitude and behavior change.
Mr. Oliver, Mr. Seeman

156. Psychoanalytic Sociology. Prerequisites: courses 1, 18. Recommended: a course in theory (course 112 or 113) and in social psychology. Designed to review the 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

157. Sociology of Mental Illness. Analysis of the major sociological and social psychological models of madness. Study of the social processes involved in the production, recognition, labeling, and treatment of "mental illness."
Mr. Emerson, Mr. Goldstein, Mr. Pollner

M158. Death and Suicide: Psychological and Sociological Aspects. (Same as Psychology M163.) Lecture, three hours. Prerequisite: junior standing. The definition and taxonomy of death; the new permissiveness and taboos relating to death; the romanticization of death; the role of the individual in his own demise; the modes of death; development of ideas of death through the life span; ways in which ideas of death influence the conduct of lives; the impact of dying on the social structure surrounding the individual; preventive, interventive, and postventive practices in relation to death and suicide; partial death; megadeath; lethality; the psychological autopsy; the death of institutions and cultures. P/NP grading recommended (letter grading required if course is to be applied toward the psychology or sociology major).
Mr. Shneidman

159. The Sociology of Knowledge. Prerequisite: course 1 or equivalent. A study of the social production of modes of thought and forms of knowledge. The study of ways in which bodies of knowledge and cognitive styles are produced, used, and transformed in every day, organizational, and extraordinary contexts. Mr. Pollner, Mr. TenHouten

160. The Demography and Sociology of Women's Economic Roles. Prerequisites: courses 1 and 18 or Mathematics 50 or Psychology 41 or Economics 40 or Public Health 100A, or consent of instructor. A demographic and sociological analysis of the factors affecting women's economic roles in the world of work and the family. Topics include demographic determinants of women's socioeconomic roles, women's changing place in the occupational structure, men's and women's contribution to the socioeconomic status of the family, the socioeconomic position of women without men to support them, future trends, and social policy affecting women's status.
Ms. Oppenheimer, Mr. Treiman

161. The Social Organization of Psychiatric Treatment. Strongly recommended prerequisite: course 157. Review of current research and theory on psychiatric treatment processes and treatment organizations, including mental hospitals and community mental health organizations.
Mr. Emerson, Mr. Grusky

162 Sociology of Law. The political impact of court decisions; legalization of social relations in modern institutions; social movements toward equal justice; the judicial role; experience of participants in legal processes; common sense conceptions of justice.
Mr. Katz

163. Medical Sociology. Prerequisite: course 1 or consent of instructor. Provides majors in sociology and other social sciences, as well as students preparing for health science careers, with an understanding of health-seeking behavior and the interpersonal and organizational relations that are involved in the receipt and delivery of health services.
Mr. Goldstein

164. White-Collar Criminality. Lecture, three hours. Prerequisite: course 146 or consent of instructor. Theories of the genesis of crime applied to criminal behavior by business and political elites, including a history and evaluation of criminal law enforcement against white-collar illegalities. Mr. Katz

165. 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

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. A course of independent study designed for graduate or senior undergraduate students who (1) desire a more advanced or specialized treatment of an area covered in the 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 contract.

199HA-199HB-199HC. Special Study for Honors. Prerequisite: honors program standing:

199HA. Design of a research project to serve as the student's honors thesis. A research proposal, detailed bibliography, and regular meetings with the sponsoring faculty member required.

199HB. Continuation of work initiated in course 199HA. A series of progress reports are prepared in consultation with instructor.

199HC. Completion of the written report or honors thesis.

Graduate Courses

201A-201B. Proseminar in Sociology. Prerequisite: graduate standing. Designed primarily for graduate students in the first year of residence. A comprehensive survey of basic concepts and theories in the major fields of sociology. Mr. Alexander, Mr. López

202A-202B. Sociological Analysis. Lecture, two hours; discussion, one hour. Prerequisite: graduate standing. Required of first-year sociology graduate students. Consideration of a number of exemplary works in contemporary sociology in terms of the interplay of theory, method, and empirical substance to familiarize entering students with a broad range of sociological practice and to illuminate through critical reading and analysis how various kinds of sociological inquiry work. Course is team taught and mixes lectures and discussion. In Progress grading.
Mr. Alexander, Mr. Schegloff

203A. Social Survey Practicum. Lecture, one hour; discussion, one hour; laboratory, two hours. Prerequisite: graduate standing or consent of instructor. Training through practice in the basic techniques of survey research.

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.

210A-210B. Intermediate Quantitative Methods I, II. Prerequisite: course 18 or equivalent. An intermediate-level treatment of fundamentals of statistical theory and procedures: probability theory, basic distributions (normal, binomial, t, chi-square, F, etc.), their interrelations, and statistical procedures based on them; analysis of contingency tables; multiple and partial correlation and regression; analysis of variance and experimental designs; the general linear model; systems of equations. Additional special topics include use of computers; log-linear models; factor analysis, discriminant function analysis; scaling and measurement; sampling design; nonparametric techniques and measures; matrix algebra if used in coverage of listed topics. In Progress grading.
Mr. Bonacich, Mr. McFarland, Mr. TenHouten

210C. Intermediate Quantitative Methods III. Prerequisite: course 210B. Not required for the M.A. or Ph.D. degree. Additional and more advanced multivariate techniques of particular value to sociologists.
Mr. Bonacich, Mr. Yamaguchi

211A-211B. Comparative and Historical Methods:

211A. Strategies of Research and Conceptualization. Prerequisite: consent of instructor. Topics include relationship of theory and fact to the social sciences, the 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.

211B. Research Techniques. Prerequisite: course 211A. Topics include the problem of evidence, quantitative and qualitative data. Techniques of data analysis, including use of manuscript census, content analysis, collective biography, and secondary analysis.
Mr. Light, Mr. Lo, Mr. Prager, Mr. Roy

212A-212B. Marxist Methodology. Prerequisite: course 112 or consent of instructor. Practice in the dialectical method of attaining scientific knowledge about society as a process and mode of production. A critical examination of methodological issues and techniques and practical field research.
Mr. Horton

213A-213B. Techniques of Demographic and Ecological Analysis. Prerequisite: course 210A or equivalent. Procedures and techniques for the collection, evaluation, and analysis of demographic and ecological data; models of population and ecological structure and change; applications to the study of social structure and social change. Mr. Sabagh

214A-214B. The Measurement of Sociological Variables. Prerequisites: courses 210A-210B, consent of instructor. Theory and technique of measurement in sociology and social psychology; construction, application, and evaluation of measurement techniques, especially the forms of scaling. In Progress grading. Mr. TenHouten

215A-215B. Experimental Sociology. Prerequisites: course 210A or equivalent, consent of instructor. The basic fundamentals of the experimental method, particularly as it is used in social psychology. In Progress grading.
Mr. Grusky, Mr. Rabow, Mr. Shure

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. Levine, Mr. TenHouten, Mr. Treiman

217A-217B. Ethnographic Fieldwork. Prerequisite: consent of instructor. Theories and techniques of ethnographic fieldwork. The 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, Mr. Pollner

218A-218B. Ethnomethodological Methods. Prerequisite: consent of instructor. Examination of techniques used in ethnomethodological research, practice in the critical evaluation of research, and directed experience in the conduct of an extended investigation employing ethnomethodological procedures. In Progress grading. Mr. Garfinkel

220. Role Theory. Prerequisites: graduate standing, consent of instructor. A review of theories and research dealing with social roles, with special emphasis on roles in social interaction and in formation of the social self. Mr. Turner

221. Social Ecology. Prerequisites: courses 18, 126, or equivalent, and graduate standing, or consent of instructor. An examination of the various approaches to both microecology and macroecology, including classical and neoclassical ecology, social area analysis, sociocultural ecology, city-size distributions, effects of population density on animals and humans, proxemics, territoriality, and the effects of the 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, conversation-analytic, and related varieties of inquiry. Central themes such as the world of everyday life, the problem of rationality, rules/norms and tacit knowledge, the problem of social order, speaking and discourse, constitutive practices, and the production of ordinary interaction in the first part; guest presentations by affiliated faculty in the second part.

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 the topic of concern, with special concern for ambiguities and divergences both within and between the two approaches. When relevant, attention to the 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 the department in several subfields.

225A-225B. Demographic Perspectives on the Relationship of Family and Economic Systems. Prerequisites: courses 210A-210B or consent of instructor. An examination of the interrelationship of family and economic systems in societies at different levels of economic development, focusing particularly on the U.S. experience. Central to the course: (1) an 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 the relationship of family and economic systems over time. **225A.** Lectures and readings. **225B.** Individual research projects involving a term paper and classroom reports of results.
Ms. Oppenheimer

227. The Sociology of Knowledge. Prerequisite: graduate standing or consent of instructor. A survey of theories and research concerning social determinants of systems of knowledge and the role of intellectual and artistic elites in Western societies.
Mr. Horton

228A-228B. Critical Issues in Macrosociology. Seminar, three hours. Prerequisite: graduate standing. A 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.

229. Processes of Social Control. Prerequisite: graduate standing or consent of instructor. Current theory and research on social control processes. Specific topics include conceptual issues, informal social control mechanisms, the relation between informal and formal control systems, typification and practical concerns in the processing of social control cases, and problems of "rationality" in social control decision making. Mr. Emerson

230. Theories of Deviance. An examination of various sociological approaches to the study of deviant behavior, with emphasis on anomie theory as the major orientation today. Special attention to the problems of defining deviance and the articulation of sociological and psychological levels of explanation.
Mr. Emerson, Mr. Rabow, Mr. Surace

M231. The Structure of Occupations. (Same as Education M231.) Lecture, two hours; discussion, two hours. Shifts in the occupational structure of the United States, changing skill requirements for jobs, the effects of automation on work environments, and the role of formal and informal education in preparing people for occupations. Mr. O'Shea, Ms. Wrigley

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. An ongoing survey that employs Computer-Assisted Telephone Interviewing is available as a resource for the course. Mr. Shure

233. Foundations of Political Sociology. Lecture, three hours. Prerequisite: graduate standing or consent of instructor. A survey of the field of political sociology, oriented around critical themes in the major theoretical traditions and contemporary exemplars. Special attention to competing perspectives on power, the theory of the state, and the relationship of class structure to politics.
Mr. Lo, Mr. Prager, Mr. Roy

234. Sociology of Community Organization. Prerequisites: graduate standing, consent of instructor. A survey of recent and classical research and literature dealing with predominantly political institutions, the problem of order, and the organization of communal life in the village and the metropolis.

236. Social Change in the Middle East. An analysis of the sources, extent, and types of social change in the Middle East, with emphasis on the origin and consequences of industrialization and urbanization.
Mr. Sabagh

237. Social Stratification in the Middle East. Modes of social differentiation in traditional Middle Eastern societies, localism and tribalism, the counter influence of processes leading to the recurrent emergence of societies of large scale and their distinctive structural characteristics. Mr. Sabagh

238A-238B. Fieldwork in Minority Communities. Seminar, two hours. Prerequisites: graduate standing, consent of instructor. Designed to supply graduate students with conceptual and methodological skills for studying minority communities. Greater Los Angeles is the laboratory. Emphasis on both ethnographic and survey research techniques. In Progress grading. Mr. Levine

240. Mathematics of Population. Prerequisite: prior knowledge of matrices, calculus, and probability theory. Discrete and continuous deterministic and probabilistic models of the growth and composition of a one-sexed population classified by age, plus selected topics on more complicated population models.
Mr. McFarland

C244A. Conversational Structures I. Lecture, three hours; discussion, one hour. An introduction to some of the structures which are employed in the organization of conversational interaction, such as turn-taking organization, the organization of repair, and some basic sequence structures with limited expansions. May be concurrently scheduled with course C144A. Graduate students have additional assignments and/or meet as a group one additional hour each week. Mr. Schegloff

C244B. Conversational Structures II. Lecture, three hours; discussion, one hour. Prerequisite: course C244A. A consideration of some of the more expanded sequence structures, story structures, topical sequences, and the overall structural organization of single conversations. May be concurrently scheduled with course C144B. Graduate students have additional assignments and/or meet as a group one additional hour each week. Mr. Schegloff

245. Cultural Studies. Discussion, three hours. Prerequisite: consent of instructor. Allows graduate students to become familiar with the range of contemporary studies of culture. Taking as its assumption that symbolic patterns have relative autonomy vis-a-vis social structure and personality, it examines hermeneutical, structuralist, and functionalist versions of this general argument, proceeding subsequently to contemporary versions of "interpretive" techniques: structuralist, functionalist, Weberian, Durkheimian, and semiotic. Theory, method, and substantive empirical issues. Mr. Alexander

247. Neurosociology. Prerequisites: graduate standing, consent of instructor. Relations between aspects of social structure and higher cortical functions.
Mr. TenHouten

248. The Sociology of Cognitive Development. Prerequisite: graduate standing or consent of instructor. Analysis of ways in which mental processes are structured and organized by positions and practices in the social world, and by change and development in society. Mr. TenHouten

M249A. Sociocultural Aspects of Health and Illness: Health Professions. (Formerly numbered M249B.) (Same as Public Health M283F.) Lecture, three hours. Prerequisites: Public Health 182, three courses in psychology, sociology, or anthropology, or equivalent, consent of instructor. Sociological examination of the concepts "health" and "illness" and role of various health professionals, especially physicians. Attention to the meaning of professionalization and professional-client relationships within a range of organization settings. Mr. Goldstein

M249B. Sociocultural Aspects of Health and Illness: Health Behavior. (Formerly numbered M249C.) (Same as Public Health M283G.) Seminar, three hours. Prerequisites: Public Health 182, three courses in psychology, sociology, or anthropology, or equivalent, 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.
Mr. Garfinkel

252. Criminology. Mr. Katz, Mr. Rabow

253. Quantitative Methods in Sociology.
Mr. Bailey, Mr. Bonacich, Mr. Freeman

254. Sociology of Law. (Formerly numbered 254B.) Social control functions of law and legal institutions, with particular attention to the contrast between lawways of stateless and tribal societies and contemporary American legal processes and institutions, primarily those of criminal law.
Mr. Emerson, Mr. Katz, Mr. Prager

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 the history of the development of sociological theory.
Mr. Champagne

256. Demography. Mr. Bailey, Mr. Sabagh

258. Sociology of Religion.

259. Social Structure and Economic Change: Historical and Comparative Perspectives.
Ms. Cheng, Mr. Surace, 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. Mr. Levine, Mr. Seeman

M262. Selected Problems in Urban Sociology. (Same as Afro-American Studies M200C.) Seminar. Prerequisite: consent of instructor. Mr. Light, Mr. Oliver

263. Social Stratification. Mr. Treiman

264. Professions in the American Society. Ms. Oppenheimer

265. Problems in Organization Theory. Mr. Grusky, Ms. Zucker

266. Selected Problems in the Analysis of Conversation. Prerequisite: course C144A or consent of instructor. Mr. Schegloff

267. Selected Problems in Communication. Mr. Pollner, Mr. Schegloff

268. Selected Problems in Psychoanalytic Sociology. Discussion, three hours. Recommended prerequisite: at least one year of methods courses. Selected problems in the interpretation of sociology and psychoanalysis, which may be substantive (group development, socialization, culture, deviance, collective behavior) or methodological; the latter focuses on clinical fieldwork and experimental use of psychoanalytic and sociological techniques. Mr. Rabow

269. Collective Behavior. Mr. Turner

270. Selected Problems in Socialization. Mr. Turner

271. Ethnomethodology. Mr. Garfinkel

272. Topics in Political Sociology. Mr. Roy, Mr. Surace, Mr. Zeitlin

273. Attitudes and Social Structure. Mr. Seeman

274. Selected Problems in the Sociology of Africa. Prerequisites: graduate standing, consent of instructor. Selection of problems in the sociology of Africa from among the following fields: urbanization, racial and ethnic relations, national integration, and political change.

276. Selected Topics in the 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, the city and the countryside, minority nationalities, class struggle under socialism, etc.; (3) China and Japan: two models of development. Ms. Cheng

278. Selected Problems and Issues in Mass Media Research. Seminar, two hours. Prerequisites: graduate standing, consent of instructor. Foci include methodological problems (surveys, panel studies, content analysis); research on audiences; problems of comparative, international media research; exposure and socialization; social, psychological, and political effects of technological innovation. Mr. Levine

280. Seminar in Evaluation Research. Prerequisite: graduate standing. The technical and political aspects of implementing evaluation research studies. The role of evaluation research in social policy development, as well as procedures for undertaking process and impact evaluations. S/U or letter grading. Mr. Freeman

281. Selected Problems in Mathematical Sociology. Prerequisite: consent of instructor. An 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.

284. Topics in Mental Health and Illness. Prerequisites: course 157 or equivalent, graduate standing. Mr. Emerson, Mr. Grusky, Mr. Pollner

285A-285Z. Special Topics in Sociology. Seminar, three hours. Prerequisite: graduate standing. A seminar on selected current topics of sociological interest. See *Schedule of Classes* for topics and instructors. May be repeated for credit.

M287A-M287B. Population Policy and Fertility. (Same as Public Health M274A-M274B.) Lecture, three hours; discussion, one hour. Prerequisites: Public Health 100A, 112, 171A, 171B, or equivalent, graduate standing, consent of instructor. Course M287A is prerequisite to M287B. Analysis of research concerning major issues in population policy, with special emphasis on human fertility. Ms. Blake

M287C. Seminar in Population Policy and Fertility. (Same as Public Health M274C.) Seminar, three hours; discussion, one hour. Prerequisites: courses M287A-M287B or equivalent, graduate standing, consent of instructor. Review of current literature in population policy and fertility in conjunction with student research reports. May not be repeated for credit. Ms. Blake

289A-289B-289C. Social Psychology Seminar (2 units each). Lecture, one hour; discussion, one hour. Prerequisite: graduate standing. Required of students in the social psychology area program, but open to all graduate students in good standing. A forum for the presentation of advanced work in social psychology designed to develop an ability to understand, critically evaluate, and present research in fields relevant to the study of social psychology. May be repeated for credit. S/U grading.

290A-290B-290C. Social Organization and Institutions Seminar (2 units each). Lecture, one hour; discussion, one hour. Prerequisite: graduate standing. Required of students in the social organization and institutions area program, but open to all graduate students in good standing in the department. A seminar for the presentation of advanced work in social organization and institutions designed to contribute to the 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. Mr. Oliver

291. Moral Solidarity in Communities. Comparative analysis of social solidarity and the 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.

293A-293B-293C. Colloquium in Ethnomethodological, Phenomenological, and Observational Sociologies (2 units each). Prerequisites: courses C144A and C144B or 217A-217B or 218A-218B and 222, or consent of instructor. Participants present ongoing work and read and discuss exemplary past work of common interest. A continuing colloquium in which participation is expected of faculty and graduate students affiliated with the 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 Seminar in Macrosociology. Discussion, two hours. Prerequisite: consent of instructor. Required of students in the macrosociology area program. Training in the 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. Seminar in Methods and Models (2 units each). Ongoing seminar in the methods and models area program. A 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 are required to make a presentation each quarter they are enrolled for credit. S/U grading.

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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 a teaching assistant in the Sociology Department or equivalent. A special course for teaching assistants designed to deal with the 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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. 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 M.A. degree paper or Ph.D. qualifying examinations.

599. Research in Sociology for Ph.D. Candidates (4 to 12 units).

Spanish and Portuguese

5303 Rolfe Hall, (213) 825-1036

Professors

Shirley L. Arora, Ph.D. *(Spanish), Chair*
José R. Barcia, Lic. F. y L. *(Spanish)*
Rubén A. Benítez, Ph.D. *(Spanish)*
Joaquín Gimeno, Ph.D. *(Spanish)*
Claude L. Hulet, Ph.D. *(Spanish and Portuguese)*
Carroll B. Johnson, Ph.D. *(Spanish)*
Gerardo Luzuriaga, Ph.D. *(Spanish)*
C. B. Morris, Litt.D. *(Spanish)*
C. P. Otero, Ph.D. *(Spanish and Romance Linguistics)*
José Miguel Oviedo, Ph.D. *(Spanish)*
John A. Crow, Ph.D., *Emeritus*
Stanley L. Robe, Ph.D., *Emeritus*
Aníbal Sánchez-Reulet, Ph.D., *Emeritus*
Marion A. Zeitlin, Ph.D., *Emeritus*

Associate Professors

E. Mayone Dias, Ph.D. *(Portuguese)*
Susan Plann, Ph.D. *(Spanish)*
A. Carlos Quícoli, Ph.D. *(Portuguese and Romance Linguistics)*
Richard M. Reeve, Ph.D. *(Spanish)*
Enrique Rodríguez-Cepeda, Ph.D. *(Spanish)*
A. John Skirius, Ph.D. *(Spanish)*
Paul C. Smith, Ph.D. *(Spanish)*

Assistant Professor

Guillermo Hernández, Ph.D. *(Spanish)*

Lecturers

José M. Cruz-Salvadores, M.A. *(Spanish)*
George L. Voyt, J.D. *(Spanish)*

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: the B.A. in Spanish (Plan A), the B.A. in Spanish and Linguistics (Plan B), the B.A. in Portuguese, and the B.A. in Spanish and Portuguese, as well as to prepare students for its three graduate programs: the M.A. in Spanish, the M.A. in Portuguese, and the Ph.D. in Hispanic Languages and Literatures. The courses are also functionally supportive of such interdepartmental programs as the Teaching Credential in Spanish, the B.A. and M.A. programs in Latin American Studies, the M.A. program in Folklore and Mythology, and the 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 who have taken Spanish elsewhere and wish to enroll in UCLA Spanish classes for the first time must take the placement test given each quarter during the week before classes begin. Consult the *Schedule of Classes.*

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, 105A, 105B, 119A, 119B, 120A-120B, 136A-136B, and five elective courses in the department (one in Spanish literature, one in Spanish-American literature, and three others not including courses 160A, 160B, 160C).

The Major, Plan B (Spanish and Linguistics)

Required: Completion of six quarters of study in one other foreign language or three quarters 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, 105A, 105B, 115, M118A, M118B, Linguistics 100, 103, 110, 120A, 120B, and three electives in Spanish, at least one of which must be in literature.

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, M44, 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.

Portuguese and Linguistics Concentration

Required: Completion of six quarters of study in one other foreign language or three quarters in each of two other foreign languages, in addition to the preparation for the major courses listed above. 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, M44, 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 105A 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 a 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) Aptitude 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, 5303 Rolfe Hall, UCLA, Los Angeles, CA 90024.

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 Educational Testing Service (ETS) language examination with a score of 500 or better, (2) passing the University reading examination in one of these languages when no ETS examination 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): Spanish M200, one graduate course in literature offered by the department, and nine 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. One additional course must be selected from an area outside your major and minor fields.

Plan B (Literature): Spanish M200, one course from 202 through 209, and nine 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 beginnings to 1700; Spanish literature from 1700 to the present; Spanish-American literature from its beginnings to 1900; Spanish-American literature from 1900 to the present. One additional course must be selected from each of the two areas outside your major and minor fields.

Plan C (Linguistics and Literature): Spanish M200 and 10 elective graduate courses, five in literature and five in linguistics, are required. The five literature courses are to be selected from three of the fields specified in Plan B, two courses from each of two areas and one from another. 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 quarter 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 Educational Testing Service (ETS) language examination with a score of 500 or better, (2) passing the University reading examination in one of these languages when no ETS examination is available, or (3) passing at least a level three course at UCLA.

Course Requirements

Portuguese M200, M201, 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 quarter 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) Aptitude 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; (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) diachronic 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 Educational Testing Service (ETS) language examination with a score of 500 or better, (2) passing the University reading examination in the language when no ETS examination 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 quarter of graduate study.

Course Requirements

After the B.A., a minimum of 20 graduate courses is required. Spanish or Portuguese M201 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 the 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; (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 quarters after receiving the B.A. and six quarters 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.

1. Elementary Spanish. Discussion, five hours; laboratory, one hour. Not open for credit to students who have completed two years of high school Spanish or equivalent with grades of C or better. Students are, however, credited with four units toward the minimum progress requirement. Course is equivalent to the first year of high school Spanish.

1G. Reading Course for Graduate Students. Lecture, three hours. Knowledge of Spanish is 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 the placement test. Not open for credit to students who have completed two years of high school Spanish or equivalent. Students are, however, credited with four units toward the minimum progress requirement.

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 the placement test. The main grammatical topics include relative clauses; direct vs. indirect speech; imperatives; impersonal constructions; subjunctive: present, imperfect; idioms. Vocabulary of about 400 items and idioms dealing with everyday experience and some selected readings of good authors.

4. Intermediate Spanish. Discussion, five hours; laboratory, one hour. Prerequisite: course 3 or equivalent as determined by the placement test. Grammar review. Also, conditional; imperative and conditional; indicative vs. subjunctive; past perfect of subjunctive; infinitive. Vocabulary of about 400 items and idioms dealing with everyday experience and some literary pieces.

5. Intermediate Spanish. Discussion, five hours; laboratory, one hour. Prerequisite: course 4 or equivalent as determined by the placement test.

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 the building of vocabulary and the attainment of a high degree of comprehension in preparation for the courses in literature.

26. Composition for Spanish Speakers. Lecture, three hours. Prerequisites: course 5 or equivalent, consent of instructor. Practice in the reading and writing of Spanish for students with oral proficiency in Spanish (in lieu of Spanish 25).

M35. Spanish, Portuguese, and the Nature of Language. (Same as Portuguese M35.) Lecture, three hours. An introduction to language study within the context of Romance languages, focusing on Spanish and Portuguese. The nature of language: its structure, its diversity, its evolution, its social and cultural settings, its literary uses. The 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. Highlights of the civilization of Spain and Portugal, with emphasis on their artistic, economic, social, and historical development as background for upper division courses. Conducted in English. Mr. Cruz-Salvadores

M44. Civilization of Spanish America and Brazil. (Same as Portuguese M44.) Required of majors. Highlights of the civilization of Spanish America and Brazil, with emphasis on their artistic, economic, social, and historical development as background for upper division courses. Conducted in English.
Mr. Reeve, Mr. Skirius

Upper Division Courses

Prerequisite to all upper division courses except Spanish 160A-160B-160C is Spanish 25 or equivalent as determined by the placement test.

100A. Introduction to the Study of Spanish Grammar: Phonology and Morphology. (Formerly numbered 100.) Lecture, three hours. Prerequisite: course M35. Analysis of the phonemic and morphological systems of Spanish. Ms. Plann

100B. Introduction to the Study of Spanish Grammar: Syntax. (Formerly numbered 103.) Lecture, three hours. Prerequisite: course M35. A study of the syntactical systems of Spanish.
Mr. Otero, Ms. Plann

105A. Intermediate Composition. (Formerly numbered 105.) Lecture, three hours. Practice in writing Spanish with appropriate vocabulary, syntactical structures, and stylistic patterns.

105B. Advanced Composition. (Formerly numbered 109.) Lecture, three hours. Practice in writing Spanish with appropriate vocabulary, syntactical structures, and stylistic patterns.

107. The Spanish of Southern California. (Formerly numbered 117.) Lecture, three hours. Prerequisites: courses M35, 100A, and 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 the major linguistic problems faced by the teacher of Spanish.
Ms. Plann

M118A. The History of Portuguese and Spanish: Phonology. (Formerly numbered 118A.) (Same as Portuguese M118A.) Lecture, three hours. Prerequisites: courses M35, 100A. Major features of the development of the Portuguese and Spanish languages from their origins in Vulgar Latin to modern times. Ms. Plann, Mr. Quícoli, Mr. Smith

M118B. The History of Portuguese and Spanish: Morphology and Syntax. (Formerly numbered 118B.) (Same as Portuguese M118B.) Lecture, three hours. Prerequisites: courses M35, 100B. Major features of the development of the Portuguese and Spanish languages from their origins in Vulgar Latin to modern times. Mr. Otero, Ms. Plann, Mr. Quícoli

119A. Introduction to the Study of Literature: Prose. (Formerly numbered 119.) Lecture, three hours. An introduction to the study of literary devices, figures of speech, and distinctive stylistic features in the prose literature of Spain and Spanish America, particularly in the novel and essay.

119B. Introduction to the Study of Literature: Poetry and Drama. (Formerly numbered 119.) Lecture, three hours. An introduction to the study of literary devices, figures of speech, versification, and distinctive stylistic features in the poetry and drama of Spain and Spanish America.

120A-120B. Survey of Spanish Literature. Lecture, three hours. An introduction to the principle periods, currents, and authors of Spanish literature.
Mr. Gimeno, Mr. Johnson, Mr. Rodríguez-Cepeda

122. Medieval Literature: Prose. Lecture, three hours. Recommended prerequisite: course 120A. A study of the main genres through representative works. Mr. Gimeno

123. Medieval Literature: Poetry. (Formerly numbered 122.) Lecture, three hours. Recommended prerequisite: course 120A. A study of the main genres through representative works. Mr. Gimeno

124. The Golden Age: Poetry and Drama. Lecture, three hours. Recommended prerequisite: course 120A. A study, through representative works, of the Golden Age poetry and drama.
Mr. Johnson, Mr. Rodríguez-Cepeda

127. The Golden Age: *Don Quijote.* Lecture, three hours. Recommended prerequisite: course 120A. The 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 prerequisite: course 120B. A study, through representative works, of the 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 prerequisite: course 120B. The development of the main trends of Spanish literature from 1850 to 1898.
Mr. Benítez, Mr. Smith

132. 20th-Century Spanish Prose. (Formerly numbered 132B.) Lecture, three hours. Recommended prerequisite: course 120B. A study of several representative works of Spanish prose literature since 1898. Mr. Morris

133. 20th-Century Spanish Poetry and Drama. (Formerly numbered 132A.) Lecture, three hours. Recommended prerequisite: course 120B. A study of several representative works of Spanish poetry and drama since 1898. Mr. Morris

136A-136B. Survey of Spanish-American Literature. (Formerly numbered 121A-121B.) Lecture, three hours. An introduction to the principal periods, currents, and authors of Spanish-American literature.
Ms. Arora, Mr. Luzuriaga, Mr. Oviedo, Mr. Reeve, Mr. Skirius

137. The Literature of Colonial Spanish America. Lecture, three hours. Recommended prerequisite: course 136A. A study of the most important genres and authors from the Conquest to 1810.
Ms. Arora, Mr. Oviedo

139. Romanticism and Realism in Spanish-American Literature. Lecture, three hours. Recommended prerequisite: course 136A. A study, through representative literary works, of the most important currents of thought and literary trends from 1810 to 1880.
Mr. Luzuriaga, Mr. Oviedo, Mr. Reeve, Mr. Skirius

140. *Modernismo.* Lecture, three hours. Recommended prerequisite: course 136A. A study, through representative works, of the principal characteristics of *modernismo* in Spanish-American literature.
Mr. Luzuriaga

142. 20th-Century Spanish-American Literature: Fiction and the Essay. (Formerly numbered 142B.) Lecture, three hours. Recommended prerequisite: course 136B. A study, through representative novels, short stories, and essays, of Spanish-American prose literature since 1910.
Mr. Luzuriaga, Mr. Reeve, Mr. Skirius

143. 20th-Century Spanish-American Literature: Poetry and Drama. (Formerly numbered 142A.) Lecture, three hours. Recommended prerequisite: course 136B. A study of the principal poets, dramatists, and dramatic movements in Spanish-American literature since 1910. Mr. Reeve, Mr. Skirius

144. Mexican Literature. (Formerly numbered 141.) Lecture, three hours. Recommended prerequisite: course 136B. A study of the major movements and authors of Mexican literature.
Mr. Reeve, Mr. Skirius

M145. Introduction to Chicano Literature. (Same as Chicano Studies M145.) Lecture, three hours. Prerequisite: course 25 or 26. Recommended: course 136B. Introduction to texts representative of the Chicano literary heritage. A 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 of the 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 the characteristics and development of the Chicano literary corpus. Mr. Hernández

M149. Folk Literature of the Hispanic World. (Same as Folklore M149.) Lecture, three hours. A study of the history and present dissemination of the principal forms of folk literature throughout the Hispanic countries. Ms. Arora

160A-160B-160C. Hispanic Literatures in Translation. Lecture, three hours. Class readings and analysis of selected works in translation. Classroom discussion, papers, and examinations in English:

160A. Spain and Portugal.

160B. Spanish America and Brazil.

160C. *Don Quijote* in English Translation. Class reading and analysis of Cervantes' *Don Quijote.*
Mr. Johnson

161. Film and Literature of the Spanish-Speaking World. Lecture, three hours. A topical analysis (conducted in English) of the main literary and historical themes of Hispanic culture through films and literary texts. Course 197 may not be taken concurrently for credit. Ms. Morris

170A. Senior Honors Seminar: Topics in Spanish Literature. Lecture, three hours. Prerequisite: senior Spanish major with a 3.5 GPA in the major. Directed research on topics within the 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 a 3.5 GPA in the major. Directed research on topics within the 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 a 3.5 GPA in the major. Directed research on topics within the 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. A variable topics course with readings, discussions, and papers; consult the *Schedule of Classes* or department counselor for topic to be offered in a specific quarter.

197A. Studies in Hispanic Culture and Civilization. Lecture, three hours. Required of students preparing for a California state teaching credential in Spanish. An 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

M201. Literary Theory and Criticism. (Same as Portuguese M201.) Lecture, three hours. Definition, discussion, and application of the main currents of contemporary literary theory and criticism.
Mr. Benítez, Mr. Otero

202. Phonology and Morphology. (Formerly numbered 206.) Lecture, three hours. The phonological and morphological systems of Spanish and their interaction. Mr. Otero, Ms. Plann

204A-204B. Generative Grammar. Lecture, three hours. Prerequisite: consent of instructor. Course 204A or consent of instructor is prerequisite to 204B. A generative approach to the Spanish language, with some consideration of the bearing of syntax, semiology, and phonology on style, metaphor, and meter.
Mr. Otero

M205A-M205B. The Development of the Portuguese and Spanish Languages. (Formerly numbered M203A-M203B.) (Same as Portuguese M205A-M205B.) Lecture, three hours. Intensive study of the historical development of the Portuguese and Spanish languages from their origin in spoken Latin.
Mr. Otero, Mr. Smith

209. Dialectology. Lecture, three hours. The major dialect areas of peninsular and American Spanish, with the distinguishing features of each. Influence and contribution of cultural and historical features, including indigenous languages, to their formation.

221. Medieval Lyric Poetry. (Formerly numbered 222.) Lecture, three hours. Readings of and lectures on Spanish lyric poetry from the beginning to 1500.
Mr. Gimeno

222. Medieval Epic and Narrative Poetry. (Not the same as course 222 prior to Fall Quarter 1984.) 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 historial writings. Mr. Johnson

227. Cervantes. Lecture, three hours. Readings of and lectures on the 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. (Formerly numbered 230.) Lecture, three hours. Readings of and lectures on representative works of the period. Mr. Benítez

230. Realism and Naturalism. (Formerly numbered 231.) 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. An 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. Morris

233. Spanish Prose Literature after the Civil War. (Formerly numbered 235.) Lecture, three hours. Readings of and lectures on representative essays, novels, and short stories of the period. 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. (Formerly numbered 233 and 234.) 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, Mr. Oviedo

239. Romanticism and Realism in Spanish-American Literature. Lecture, three hours. Intensive study of Romanticism and realism in Spanish-American literature. Mr. Oviedo, Mr. Skirius

240. Major Currents in Modern Spanish-American Literature. Lecture, three hours. A study of principal trends in modern Spanish-American literature, particularly *naturalismo* and *modernismo*. Mr. Luzuriaga

241A-241B. Contemporary Spanish-American Short Story. (Formerly numbered 244.) Lecture, three hours. A study of the important short story writers from modernism to the present. Mr. Oviedo, Mr. Reeve

243A-243B. Contemporary Spanish-American Poetry. (Formerly numbered 243.) Lecture, three hours. Intensive study of the important poets of Spanish America from modernism to the present. Mr. Oviedo

244A-244B. Contemporary Spanish-American Novel. (Formerly numbered 244.) Lecture, three hours. A study of the important novelists from modernism to the present. Mr. Oviedo, Mr. Reeve

245. Contemporary Spanish-American Essay. Lecture, three hours. A study of the important Spanish-American essayists of the 20th century. Mr. Skirius

246. Contemporary Spanish-American Drama. Lecture, three hours. A study of the principal Spanish-American dramatists and theater movements in the 20th century. Mr. Luzuriaga

247. Chicano Literature. Lecture, three hours. A study of the major movements and authors of Mexican-American literature. Mr. Hernández

M249. Folk Literature of the Spanish and Portuguese Worlds. (Same as Folklore M249 and Portuguese M249.) Lecture, three hours. An intensive study of the 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 M286B) 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. (Formerly numbered M251.) (Same as Portuguese M251A-M251B.) Lecture, two hours. A study of the problems related to the historical development of Galegan-Portuguese and Old Spanish. Mr. Otero, Mr. Smith

256A-256B. Studies in Spanish Linguistics. (Formerly numbered 256A.) Lecture, two hours. A study of problems in the analysis and description of the contemporary Spanish language. Mr. Otero

257. Studies in Dialectology. (Formerly numbered 256B.) Lecture, two hours.

262A-262B. Studies in Medieval Spanish Literature. (Formerly numbered 262A-262B-262C.) Lecture, two hours. Mr. Gimeno

264A-264B. Studies in Golden Age Spanish Literature. (Formerly numbered 264A-264D.) Lecture, two hours. Mr. Johnson, Mr. Morris, Mr. Rodríguez-Cepeda

265. Cervantes. (Formerly numbered 264D.) Lecture, two hours. Mr. Johnson

270A-270B. Studies in 18th-Century Spanish Literature. (Not the same as courses 270A-270B prior to Fall Quarter 1984.) Lecture, two hours. Mr. Benítez

271A-271B. Studies in 19th-Century Spanish Literature. (Formerly numbered 270A-270B.) Lecture, two hours. Mr. Benítez, Mr. Smith

272A-272B. Studies in 20th-Century Spanish Literature. (Formerly numbered 272A-272D.) Lecture, two hours. Mr. Morris

277A-277B. Studies in Colonial Spanish-American Literature. (Formerly numbered 277.) Lecture, two hours. Ms. Arora

278A-278B. Studies in 19th-Century Spanish-American Literature. (Formerly numbered 278.) Lecture, two hours. Mr. Oviedo

280A-280B. Studies in Contemporary Spanish-American Literature. (Formerly numbered 280A-280D.) Lecture, two hours. Mr. Luzuriaga, Mr. Oviedo

281. Studies in Chicano Literature. Discussion, two hours. Mr. Hernández

M286A-M286B. Studies in Hispanic Folk Literature. (Formerly numbered M286A-M286B-M286C.) (Same as Folklore M286A-M286B.) Lecture, two hours. Ms. Arora

290. Special Topics. Lecture, two hours. Variable topics; consult the *Schedule of Classes* or department counselor for topics to be offered in a specific quarter.

310. The Teaching of Spanish in the Elementary School. Lecture, three hours.

370. The Teaching of Spanish in the Secondary School. Lecture, three hours.

373. The Teaching of 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 the 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 Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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. The Teaching of Spanish at the 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 the M.A. course requirements.

597. Preparation for Graduate Examinations (4 to 8 units). Prerequisites: successful completion of all coursework for the degree, 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 the quarter that comprehensive or qualifying examinations are to be taken. S/U grading.

598. Research for M.A. Thesis (4 to 8 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 the 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 the Nature of Language. (Same as Spanish M35.) Lecture, three hours. An introduction to language study within the context of Romance languages, focusing on Spanish and Portuguese. The nature of language: its structure, its diversity, its evolution, its social and cultural settings, its literary uses. The study of language and its relation to other areas of human knowledge.

M42. Civilization of Spain and Portugal. (Same as Spanish M42.) Required of majors. Highlights of the civilization of Spain and Portugal, with emphasis on their artistic, economic, social, and historical development as background for upper division courses. Conducted in English. Mr. Cruz-Salvadores

M44. Civilization of Spanish America and Brazil. (Same as Spanish M44.) Required of majors. Highlights of the civilization of Spanish America and Brazil, with emphasis on their artistic, economic, social, and historical development as background for upper division courses. Conducted in English. Mr. Reeve, Mr. Skirius

Upper Division Courses

100A. Phonology and Morphology. (Formerly numbered 100.) Lecture, three hours. Analysis of the phonetic, phonemic, and morphological systems of Portuguese. Mr. Quícoli

100B. Syntax. (Formerly numbered 103.) Lecture, three hours. A review of the patterns of the Portuguese language. Mr. Quícoli

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 the three quarters of the traditional pattern and to meet the special needs of advanced undergraduate and graduate students.

105. Advanced Composition and Style. (Formerly numbered 101B.) Practice in writing Portuguese with appropriate vocabulary, syntactical structures, and stylistic patterns.

M118A. The History of Portuguese and Spanish: Phonology. (Formerly numbered 118.) (Same as Spanish M118A.) Lecture, three hours. Prerequisites: courses M35, 100A. Major features of the development of the Portuguese and Spanish languages from their origins in Vulgar Latin to modern times. Ms. Plann, Mr. Quícoli, Mr. Smith

M118B. The History of Portuguese and Spanish: Morphology and Syntax. (Formerly numbered 118.) (Same as Spanish M118B.) Lecture, three hours. Prerequisites: courses M35, 100B. Major features of the development of the Portuguese and Spanish languages from their origins in Vulgar Latin to modern times. Ms. Plann, Mr. Quícoli, Mr. Smith

120A-120B. Survey of Portuguese Literature. Lecture, three hours. An introduction to the principal periods, currents, and authors of Portuguese literature. Mr. Dias

C124. Medieval Portuguese Literature. Lecture, three hours. A study of the main genres of medieval Portuguese and Galician literature through representative works. May be concurrently scheduled with course C224. Mr. Dias

C125. Renaissance Portuguese Literature. (Formerly numbered C126.) Lecture, three hours. A study of the main genres of Renaissance Portuguese literature, with particular emphasis on the works of Luis de Camoens. May be concurrently scheduled with course C225. Mr. Dias

C126. Baroque and Neoclassical Portuguese Literature. (Not the same as course C126 prior to Fall Quarter 1985.) Lecture, three hours. A study of the main genres of baroque and neoclassical Portuguese literature through representative works. May be concurrently scheduled with course C226. Mr. Dias

C127. Romanticism and Realism in Portuguese Literature. (Formerly numbered C128.) Lecture, three hours. A study of the principal features through representative works. May be concurrently scheduled with course C227. Mr. Dias

C128. Post-Romanticism and Naturalism in Portuguese Literature. (Not the same as course C128 prior to Fall Quarter 1985.) Lecture, three hours. A study of the principal features through representative works. May be concurrently scheduled with course C228. Mr. Dias

C129. 20th-Century Portuguese Literature. (Formerly numbered C136.) Lecture, three hours. A study of representative trends and authors. May be concurrently scheduled with course C229. Mr. Dias

130A-130B. Survey of Brazilian Literature. (Formerly numbered 121A, 121B.) Lecture, three hours. An introduction to the principal periods, currents, and authors of Brazilian literature. Mr. Hulet

C131. Colonial Brazilian Literature. (Formerly numbered C127.) Lecture, three hours. A study of the most important authors to 1830. May be concurrently scheduled with course C231. Mr. Hulet

C132. Romanticism in Brazilian Literature. (Formerly numbered C129.) Lecture, three hours. A study of representative trends and authors. May be concurrently scheduled with course C232. Mr. Hulet

C133. Naturalism, Realism, and Symbolism in Brazilian Literature. (Formerly numbered C135.) Lecture, three hours. A study of representative trends and authors. May be concurrently scheduled with course C233. Mr. Hulet

C134. 20th-Century Brazilian Literature: Poetry and Drama. (Formerly numbered C137.) Lecture, three hours. A study of representative trends and authors. May be concurrently scheduled with course C234. Mr. Hulet

C135. 20th-Century Brazilian Literature: Novel. (Formerly numbered C137.) Lecture, three hours. A study of the most important Brazilian novelists. May be concurrently scheduled with course C235. Mr. Hulet

140. Portuguese, Brazilian, and African Literature in Translation. (Formerly numbered 140A-140B.) Lecture, three hours. Reading and discussion of selected works in translation. Papers and examinations in English. Mr. Dias, Mr. Hulet

141. Film and Literature of the Portuguese-Speaking World. (Formerly numbered 141B.) Lecture, three hours. Not open for credit to students with credit for course 197. A topical analysis (conducted in English) of the 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. A variable topics course with readings, discussions, and papers; consult the *Schedule of Classes* or department counselor for topic to be offered in a specific quarter.

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. Benítez, Mr. Smith

M201. Literary Theory and Criticism. (Same as Spanish M201.) Lecture, three hours. Definition, discussion, and application of the main currents of contemporary literary theory and criticism. Mr. Benítez, Mr. Otero

202. Synchronic Morphology and Phonology. (Formerly numbered 206.) Lecture, three hours. A study of theoretical synchronic linguistics as applied to Portuguese. Mr. Quícoli

204A-204B. Generative Grammar. Lecture, three hours. Prerequisite: consent of instructor. Course 204A or consent of instructor is prerequisite to 204B. A generative approach to the Portuguese language, with some consideration of the bearing of syntax, semiology, and phonology on style, metaphor, and meter. Mr. Quícoli

M205A-M205B. The Development of the Portuguese and Spanish Languages. (Formerly numbered M203A-M203B.) (Same as Spanish M205A-M205B.) Lecture, three hours. Intensive study of the historical development of the Portuguese and Spanish languages from their origin in spoken Latin. Mr. Otero, Mr. Smith

C224. Medieval Portuguese Literature. (Formerly numbered C242A.) Lecture, three hours. A study of the main genres of medieval Portuguese and Galician literature through representative works. May be concurrently scheduled with course C124. Mr. Dias

C225. Renaissance Portuguese Literature. (Formerly numbered C242B.) Lecture, three hours. A study of the main genres of Renaissance Portuguese literature, with particular emphasis on the works of Luis de Camoens. May be concurrently scheduled with course C125. Mr. Dias

C226. Baroque and Neoclassical Portuguese Literature. (Formerly numbered C242B). Lecture, three hours. A study of the main genres of baroque and neoclassical Portuguese literature through representative works. May be concurrently scheduled with course C126. Mr. Dias

C227. Romanticism and Realism in Portuguese Literature. (Formerly numbered C242C.) Lecture, three hours. A study of the principal features through representative works. May be concurrently scheduled with course C127. Mr. Dias

C228. Post-Romanticism and Naturalism in Portuguese Literature. (Formerly numbered C242C.) Lecture, three hours. A study of the principal features through representative works. May be concurrently scheduled with course C128. Mr. Dias

C229. 20th-Century Portuguese Literature. (Formerly numbered C242D.) Lecture, three hours. A study of representative trends and authors. May be concurrently scheduled with course C129. Mr. Dias

C231. Colonial Brazilian Literature. (Formerly numbered C243A.) Lecture, three hours. A study of the most important authors to 1830. May be concurrently scheduled with course C131. Mr. Hulet

C232. Romanticism in Brazilian Literature. (Formerly numbered C243B.) Lecture, three hours. A study of representative trends and authors. May be concurrently scheduled with course C132. Mr. Hulet

C233. Naturalism, Realism, and Symbolism in Brazilian Literature. (Formerly numbered C243C.) Lecture, three hours. A study of representative trends and authors. May be concurrently scheduled with course C133. Mr. Hulet

C234. 20th-Century Brazilian Literature: Poetry and Drama. (Formerly numbered C243D.) Lecture, three hours. A study of representative trends and authors. May be concurrently scheduled with course C134. Mr. Hulet

C235. 20th-Century Brazilian Literature: Novel. (Formerly numbered C243D.) Lecture, three hours. A study of the most important Brazilian novelists. May be concurrently scheduled with course C135. Mr. Hulet

M249. Folk Literature of the Spanish and Portuguese Worlds. (Same as Folklore M249 and Spanish M249.) Lecture, three hours. An intensive study of the 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. (Formerly numbered M251.) (Same as Spanish M251A-M251B.) Lecture, two hours. A study of the problems related to the historical development of Galegan-Portuguese and Old Spanish. Mr. Otero, Mr. Smith

252. Studies in Early Portuguese Literature. (Formerly numbered 252A-252B-252C.) Lecture, two hours. Mr. Dias

253. Studies in Modern Portuguese Literature. (Formerly numbered 252A-252B-252C.) Lecture, two hours. Mr. Dias

254. Studies in Early Brazilian Literature. (Formerly numbered 253A-253B-253C.) Lecture, two hours. Mr. Hulet

255. Studies in Modern Brazilian Literature. (Formerly numbered 253A-253B-253C.) Lecture, two hours. Mr. Hulet

370. The Teaching of Portuguese in the Secondary School. For future teachers in this field. Mr. Hulet

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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. Quícoli

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 the M.A. course requirements.

597. Preparation for Graduate Examinations (4 to 8 units). Prerequisites: official acceptance of candidacy by the 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 the quarter that comprehensive or qualifying examinations are to be taken. S/U grading.

598. Research for M.A. Thesis (4 to 8 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 the Ph.D. qualifying examinations. Research for and preparation of Ph.D. dissertation. S/U grading.

Speech

232 Royce Hall, (213) 825-3303

Professors
Donald E. Hargis, Ph.D., *Emeritus*
Charles W. Lomas, Ph.D., *Emeritus*

Associate Professors
Neil M. Malamuth, Ph.D. *(Communication Studies), Chair*
Paul Irwin Rosenthal, Ph.D. *(Communication Studies)*
Ralph Richardson, Ph.D., *Emeritus*

Lecturers
Dale V. Atkins, Ph.D.
Dee A. Bridgewater, Ph.D.
Stephen A. Doyle
Eugenie Dye, Ph.D.
Marde S. Gregory
Thomas E. Miller
Sonya H. Packer

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. A 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. The critical analysis of selected argumentative speeches. Mr. Miller

144. Speech and Community Action. Prerequisite: consent of instructor. An 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. The Speeches of Abraham Lincoln. Introduction to the full span of Lincoln's speaking career. His methods of preparation, the 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 in Rhetoric. Prerequisite: senior standing or consent of instructor. A 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

The College of Letters and Science offers a program of courses through which you may receive credit toward a credential to teach in California elementary schools. For details, see "Diversified Liberal Arts" earlier in this chapter.

Urban Studies or Organizational Studies
(Interdepartmental)

4289 Bunche Hall, (213) 825-4331

Scope and Objectives

Cities and organizations are multifaceted and can usefully be explored from more than one disciplinary perspective. The Special Program in Urban Studies or Organizational Studies brings together students and faculty from the Departments of History, Political Science, Economics, Sociology, Psychology, and Geography who share an interest in the modern city or in modern organizations. The programs give students a solid grounding in the urban or organizational perspectives and methods of at least two departments. Each of the programs must be taken in conjunction with a major in the social sciences.

Special Undergraduate Programs

You may elect to combine one of these programs 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 or 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 each specialization must be taken for a letter grade. The specializations must be taken in conjunction with a major in the division of social sciences.

Preparation for the Programs

Required: At least five of the following courses appropriate to the courses to be taken in the specialization: Economics 1 and 2; Sociology 18 and 109 or equivalent; Political Science 40 (urban studies), 80 (organizational studies); Psychology 10; Sociology 1; Geography 4.

Consult the Political Science departmental counselor regarding pending changes in the following programs.

Urban Studies Specialization

Required: (1) At least three courses outside the major department selected from Political Science 182A, Sociology 125, Economics 120, Geography 150, Anthropology 167, Psychology 168; (2) a minimum of three courses selected from the following suites outside the major department: Political Science 180, 182B, 188B; Economics 121, 130, 133; Sociology 124, 154, 155; Geography 145, 146, 150, 151, 152, 156; History 154A, 154B, 154C, 154D; Psychology 127, 135, 137A; (3) internship experience in an urban governmental or community service organization.

Organizational Studies Specialization

Required: (1) At least three courses outside the major department selected from Political Science 190, Sociology 121, 141, Management 190; (2) a minimum of three courses selected from the following suites outside the major department: Political Science 142, 145, 146, 186; Economics 101A, 147A, 147B, 170, 171; Sociology 124, 140, 152, 154; Geography 146, 148, 149; Psychology 135, 137A, 148; (3) internship experience in a governmental or service organization.

For further information, contact Professor Robert Fried at the program address.

Women's Studies
(Interdepartmental)

240 Kinsey Hall, (213) 206-8101

Professors
Edward A. Alpers, Ph.D. *(History)*
Helen S. Astin, Ph.D. *(Education)*
Martha Banta, Ph.D. *(English)*
Jeanne M. Giovannoni, Ph.D. *(Social Welfare)*
Dolores Hayden, M.Arch. *(Architecture and Urban Planning)*
Nancy M. Henley, Ph.D. *(Psychology)*
Christine Littleton, J.D., *Acting (Law)*
Anne K. Mellor, Ph.D. *(English), Acting Director*
L. Anne Peplau, Ph.D. *(Psychology)*
Kathryn Kish Sklar, Ph.D. *(History)*
Ruth B. Yeazell, Ph.D. *(English)*

Associate Professors
Ann L.T. Bergren, Ph.D. *(Classics)*
Neil M. Malamuth, Ph.D. *(Communication Studies)*
Sara Melzer, Ph.D. *(French)*
Karen E. Rowe, Ph.D. *(English)*

Assistant Professors
Ruth Block, Ph.D. *(History)*
Susan Brienza, Ph.D. *(English)*
Jennie Joe, Ph.D. *(Anthropology)*
Nancy E. Levine, Ph.D. *(Anthropology)*
Vickie M. Mays, Ph.D. *(Psychology)*
Gary A. Richwald, M.D., M.P.H. *(Public Health)*
Sylvia Rodríguez, Ph.D. *(Anthropology)*

Scope and Objectives

The Women's Studies Program, established in 1975, is an interdisciplinary academic program offering an undergraduate specialization. Students completing a bachelor's degree in the College of Letters and Science may petition to receive a women's studies specialization in addition to a major in their chosen discipline.

The program spans departments, disciplines, and ideologies. It integrates the study of women — their social contributions and cultural experiences — into traditional academic fields, drawing on new research and theories. Women's studies offer tools for personal growth, new knowledge about women and men, and new perspectives for understanding the past and present and influencing the future.

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. The program sponsors a Student Association for Women's Studies and assists other student groups with extracurricular programming on feminist issues. Research in women's studies is sponsored in cooperation with the recently established 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 faculty seminar on women, culture, and theory.

Special Undergraduate Program

Admission

A women's studies committee composed of the director, faculty members, and a student representative sets program policies and curricula. To be admitted to the specialization, you must have a grade-point average of 2.0 or better and must formally register with the program. You are encouraged to declare your specialization in women's studies as early as possible and to discuss your proposed course of study with the director or undergraduate adviser.

Requirements for the Specialization

Students participating in this program are required to complete both a departmental major and the women's studies specialization. There are no lower division prerequisites. You must take two core courses (Women's Studies 100 and M197), plus six upper division courses from the "Supporting Courses" lists. At least two of the six courses must be taken in departments other than the major department, and two may be experimental courses offered by the Council on Educational Development (CED). No more than four units of course 199 may be applied.

You are encouraged to draw on the University's diverse resources in creating your 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. You may petition to have diverse courses accepted, including courses outside the College of Letters and Science, independent studies, or field study courses.

All courses applied to the specialization must be taken for a letter grade, and you must have a GPA of 2.5 or higher 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.

Upper Division Core Courses

100. Introduction to Women's Studies. Lecture, three hours. Intended for sophomores and first-quarter juniors; required of students who wish to graduate with a specialization in women's studies. Introduction to the interdisciplinary and cross-cultural study of women in preparation for further investigation within traditional disciplines. (W)

M197. Senior Seminar in Women's Studies. (Same as Education M197.) Discussion, three hours; laboratory, one hour. Prerequisites: course 100 plus 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 a specific topic concerning women, explores frameworks for understanding female experience (biological, economic, historical, and psychological), and refines methods for research. (Sp)

Supporting Upper Division Courses

M102. Sex Roles and Society. (Same as Sociology M102A.) Lecture, three hours; discussion, one hour. Prerequisite: course 100 or Sociology 1 or consent of instructor. Consideration of sociological literature pertaining to the development and functions of sex roles in society from a critical perspective. Topics include socialization and gender norms, contemporary sex role strain, and the challenge to traditional notions of sex roles posed by feminist critique.

M107. Women in Literature. (Same as English M107.) Prerequisite: satisfaction of Subject A requirement. A survey of literary works by and about women. The delineation of women in English and American literature, studies in historical and contemporary themes, and the evolution of forms and techniques in poetry, fiction, and biography.
Ms. Brienza, Ms. Mellor, Ms. Rowe, Ms. Yeazell

M137E. Work Behavior of Women and Men. (Same as Psychology M137E.) Prerequisites: course 100 or Psychology 10, junior or senior standing. Examination of work behavior of men and women. Topics include antecedents of career choice, job finding, leadership, performance evaluation, discrimination and evaluation bias, job satisfaction, and interdependence of work and family roles.

M148. Women in Higher Education. (Same as Education M148.) Prerequisite: upper division standing. The 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

M158. Women in Italian Culture. (Same as Italian M158.) Lecture, three hours. Designed with the intent of examining the role that women have played in Italian society. Concentration alternatively on the world of the medieval and Renaissance "matriarch" and on the "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 are required to read texts in Italian and to prepare papers written in Italian.

M163. Women in Culture and Society. (Same as Anthropology M163.) Prerequisite: Anthropology 5 or 22. A systematic approach to the study of sex roles from an anthropological perspective. A critical review of relevant theoretical issues supported by ethnographic material from traditional cultures and contemporary American culture.
Ms. Joe, Ms. Levine, Ms. Rodríguez

M165. The Psychology of Gender. (Same as Psychology M165.) Lecture, two hours; discussion, one hour. 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 the impact of gender on social interaction. Ms. Peplau

170. Jurisprudence of Sexual Equality. Prerequisite: course 100 or Political Science 10 or Philosophy 6 or 9 or consent of instructor. 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. The impact of the social, psychological, political, and economic forces which impact on the 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. A 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 the women's studies specialization.

Supporting Courses in Other Departments

Check with the program office for additional course listings.

Anthropology 151. Marriage, Family, and Kinship

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

English 180X. Specialized Studies in Literature

French 145. Topics in French Literature: From Nature (Female?) to Culture (Male?)

158. Woman in French Literature

History 136I. Topics in European History: Prostitution in the Western World, 1550 to the Present

136J-136K-136L. History of Women in Europe

156C-156D-156E. Social History of American Women

197. Undergraduate Seminars

Philosophy 192. Philosophical Analysis of Issues in Women's Liberation

Political Science 149A-149Z. Special Studies in Politics: Women and the Political Process

C197A-C197F. Seminars for Majors

Psychology 137C. Interpersonal Relations

137F. Special Topics in Social Psychology: Gender and Close Relationships

Public Health 176E. Family and Sexual Violence

Sociology 102A-102Z. Special Topics in Sociology: Sociology of Women

160. The Demography and Sociology of Women's Economic Roles

197. Undergraduate Seminar

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 College of Fine Arts. You enroll in the college of your choice and fulfill the general education requirements of that college. For details on this undergraduate major, see Chapter 6 on the College of Fine Arts.

College of Fine Arts

Robert H. Gray, Dean

6

UCLA's College of Fine Arts, the only undergraduate college of its kind in the University of California system, is a young, dynamic center for higher education in the arts. Its distinguished faculty of more than 200 includes visiting artists and scholars who bring a variety of exciting viewpoints to enrich the study of the arts. Its goal is to educate the artist who is connected to society.

The College of Fine Arts consists of four departments: Art, Design, and Art History; Dance; Music; and Theater, Film, and Television. The curriculum is designed to provide fine arts students with intensive training in their major within the broader liberal arts education of the University. The creative or performing artist, as well as the historian or critic, is provided an outstanding academic program.

Fine arts majors explore, through research and practice, the unique creativity of world cultures. Nonmajors are offered an educational program intended to foster a better understanding of the visual and performing arts. The college continues to support extracurricular programs in the arts for the benefit not only of the University community, but for the public as well. Such efforts include art gallery and museum exhibits, plays, films, and music and dance concerts.

Photo: Anna Mahler's impressive Tower of Masks dominates the Macgowan Hall courtyard.

College of Fine Arts

A265 Murphy Hall, (213) 206-6465

The four departments of the College of Fine Arts both borrow from and add to the rich and varied cultural life of the campus. Students in the Department of Art, Design, and Art History are taught to understand the broad panorama of the visual arts, while those in the Dance Department have an opportunity to study ballet, modern, and ethnic dance forms. The Music Department offers specializations in composition and theory, music education, ethnomusicology, history and literature, performance, and systematic musicology. Students in the Theater, Film, and Television Department major in either theater or motion picture/television.

History/art history is a new undergraduate interdisciplinary major offered jointly by the College of Fine Arts and the College of Letters and Science.

World arts and cultures (formerly ethnic arts) is an undergraduate major which integrates art, dance, music, theater, anthropology, and folklore and mythology into one unique program. This interdisciplinary major is offered jointly by the College of Fine Arts and the College of Letters and Science.

An informative brochure on the UCLA College of Fine Arts is available from the Student Services Office, A239 Murphy Hall, UCLA, Los Angeles, CA 90024.

If you are interested in obtaining teaching credentials for California elementary and secondary schools, consult the Graduate School of Education, 201 Moore Hall.

Bachelor of Arts Degrees

Admission

In addition to the University of California Undergraduate Application, departments in the College of Fine Arts require auditions, portfolios, or evidence of creativity. Detailed information on departmental requirements will be mailed to you on receipt of the application. Deadline date for applications is November 30, 1986, for admission in Fall Quarter 1987.

The Study List

Each quarter the student Study List must include from 12 to 17 units. The college has no provision for part-time enrollment. After your first quarter, 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 quarter with all courses passed. The petitions must be filed and approved by the dean of the college 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 college to continue for that quarter.

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 college and must meet the specific qualifications. Courses numbered in the 400 and 500 series may not be applied toward the degree.

Majors and Degrees Offered

Art	B.A., M.A., M.F.A.
Art History	B.A., M.A., Ph.D.
Dance	B.A., M.A.
Dance/Movement Therapy	M.A.
Design	B.A., M.A., M.F.A.
History/Art History	B.A.
Motion Picture/Television	B.A.
Music	B.A., M.A., M.F.A., Ph.D.
Theater	B.A.
Theater Arts (Motion Picture/Television, Theater)	M.A., M.F.A., Ph.D.
World Arts and Cultures	B.A.

Concurrent Enrollment

Enrollment at another institution or University Extension while enrolled at UCLA is not permitted.

Degree Requirements

Each student must meet six kinds of requirements for the B.A. degree: University, college, 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.

College of Fine Arts students enrolled in English (ESL) 33A, 33B, 33C must take the courses for a letter grade.

College Requirements

The general requirements of the College of Fine Arts must be completed with a grade-point average of 2.0 or better.

For specific courses that fulfill the general college requirements and for courses preceded by M or C, consult the college office before enrolling. Courses listed below are used only as a guideline for 1986-87. Note: Courses that include the review of film or television may not be applied toward any general college requirements.

English Composition and Rhetoric (4 Units)

English 3 with a grade of C (2.0) or better must be completed by the end of the freshman year and may not be taken on a Passed/Not Passed basis.

Critical Reading and Writing (4 Units)

One course from English 4, *Humanities 2A, 2B, or 2C with a grade of C (2.0) or better must be completed by the end of the sophomore year and may not be taken on a Passed/Not Passed basis.

*If Humanities 2A, 2B, or 2C is taken to meet the critical reading and writing requirement, it may not also satisfy the literature requirement; English 4 may never be applied toward the literature requirement.

Foreign Language (12 Units)

Three quarters of one foreign language through level three are required. This requirement must be completed by the end of your sophomore year. If at least four quarter units of

level three are completed without taking level one or two, an additional eight units must be completed from courses listed below in science, social science, or humanities. International students whose entire secondary education has been taken in a language other than English may petition to be exempt from the foreign language requirement.

Proficiency examinations may not be used to complete the foreign language requirement. Some majors may require completion of the language prior to entry into the major.

Science/Mathematics (8 Units)

One course in physical or biological science and one course in natural science, mathematics, or another physical/biological science are required.

Physical and Biological Science Courses: Astronomy 3, 4, 81, 82; Atmospheric Sciences 2, 3, 10H, 11; biology (except Biology 10, 30, 35); chemistry (except Chemistry 2 for students with high school chemistry); earth and space sciences (except Earth and Space Sciences 8, 20, 115); Honors Collegium 44; Kinesiology 12A, 12B, 13, 14; microbiology; physics (except Physics 10).

Other Natural Science and Mathematics Courses: Anthropology 1, 2, 11, 124, 127P; Atmospheric Sciences 1, 5, 6, 8; Biology 10, 35; Earth and Space Sciences 8, 20, 115; Geography 1, 2, 5; Honors Collegium 40, 41, 45; mathematics (no remedial, historical, or statistical); Physics 10; Psychology 15, 115, 116.

Social Science (12 Units)

Two courses from the Department of History (one in any period prior to 1600, one in any period after 1600) and one other social science course are required. Note: Survey courses in history which cover "antiquity to present" may be applied only on history after 1600 or on other social science courses.

Other Social Science Courses: Anthropology (except Anthropology 1, 2, 11, 124, 127P, 156); economics (principles, history, and theory only); geography (except Geography 1, 2, 5); history (except medical or geological); Honors Collegium 42, 56, 60, 61, 63, 64, 65; Near Eastern languages (Ancient Near East 163A, 163B, Jewish Studies 140A, 140B, 141, 142); political science (except courses dealing with civil rights and law); psychology (except Psychology 15, 115, 116, education, counseling, family life, or child care); sociology (except mass communications, civil rights, education, law, criminology, marriage, family life, or child care).

Humanities (12 Units)

One course in the arts, one course in literature, and one course in philosophy and/or religion are required. Performance, studio, or film/television courses and those in your major department do not meet this requirement.

The Arts Courses: Art History 50 series or 101A through 121B; Classics 151A, 151B, 151C, 151D (except art history majors); Dance 134A, 134B, 180A through 187A; Folklore and Mythology 118, 124; Motion Picture/Television 189; Music 2A, 2B, 113A, 113B, 130 through 135C, 138 through 148, 151A through 153C, 157 through 159, 188A through 188F, 189; Theater 5A, 5B, 5C, 102A through 103B, 104D through 105.

Literature Courses: Selected courses in English, ethnic, American, or foreign literature, including works in translation; Classics 10, 20; East Asian Languages and Cultures 129; Folklore and Mythology 15, 101, 108, 113, 130, 131; German 119A through 119F; Honors Collegium 51, 52, 54; humanities, except those that are M or C courses; Near Eastern languages (Hebrew 120, Iranian 140, Jewish Studies 150B, 151A, 151B).

Philosophy/Religion Courses: Anthropology 156; Classics 166A, 166B; East Asian Languages and Cultures 139, 172, 173, 174, 183, 184, 185; Honors Collegium 50, 57; Near Eastern languages (Ancient Near East 130, Iranian 170, Islamics 110); Philosophy 1 through 32 and selected upper division courses.

A few course areas that may NOT be applied toward the general college requirements are cross-listed courses (M or C), business, communications, creative writing, criminology, education, engineering, family life, marriage and child care, field studies, home economics, independent studies, interdisciplinary studies, journalism, law, mass media, public health, and speech. Also no 198, 199, or CED courses and no seminars, proseminars, or freshman seminars may be applied toward the general requirements of the college.

Additional Nonmajor Department Requirements

Three upper division courses (12 units) must be completed outside your major department. These courses may not be applied toward the general college requirements. Studio, performance, activity, independent study, debate courses, children's theater, creative dramatics, internships, and field studies courses may not be applied as additional nonmajor courses.

Unit Requirements

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 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.

University 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 college 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 College of Fine Arts. Of the last 45 units completed for the bachelor's degree, 35 must be earned in residence in the College of Fine Arts (28 units must be upper division — 16 of which must be in the major department). No more than 18 of the 35 units may be completed in UCLA Summer Sessions.

Courses in University 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). Most 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 college when necessary.

Any department offering a major in the College of Fine 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 University 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 applying to the general college and University requirements.

Minimum Progress: You are expected to complete satisfactorily at least 36 units during any three consecutive quarters 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 quarters in residence.

History/Art History and World Arts and Cultures

Intercollege, interdepartmental majors in history/art history and world arts and cultures are open to students in both the College of Fine Arts and the College of Letters and Science. You enroll in the college of your choice and fulfill the general education requirements of that college. Counseling is available in the department of your concentration. For details on the majors, see the respective sections later in this chapter.

Honors

To receive **Dean's Honors** in the College of Fine Arts, you must have at least 12 graded units per quarter 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 quarter. You are not eligible for Dean's Honors in any given quarter if you receive an Incomplete or a Not Passed (NP) grade, change a grade, or repeat a course.

Honors with the Bachelor's Degree 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 3.55; *Magna cum laude*, 3.65; *Summa cum laude*, 3.77.

Counseling and Program Planning

The College of Fine Arts offers preadmission advising, program planning in the major and general degree requirements, and individual meetings with departmental counselors and faculty, 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, College of Fine Arts, A239 Murphy Hall (825-9705).

Graduate Study

The advanced degree programs offered in the College of Fine Arts provide graduate students with unique research opportunities when combined with special resources, such as the Film, Television, and Radio Archives, the University Research Library, the special collections of the Art, Music, and Theater Arts Libraries, and the University's exhibition and performance halls.

The College of Fine Arts cooperates with UCLA's Graduate School of Management in offering a Master of Business Administration (M.B.A.) in Arts Management. Participating students serve quarter-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 a relatively new M.F.A. management program in the Department of Theater, Film, and Television, with options in either theater or motion picture/television.

A program in teaching is offered by the Graduate School of Education in each of the fine 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 college has limitations and additional requirements. In general, samples of your work (dance audition, art portfolio, playwriting sample, 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, Design, and Art History

1300 Dickson Art Center, (213) 825-3281

Professors

Samuel Amato, B.F.A. *(Art)*
Albert Boime, Ph.D. *(Art History)*
William J. Brice *(Art)*
Raymond B. Brown, M.A. *(Art), Chair*
Jack B. Carter, M.A. *(Design)*
Susan B. Downey, Ph.D. *(Art History)*
Elliot J. Elgart, M.F.A. *(Art)*
Robert H. Gray, M.F.A.
Robert F. Heinecken, M.A. *(Art)*
J. Bernard Kester, M.A. *(Design)*
David M. Kunzle, Ph.D. *(Art History)*
Vasa Mihich *(Design)*
Lee Mullican *(Art)*
Carlo Pedretti, M.A. *(Art History and Armand Hammer Professor of Leonardo Studies)*
Donald A. Preziosi, Ph.D. *(Art History)*
Jan Stussy, M.F.A. *(Art)*

Emeritus Professors

Laura F. Andreson, M.A.
Alexander Badawy, D.I.A., Ph.D.
E. Maurice Bloch, Ph.D.
Archine V. Fetty, M.A.
Thomas Jennings, M.A.
Lester D. Longman, Ph.D., L.H.D., D.F.A.
John A. Neuhart
Gordon M. Nunes, M.A.
Katharina Otto-Dorn, Ph.D.
Frederick S. Wight, M.A.

Associate Professors

James W. Bassler, M.A. *(Design)*
William C. Brown, M.A. *(Design)*
Chris Burden, M.F.A. *(Art)*
Ioli Kalavrezou-Maxeiner, Ph.D. *(Art History)*
Mitsuru Kataoka, M.A. *(Design)*
Cecelia F. Klein, Ph.D. *(Art History)*
Donald F. McCallum, Ph.D. *(Art History)*
Martin J. Powers, Ph.D. *(Art History)*
Arnold Rubin, Ph.D. *(Art History)*
Adrian Saxe, B.F.A. *(Design)*
Nathan Shapira, Dottore in Architettura *(Design)*

Assistant Professors

Kathleen A. Bick *(Design)*
Irene A. Bierman, Ph.D. *(Art History)*
Robert L. Brown, Ph.D. *(Art History)*
Barbara Drucker, M.F.A. *(Art)*
Roger Herman, M.F.A. *(Art)*
Mark McFadden, M.F.A. *(Art)*
Charles Ray, M.F.A. *(Art)*
Patricia Wickman, M.F.A. *(Art)*
Joanna Woods-Marsden, Ph.D. *(Art History)*
Alice E. McCloskey, M.A., *Emeritus*
Madeleine Sunkees, B.Ed., *Emeritus*

Adjunct Assistant Professors

James Cuno, Ph.D. *(Art History)*
Edith A. Tonelli, Ph.D. *(Art History)*

Visiting Lecturers

Shelley M. Bennett, Ph.D. *(Art History)*
Leslie Biller, M.A. *(Art)*
Carol Blake, M.F.A. *(Art)*
Jerrold Burchman, M.A. *(Art)*
Don Chadwick *(Design)*
Laddie John Dill *(Art)*
Art Durinski, M.F.A. *(Design)*
Avi Engel, M.F.A. *(Design)*
Clayton Lee, M.F.A. *(Design)*
Paul McCarthy, M.F.A. *(Art)*
Alexis Smith *(Art)*
Don Suggs, M.F.A. *(Art)*
Lois Swirnoff, M.F.A. *(Design)*
Jeff Weiss, M.F.A. *(Art)*
Jean S. Weisz, Ph.D. *(Art History)*
Rush White, M.F.A. *(Art)*

Scope and Objectives

As the department name indicates, art, design, and art history are largely autonomous divisions. Scope and objectives are different for each, although all fields lead to Bachelor of Arts and Master of Arts degrees and all benefit from the rich and varied art resources at UCLA and in the Los Angeles community. Also offered are a Master of Fine Arts in Art and a Ph.D. in Art History.

Art courses include painting and drawing, sculpture, printmaking, photography, and new forms and concepts (which include perfor-

mance, installation, and video). 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.

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 a broad knowledge of art is important and provides students preparing for graduate study with a foundation for research requiring independent critical judgment.

Design courses teach skills and organizational concepts necessary to application of art in contemporary life, including studies in visual communication (graphics, video, electronic imagery), ceramics, textiles, fiber, industrial, product, and interior space design.

Bachelor of Arts in Art

Preparation for the Major

Required: Art 5A, 5B, 5C, 15A, 15B, 22, and one course from Art History 50, 51, 54, 55, 56, 57.

The Major

Required: A minimum of 14 upper division courses, including Art 130, 133, 137, 140, 145, 147, 148, and 149, one course from Art History 101A through 121B, and five courses of art electives. It is recommended that you have each quarter's program approved by a departmental adviser.

Bachelor of Arts in Art History

Preparation for the Major

Required: Art History 50, 51, 54, 55, 56, 57.

The Major

Required: Eleven courses of upper division art history as follows:

(1) A total of eight courses (32 units) from the following 13 areas (at least one course in six of the 13 areas, with at least three from Group A and three from Group B):

Group A: (1) 101A, 101B, 101C, 102, (2) 103A, 103B, 103C, 103D, 103E, (3) 105A, 105B, 105C, 105D, 105E, (4) 106A, 106B, 106C, 108A, 108B, (5) 109A, 109B, 109C, 109D, (6) 110A, 110B, 110C, 110D, 110E, 110F, (7) 112A, 112B, 112C, (8) 120A, 120B, 120C, 121A, 121B.

Group B: (9) 104A, 104B, C104C, (10) 114A, 114D, C115A, (11) 114B, 114C, C115B, C115C, C115D, C115E, C115F, (12) C117A, C117B, C117C, 118B, 118D, (13) 118A, 118C, C119A, C119B.

(2) Three art history electives which may include courses 125, 197, 199 (design or studio courses do not apply as electives), and no more than four units of Classics 151A, 151B, 151C, 151D.

(3) Two quarters of one foreign language or equivalent. The language is in addition to the college foreign language requirements.

It is recommended that you have each quarter's program approved by a departmental adviser.

Bachelor of Arts in Design

Preparation for the Major

Required: Design 30A, 30B, 31A, 31B, 32A, 32B, four courses from 33A through 33G, and one course from Art History 50, 51, 54, 55, 56, 57.

The Major

Required: A minimum of 12 upper division courses, including eight courses from Design 161A through 172B and four courses of art electives.

It is recommended that you have each quarter's program approved by a departmental adviser.

Note: Check the *Schedule of Classes* for courses restricted to majors only.

Master of Arts in Art

Art Specialty

Admission

Students are admitted in Fall Quarter only. Regular admission requires a B.A. or equivalent 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 Graduate Assistant, Department of Art, Design, and Art History, 1300 Dickson, UCLA, Los Angeles, CA 90024.

Provisional admission may be granted for work with faculty sponsors for three quarters, pending reconsideration of regular admission.

Major Fields or Subdisciplines

Drawing, painting, sculpture, printmaking, photography, video, new forms and concepts. No limit to the variations, extent, or value of these designations is intended.

Course Requirements

A minimum of 36 quarter units in the department in courses 101A through 295 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 the field of specialization.

An additional 36 quarter units of art history, theory, and criticism in undergraduate and/or graduate study are required (for students with little or no art history in undergraduate work, some or all of these units may be taken as electives beyond the 20 units of graduate coursework required). 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 preconcluding 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.

Design Specialty

Admission

Students are admitted in Fall, Winter, and Spring Quarters. 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 who have a B.A. degree or equivalent may be admitted on an unconditional basis or on a provisional basis. If you are admitted on an unconditional basis, an initial advisory committee is formed to guide you in your studies. Provisional admission is recommended for two quarters when you show great promise, but your grade-point average is below 3.0, preparation for the graduate area of specialization is insufficient as demonstrated in your portfolio, or undergraduate preparation is inadequate as indicated in transcripts. An advisory committee is formed to outline a program of study that will allow you to continue on an unconditional basis.

Major Fields or Subdisciplines

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) in courses 101A through 295 (and possibly 596) is required, with a B average. These must include a minimum of 20 quarter units of design courses numbered above 200, of which at least eight units must be from Design 290A-290B-290C 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 comprehensive examination (offered each quarter) consists of an oral examination and a concentrated body of work which is presented as the master's statement. Also required is an accompanying record of the project, consisting of documentation in the form of slides of physical work, research material, and other visual material, and which may include a written statement as determined by the graduate guidance committee.

Master of Arts in Art History

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. 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 in each group noted below. Specific areas may not be offered in satisfaction of more than one requirement.

Group A: (1) Egyptian, (2) ancient Near East, (3) classical, (4) medieval, (5) Renaissance, (6) baroque, (7) modern, and (8) American.

Group B: (1) African, (2) oceanic, (3) Native North American, (4) pre-Columbian, (5) Islamic, (6) Indian, (7) Chinese, and (8) Japanese.

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 the first two quarters in residence and may not be applied toward the 10 courses required for the degree. Instead of taking a course, you may substitute a competency examination in the deficient area.

Prospective students may contact the Graduate Assistant, Department of Art, Design, and Art History, 1300 Dickson, UCLA, Los Angeles, CA 90024, for brochures and information. The department has no special departmental application.

Major Fields or Subdisciplines

Sixteen fields in two groups, 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 an Asian (i.e., Chinese, Japanese, South Asian), pre-Columbian, or Islamic art history area. Students majoring in Chinese or Japanese art history must substitute either Chinese or Japanese respectively for either French or German. Those majoring in a South Asian or Islamic art history area must substitute, for either French or German, an appropriate classical research language of South Asia or Islamic culture respectively. 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 in any of the following ways: (1) by passing the department language examination, (2) by passing the Educational Testing Service (ETS) examination with a minimum score of 600, (3) by enrolling in and completing with a minimum grade of B, UCLA's French 5, German 6, and/or Spanish 25. One of these language requirements must be satisfied by the end of the second quarter in residence and the other by the end of the fifth.

Students majoring in an Asian or Islamic art history area must satisfy their European language requirement by the end of the fifth quarter in residence and may do so in any of the three ways listed above. The Asian or Islamic language requirement, however, is normally satisfied by enrolling in an appropriate course sequence for six consecutive quarters (normally beginning with the first quarter 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. You must select an unrelated minor from the group (A or B) which does not include your major area, and 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 (in the 200 and 500 series). At least four of these must be in the 200 series. No more than two 596 courses may be applied toward the graduate or elective course requirement. You must take Art History 201, four courses in the major, and two courses in each minor.

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.

Master of Fine Arts in Art

Art Specialty

Admission

Students are admitted in Fall Quarter only. See "Admission" under the Master of Arts degree in Art (art specialty) 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, printmaking, photography, video, new forms and concepts. No limit to the variations, extent, or value of these designations is intended.

Course Requirements

A minimum of 72 quarter units in the department in courses 101A through 295 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 the field of specialization.

An additional 40 quarter units of art history, theory, and criticism in undergraduate and/or graduate study are required (for students with little or no art history in undergraduate work, some or all of these units may be taken as electives beyond the 40 units of graduate coursework required). 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 in Art (art specialty), as noted above.

Design Specialty

Admission

Admission requirements and procedures are essentially the same as for the M.A. (design specialty), 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. M.F.A. applicants are not admitted on a provisional basis when there are deficiencies in the portfolio, preparation, or academic record.

Major Fields or Subdisciplines

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 eight units must be from Design 290A-290B-290C 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 series must be taken in the field of specialization.

A minimum of 40 quarter units of art history in undergraduate or graduate study is also required. For students with little or no art history in undergraduate work, some or all of these units may be taken as electives beyond the 40 units of graduate coursework required. 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

Same as the plan offered for the Master of Arts degree in Art (design specialty), as noted above.

Ph.D. in Art History

Admission

The M.A. in Art History is required for admission to the Ph.D. degree program. 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. in Art History course requirements). Deficiencies must be made up during the first two quarters in residence and may not be applied toward the eight courses required for the Ph.D.

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).

(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 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 graduate assistant.

Reading knowledge of French and German is requisite for admission at the Ph.D. level for those majoring in all areas except Asian, Islamic, or pre-Columbian. You may demonstrate this knowledge by submitting an Educational Testing Service (ETS) score of 600 or better, taking and passing the relevant department language examination(s), or completing UCLA's German 6 and/or French 5 with a grade of B or better.

Students intending to major in an Asian or Islamic art history area must demonstrate, by the means 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 should consult the chair of the department's language committee to determine if their previous examination is acceptable.

Prospective students may contact the Graduate Assistant, Department of Art, Design, and Art History, 1300 Dickson, UCLA, Los Angeles, CA 90024, for brochures and information. The department has no special departmental application.

Major Fields or Subdisciplines

See "Admission" under the Master of Arts degree in Art History above.

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 fields requiring such reading fluency are Egypt, ancient Near East, classical, medieval, Renaissance, Islamic, pre-Columbian, and all Asian areas. The applicability of this requirement, the language(s) required, and the exact means of satisfying the requirement are determined in consultation with the major adviser.

Course Requirements

The Ph.D. requires demonstrated competence in a major and two minors. If you choose two art history minors, one must be selected from the group (A or B) which does not include the major area (see group listings under Master of Arts in Art History above). If you choose one extra-departmental minor, it must be related to the major field in art history. The other minor may or may not be related to the major area.

You must have taken a minimum of four courses (at least one a graduate course) in one or more unrelated areas during the M.A. and/or Ph.D. program. Credit may be given for coursework at another institution.

In all, a minimum of eight graduate and upper division courses are required, of which at least three must be art history courses on the graduate (200 and 500) level. Of this total, you must take at least three, and may take up to five, extra-departmental upper division and/or graduate courses, which have to be approved by the major adviser.

Qualifying Examinations

After completion of coursework and language study, you must take the Ph.D. written comprehensive examination to test your breadth and depth of knowledge in the major and both minor fields of study. If you fail the examination, or any part thereof, that portion may be repeated during the subsequent quarter 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.

Art

Lower Division Courses

5A. Introduction to Art. Studio, eight hours; five hours arranged. Creative work in fine arts related to historical and contemporary issues selected from media such as drawing, painting, sculpture, printmaking, photography, and new forms and concepts (performance, video, nonobject art).

5B. Introduction to Art. Studio, eight hours; five hours arranged. *Prerequisite: course 5A.* Continuation of course 5A.

5C. Introduction to Art. Studio, eight hours; five hours arranged. Prerequisites: courses 5A, 5B. Continuation of courses 5A, 5B.

15A. Intermediate Art. (Formerly numbered 15.) Studio, eight hours; five hours arranged. Prerequisites: courses 5A, 5B, 5C. Continuation of courses 5A, 5B, 5C, with increased emphasis on individual creative development.

15B. Intermediate Art. Studio, eight hours; five hours arranged. Prerequisites: courses 5A, 5B, 5C, 15A. Continuation of courses 5A, 5B, 5C, 15A, with increased emphasis on individual creative development.

22. Art and Artists/History and Theory. Lecture/discussion, three hours. Discussion and analysis of artists and art, historical and contemporary.

Upper Division Courses

130. Drawing. Studio, eight hours; five hours arranged. Prerequisites: courses 5A, 5B, 5C, 15, and 21, or consent of instructor. Varied media and subject; drawing as an intrinsically expressive mode. May be repeated for a maximum of 16 units.
Mr. Elgart, Mr. Stussy, and the Staff (F,W,Sp)

133. Painting. Studio, eight hours; five hours arranged. Prerequisites: courses 5A, 5B, 5C, 15, and 21, or consent of instructor. Varied media, purposes, subjects, structures, presentation, meaning. May be repeated for a maximum of 16 units.
Mr. Amato and the Staff (F,W,Sp)

137. New Forms and Concepts. Studio, eight hours; five hours arranged. Prerequisites: courses 5A, 5B, 5C, 15, and 21, or consent of instructor. Varied purposes, forms, processes, post-concept, other approaches to art and nonart, objects, events, installations, and non-studio pieces, film, and video. May be repeated for a maximum of 16 units.
Mr. Burden and the Staff (F,W,Sp)

140. Printmaking. Studio, eight hours; five hours arranged. Prerequisites: courses 5A, 5B, 5C, 15, and 21, 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. Mr. R.B. Brown and the Staff (F,W,Sp)

145. Sculpture. Studio, eight hours; five hours arranged. Prerequisites: courses 5A, 5B, 5C, 15, and 21, 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 and the Staff (F,W,Sp)

147. Photography. Studio, eight hours; five hours arranged. Prerequisites: courses 5A, 5B, 5C, 15, and 21, or consent of instructor. Selected studies in photography, historical and contemporary: documentation, non-silver methods, extended forms, color, mixed media. Photography as a medium of artistic expression. May be repeated for a maximum of 16 units. Mr. Heinecken and the Staff (F,W,Sp)

148. Advanced Analysis and Criticism. Discussion, four hours; studio, nine hours arranged. Prerequisites: courses 5A, 5B, 5C, 15, and 21, or consent of instructor. Analysis and criticism of individual creative work and ideas. May be repeated for a maximum of 16 units. (F,W,Sp)

149. Advanced Art and Artists/History and Theory. Lecture/discussion, three hours. Prerequisite: consent of instructor. Discussion and analysis of artists and art, historical and contemporary. May be repeated twice for credit. (F,W,Sp)

197. Honors Course. Hours to be arranged. Prerequisites: 3.0 GPA overall, 3.5 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. Graduate Painting (2 to 8 units). Hours to be arranged. Tutorial studies in traditional and new forms and concepts media, as well as in our media specializations. Independent development and original research.

272. Graduate Printmaking (2 to 8 units). Tutorial studies in traditional and experimental printmaking. Selected studies in intaglio, lithograph, woodcut, silk screen, photo printmaking, and mixed media.
Mr. R.B. Brown

273. Graduate Sculpture (2 to 8 units). Tutorial studies with specific attention to the ongoing nature, specificity, and approach to the student's particular discipline. Individual studio visits and consultation.
Mr. Ray

274. Graduate Photography (2 to 8 units). A tutorial or tutorial/seminar course concerned with the particular artistic development of each student's personal photographic artwork. Emphasis on the expressive, original, humanistic values of individual art. Adjacent projects in the history and theory of the photographic medium. Mr. Heinecken

279. Seminar in Art. Aspects of current and historic art. Being an artist. Sources, ideas, processes, development, individualization, evaluation. Art and nonart. Art in society. Content, formal and aesthetic issues. Language, perception, reference structures, media.

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. S/U grading.

596. Directed Individual Study or Research (2 to 8 units). Prerequisite: consent of instructor.

Art History

Lower Division Courses

50. Ancient Art. (Formerly numbered Art 50.) Lecture, three hours; quiz, one hour. Prehistoric, Egyptian, Mesopotamian, Aegean, Greek, Hellenistic, and Roman art and architecture. Ms. Downey

51. Medieval Art. (Formerly numbered Art 51.) Lecture, three hours; quiz, one hour. Early Christian, Byzantine, Islamic, Carolingian, Ottomian, Romanesque, and Gothic art and architecture.
Ms. Kalavrezou-Maxeiner

54. Modern Art. (Formerly numbered Art 54.) Lecture, three hours; quiz, one hour. Art and architecture from 1800 to the present in Europe and the United States. Mr. Boime, Mr. Kunzle

55. Africa, Oceania, and Native America. (Formerly numbered Art 55.) Lecture, three hours; quiz, one hour. Comparative approach, emphasizing economic, cultural, and historical aspects of selected artistic traditions which developed outside the spheres of influence of the major European and Asiatic civilizations. Mr. Rubin

56. Asian Art. (Formerly numbered Art 56.) Lecture, three hours; discussion, one hour. A survey of the major artistic monuments of the Indo-Iranian, Southeast and Central Asian, and East Asian cultures, concentrating on formal and iconographical problems, as well as the social and political conditions under which artworks were patronized and produced.
Mr. R.L. Brown, Mr. Powers

57. Renaissance and Baroque Art. (Formerly numbered Art 57.) Lecture, three hours; discussion, one hour. History of art and architecture in Western Europe from 1400 to 1750.
Ms. Weisz, Ms. Woods-Marsden

Upper Division Courses

101A. Egyptian Art and Archaeology. (Formerly numbered Art 101A.) Lecture, three hours. A study of architecture, sculpture, painting, and minor arts during the Predynastic period and Old Kingdom.
Mr. Preziosi

101B. Egyptian Art and Archaeology. (Formerly numbered Art 101B.) Lecture, three hours. A study of architecture, sculpture, painting, and minor arts during the First Intermediate period, Middle Kingdom, and Second Intermediate period. Mr. Preziosi

101C. Egyptian Art and Archaeology. (Formerly numbered Art 101C.) Lecture, three hours. A study of architecture, sculpture, painting, and minor arts during the Empire (or New Kingdom). Mr. Preziosi

102. Art of the Ancient Near East. (Formerly numbered Art 102.) A study of architecture, sculpture, painting, and minor arts in Mesopotamia, Asia Minor, North Syria, Phoenicia, Palestine, Persia, and Cyprus from the origins to the 5th century B.C.
Mr. Preziosi

103A. Greek Art. (Formerly numbered Art 103A.) Lecture, three hours. Prerequisite: course 50. A survey of the art and architecture of Greece from the Archaic period through the 5th century B.C.
Ms. Downey, Mr. Preziosi

103B. Hellenistic Art. (Formerly numbered Art 103B.) Lecture, three hours. Prerequisites: courses 50, 103A. The art and architecture of the Greek world from the 4th through the 1st century B.C., including the transmittal of Greek art forms to the Roman world.
Ms. Downey

103C. Roman Art. (Formerly numbered Art 103C.) Lecture, three hours. Prerequisite: course 50. The art and architecture of Rome and its Empire from ca. 300 B.C. to A.D. 300. Ms. Downey

103D. Etruscan Art. (Formerly numbered Art 103D.) Lecture, three hours. Prerequisite: course 50. The arts of the Italic peninsula from ca. 1000 B.C. to the end of the Roman Republic. Ms. Downey

103E. Late Roman Art. (Formerly numbered Art 103E.) Lecture, three hours. Prerequisites: courses 50, 103C. The art of the Roman Empire from the 2nd through the 4th century (A.D.).
Ms. Downey, Ms. Kalavrezou-Maxeiner

104A. Western Islamic Art. (Formerly numbered Art 104A.) Lecture, three hours. Not open for credit to students with credit for former course 104B. From the Tigres and Euphrates Rivers to Spain, 7th to 16th century. Ms. Bierman

104B. Eastern Islamic Art. (Formerly numbered Art 104B.) Lecture, three hours. Not open for credit to students with credit for former course 104C. From the Tigres and Euphrates Rivers through Afghanistan and parts of central Asia; the Ottoman Empire.
Ms. Bierman

C104C. Problems in Islamic Art. (Formerly numbered Art C104C.) Lecture, three hours. Not open for credit to students with credit for former course 104D. Monuments or theoretical problems related to Islamic culture and artistic production. Concurrently scheduled with course C214. Ms. Bierman

105A. Early Christian Art. (Formerly numbered Art 105A.) Lecture, three hours. Prerequisite: course 51 or consent of instructor. The origins and development of the architecture, sculpture, and painting of early Christianity to the iconoclastic controversy.
Ms. Kalavrezou-Maxeiner

105B. Early Medieval Art. (Formerly numbered Art 105B.) 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. (Formerly numbered Art 105C.) Prerequisite: course 51. Art and architecture of Western Europe in the 11th and 12th centuries.

105D. Gothic Art. (Formerly numbered Art 105D.) Lecture, three hours. Prerequisite: course 51. Art and architecture of Europe in the 13th century.

105E. Byzantine Art. (Formerly numbered Art 105E.) Lecture, three hours. Prerequisite: course 51 or consent of instructor. The theory and development of Byzantine art from the iconoclastic controversy to 1453 and the diffusion of Byzantine art in Armenia, Georgia, the Caucasus, and Russia.
Ms. Kalavrezou-Maxeiner

106A. Italian Art of the Trecento. (Formerly numbered Art 106A.) Lecture, three hours. Prerequisite: course 57 or consent of instructor. Art and architecture of the 14th century. Ms. Weisz

106B. Italian Art of the Quattrocento. (Formerly numbered Art 106B.) Lecture, three hours. Prerequisite: course 57. Art and architecture of the 15th century. Ms. Weisz, Ms. Woods-Marsden

106C. Italian Art of the Cinquecento. (Formerly numbered Art 106C.) Lecture, three hours. Prerequisite: course 57. Art and architecture of the 16th century. Ms. Weisz, Ms. Woods-Marsden

108A. Northern Renaissance Art. (Formerly numbered Art 108A.) Lecture, three hours. Prerequisite: course 57. Painting and sculpture in the Northern Renaissance.

108B. Northern Renaissance Art. (Formerly numbered Art 108B.) Lecture, three hours. Prerequisite: course 108A. Painting and sculpture in the Northern Renaissance.

109A. Baroque Art. (Formerly numbered Art 109A.) Lecture, three hours. Prerequisite: course 57. Art and architecture of Italy and Spain, 16th to late 17th century. Ms. Weisz

109B. Baroque Art. (Formerly numbered Art 109B.) 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. (Formerly numbered Art 109C.) Lecture, three hours. Prerequisite: course 57. Painting, architecture, and sculpture of the 18th century examined in the light of political and intellectual developments. Special emphasis on the effect of the rise of democratic institutions, especially the French Revolution. Mr. Kunzle

109D. Art and Architecture of Georgian England. (Formerly numbered Art 109D.) Lecture, three hours.
Ms. Bennett

110A. European Art of the 19th Century. (Formerly numbered Art 110A.) Lecture, three hours. Prerequisite: course 54. Neoclassicism and Romanticism, with emphasis on France — the development and influence of David, Ingres, and Delacroix.
Mr. Boime, Mr. Kunzle

110B. European Art of the 19th Century: Realism and Impressionism. (Formerly numbered Art 110B.) Lecture, three hours. Prerequisite: course 54. An inquiry into the problem of realism, with emphasis on French art, but including developments in England and Germany. Mr. Boime, Mr. Kunzle

110C. European Art of the 19th and 20th Centuries: Postimpressionism to Surrealism. (Formerly numbered Art 110C.) Lecture, three hours. Prerequisite: course 54. A study of the major developments in modern art, 1880s to 1930, including Seurat, Cezanne, Gauguin, Van Gogh, Art Nouveau, Fauvism, German expressionism. Mr. Kunzle

110D. Contemporary Art. (Formerly numbered Art 110D.) Lecture, three hours. Prerequisite: course 54. European and American art since World War II.
Mr. Boime, Mr. Kunzle

110E. Political Perspectives on Contemporary Art (Post-World War II). (Formerly numbered Art 110E.) Prerequisite: course 54. Vanguard painting in the U.S. (Picasso, abstract expressionism, and pop art, etc.) and the popular media of posters, comic strips, and murals, all of which are analyzed according to the dominant values under capitalism: alienation, consumerism, racism, imperialism, and sexism. Antidotal emphasis on protest art and women's art in the U.S. and the art of the socialist cultures of Cuba since 1959 and Chile from 1970 to 1973.
Mr. Kunzle

110F. Selected Topics in Modern Art. Lecture, three hours. Prerequisite: course 54. Changing topics in modern art (post-1780) which reflect the interests of individual regular and visiting faculty members.

112A. American Art. (Formerly numbered Art 112A.) Lecture, three hours. Architecture in the United States from the Colonial period to the 19th century.

112B. American Art. (Formerly numbered Art 112B.) Lecture, three hours. Painting and sculpture in the United States from the Colonial period to the 19th century.

112C. American Art. (Formerly numbered Art 112C.) Lecture, three hours. Art and architecture in the United States in the 20th century.

114A. The Early Art of India. (Formerly numbered Art 114A.) Lecture, three hours. Not open to freshmen. Survey of Indian art from the Indus Valley cultures to the 10th century. Emphasis on the Buddhist and Hindu backgrounds of the arts.
Mr. R.L. Brown

114B. Chinese Art. (Formerly numbered Art 114B.) Lecture, three hours. Not open to freshmen. Survey of the arts of China from the Neolithic times to the 18th century. The various arts, related to the developing historical background of the country.
Mr. Powers

114C. Japanese Art. (Formerly numbered Art 114C.) Lecture, three hours. Not open to freshmen. Japanese art from its beginning in prehistory through the 19th century. Emphasis on the development of Buddhist art and its relationship with the culture.
Mr. McCallum

114D. The Later Art of India. (Formerly numbered Art 114D.) Lecture, three hours. Prerequisite: course 114A or consent of instructor. Survey of Indian art from the 10th to the 19th century. The decline of Buddhist art, the last efflorescence of Hindu architecture, Muslim painting and architecture, and Rajput painting. Mr. R.L. Brown

C115A. Advanced Indian Art. (Formerly numbered Art C115A.) Lecture, three hours. Prerequisite: course 114A. Study in Indian sculpture and architecture. Concurrently scheduled with course C257.
Mr. R.L. Brown

C115B. Advanced Chinese Art. (Formerly numbered Art C115B.) Lecture, three hours. Prerequisite: course 114B. Study in Chinese painting and sculpture. Concurrently scheduled with course C258.
Mr. Powers

C115C. Advanced Japanese Art. (Formerly numbered Art C115C.) 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: course 114B or consent of instructor. The period generally known as "early China," ranging from the earliest Neolithic artifacts to the end of the T'ang dynasty (618-906). Concurrently scheduled with course C261A.
Mr. Powers

C115E. Chinese Art of the Sung and Yuan Dynasties, 906-1368. Lecture, three hours. Prerequisite: course 114B or consent of instructor. The evolution of Chinese painting and some of the sculpture from the Sung through Yuan dynasties (906-1368). Concurrently scheduled with course C261B. Mr. Powers

C115F. Chinese Art from the Ming Dynasty to the People's Republic, 1368 to the Present. Lecture, three hours. Prerequisite: course 114B or consent of instructor. The evolution of Chinese painting and graphic art from the Ming dynasty through the late 1970s. Concurrently scheduled with course C261C.
Mr. Powers

C117A. Advanced Studies in Pre-Columbian Art: Mexico. (Formerly numbered Art C117A.) Lecture, three hours. Prerequisite: course 118B or consent of instructor. A study of the 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. Advanced Studies in Pre-Columbian Art: Central America. (Formerly numbered Art C117B.) Lecture, three hours. Prerequisite: course 118B or consent of instructor. A study of the art of selected cultures of southern Mesoamerica and the remainder of Central America from ca. 2000 B.C. to the Conquest, with particular emphasis on the history and iconography of the art of the Maya. Concurrently scheduled with course C218B. Ms. Klein

C117C. Advanced Studies in Pre-Columbian Art: The Andes. (Formerly numbered Art C117C.) Lecture, three hours. Prerequisite: course 118B or consent of instructor. A study of the art of selected cultures of Colombia, Ecuador, Peru, and Bolivia from ca. 4000 B.C. to the Conquest, with particular emphasis on the history and iconography of the art of Peru. Concurrently scheduled with course C218C.
Ms. Klein

118A. The Arts of Oceania. (Formerly numbered Art 118A.) Lecture, three hours. Prerequisite: course 55 or consent of instructor. Survey of the arts of the major island groupings of the Pacific, emphasizing style-regions and broad historical relationships.
Ms. Klein, Mr. Rubin

118B. The Arts of Pre-Columbian America. (Formerly numbered Art 118B.) Lecture, three hours. Prerequisite: course 55 or consent of instructor. Survey of the sequence of cultures which developed in the area between (and including) Mexico and Peru from ca. 1000 B.C. to the Conquest. Ms. Klein

118C. The Arts of Sub-Saharan Africa. (Formerly numbered Art 118C.) Lecture, three hours. Prerequisite: course 55 or consent of instructor. The early arts of Nigeria and a selection of other traditions, emphasizing sculpture. Mr. Rubin

118D. The Arts of Native North America. (Formerly numbered Art 118D.) Lecture, three hours. Prerequisite: course 55 or consent of instructor. Survey of painting, sculpture, and other arts from the Eskimo to the peoples of the Caribbean and the Southwestern United States. Ms. Klein, Mr. Rubin

C119A. Advanced Studies in African Art: Western Africa. (Formerly numbered Art C119A.) Lecture, three hours. Prerequisite: course 118C or consent of instructor. Consideration of the network of stylistic, historical, and cultural relationships existing among the peoples of the upper Niger River Valley and adjacent portions of the Western Guinea Coast. Concurrently scheduled with course C216A. Mr. Rubin

C119B. Advanced Studies in African Art: Central Africa. (Formerly numbered Art C119B.) Lecture, three hours. Prerequisite: course 118C or consent of instructor. Northern and Eastern Nigeria, Cameroun, and the Ogowe River Basin. Concurrently scheduled with course C216B. Mr. Rubin

120A. History of Prints. (Formerly numbered Art 120A.) Lecture, three hours. Development of style and techniques of expression in the graphic arts from the 15th to the early 16th century. Mr. Cuno

120B. History of Prints. (Formerly numbered Art 120B.) Lecture, three hours. Development of style and techniques of expression in the graphic arts from the 16th to the early 19th century. Mr. Cuno

120C. History of Prints. (Formerly numbered Art 120C.) Lecture, three hours. Development of style and techniques of expression in the graphic arts of the later 19th and 20th centuries. Mr. Cuno

121A. Critical and Historical Studies in Drawing. (Formerly numbered Art 121A.) Lecture, three hours. Development of style and means of expression in drawing from the late Middle Ages to the early Renaissance. Mr. Cuno

121B. Critical and Historical Studies in Drawing. (Formerly numbered Art 121B.) Lecture, three hours. Development of style and means of expression in drawing from the late Renaissance to the present. Mr. Cuno

125. Tutorial Conferences. (Formerly numbered Art 125.) Discussion, two hours. Prerequisites: courses 50, 51, 54, 57. Limited to undergraduate art history majors. Discussion of selected art topics, with emphasis on related readings in music, literature, history, and philosophy. Oral reports. P/NP grading.

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, 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.

201. Historiography of Art History. (Formerly numbered Art 201.) Seminar, two hours. A critical study of the various approaches to art history through the centuries, concentrating on one time period, on the work of one or more authors, or on a particular methodology.

202. Methodology of Art History (2 to 8 units). (Formerly numbered Art 202.) Sections oriented to the development and refinement of specialized research skills appropriate to particular periods and areas in the history of art.

203. Museum Studies. (Formerly numbered Art 203.) 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. (Formerly numbered Art 204.) Seminar, two hours. May not be repeated.

205. Studies in Prints. (Formerly numbered Art 205.) Seminar, two hours. Critical studies in the history and connoisseurship of the graphic arts in the Western world. Group or individual studies often culminate in professionally directed exhibitions produced by the Grunwald Center for the Graphic Arts.

206. Studies in Drawings. (Formerly numbered Art 206.) Seminar, two hours. Critical studies in the history and connoisseurship of draughtsmanship in the Western world. Individual studies emphasizing professional presentation. Group studies may culminate in exhibitions sponsored by the Grunwald Center for the Graphic Arts.

210. Egyptian Art. (Formerly numbered Art 210.) Seminar, two hours. Prerequisites: courses 101A, 101B, 101C, 102. Art in Egypt during the Late period and the 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 102A and 102B, or consent of instructor. The art and architecture of the Aegean Bronze Age (3000-1000 B.C.). The monuments or theoretical problems related to the art and culture of Crete, Greece, the Cyclades, or Western Anatolia. Mr. Preziosi

213. Problems in Islamic Art. (Formerly numbered Art 213.) Seminar, two hours. The art and architecture of the Islamic world (Spain to Iran) from the 7th to the 17th century. Monuments or theoretical problems related to Islamic culture and artistic production.

C214. Problems in Islamic Art. (Formerly numbered Art C214.) 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. (Formerly numbered Art C216A.) Lecture, three hours. Selected topics in the arts of peoples living west and north of Cameroun, with emphasis on special problems of theory and method. Concurrently scheduled with course C119A. Mr. Rubin

C216B. Advanced Studies in African Art: Central Africa. (Formerly numbered Art C216B.) Lecture, three hours. Selected topics in the arts of peoples of equatorial, southern, and eastern Africa, with emphasis on special problems of theory and method. Concurrently scheduled with course C119B. Mr. Rubin

C218A. Advanced Studies in Pre-Columbian Art: Mexico. (Formerly numbered Art C218A.) Lecture, three hours. Prerequisite: course 118B or consent of instructor. A study of the 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. Advanced Studies in Pre-Columbian Art: Central America. (Formerly numbered Art C218B.) Lecture, three hours. Prerequisite: course 118B or consent of instructor. A study of the art of selected cultures of southern Mesoamerica and the remainder of Central America from ca. 2000 B.C. to the Conquest, with particular emphasis on the history and iconography of the art of the Maya. Concurrently scheduled with course C117B. Ms. Klein

C218C. Advanced Studies in Pre-Columbian Art: The Andes. (Formerly numbered Art C218C.) Lecture, three hours. Prerequisite: course 118B or consent of instructor. A study of the art of selected cultures of Colombia, Ecuador, Peru, and Bolivia from ca. 4000 B.C. to the Conquest, with particular emphasis on the history and iconography of the 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 the Pacific islands. Ms. Klein, Mr. Rubin

219B. Pre-Columbian Art. Discussion, two hours. Prerequisite: consent of instructor. Studies in selected topics in the art of pre-Hispanic Latin America. Ms. Klein

219C. African Art. Discussion, two hours. Prerequisite: consent of instructor. Studies in selected topics in the art of sub-Saharan Africa. Mr. Rubin

219D. Native North American Art. Discussion, two hours. Prerequisite: consent of instructor. Studies in selected topics in the art of the American Indian. Ms. Klein, Mr. Rubin

220. Oceanic, Pre-Columbian, African, and Native North American Art. (Formerly numbered Art 220.) Discussion, two hours. Prerequisite: consent of instructor. Studies in selected topics comparing the arts of Oceania, Africa, and pre-Columbian and Native North America. Ms. Klein, Mr. Rubin

221. Topics in Classical Art. (Formerly numbered Art 221.) Lecture, two to three hours. Studies in Parthian art. A site-by-site survey of the Near East (Afghanistan, Iran, Iraq, Syria) during the period of Greek and Parthian control. Ms. Downey

223. Classical Art. (Formerly numbered Art 223.) Seminar, two hours. Studies in Greco-Roman art and archaeology. Studies of specific periods, sites, or artistic media. Ms. Downey

225. Medieval Art. (Formerly numbered Art 225.) Seminar, two hours. Studies in selected topics in Byzantine and European medieval art. Ms. Kalavrezou-Maxeiner

226A-226B. Medieval Art and Architecture. (Formerly numbered Art 226A-226B.) Studies in selected topics in Byzantine and European medieval art. Seminar extends over two consecutive quarters. Ms. Kalavrezou-Maxeiner

229. Renaissance and Baroque Paleography. (Formerly numbered Art 229.) Seminar. Prerequisites: Italian, working knowledge of Latin. A workshop approach to documents pertaining to artistic commissions from the 15th to the 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. (Formerly numbered Art 230.) Seminar, two hours. Prerequisite: knowledge of Italian. A study of various aspects of Leonardo's theoretical approach to art in terms of sources and the impact on followers. Mr. Pedretti, Ms. Weisz, Ms. Woods-Marsden

231. Leonardo and Renaissance Theory of Art. (Formerly numbered Art 231.) Seminar, two hours. Prerequisite: knowledge of Italian. A study of various aspects of Leonardo's theoretical approach to art in terms of sources and the impact on followers. Mr. Pedretti

235. Northern Renaissance Art. (Formerly numbered Art 235.) Seminar, two hours. Prerequisite: knowledge of German. Emphasis on a selected topic (e.g., a particular artist, trend, or problem). Research papers and oral reports required.

240. Baroque Art. (Formerly numbered Art 240.) Seminar, two hours. Emphasis on a selected topic (e.g., a particular artist, trend, or problem). Research papers and oral reports required. Language requirements depend on area of focus.

244. Topics in European Art from 1700 to 1900. (Formerly numbered Art 244.) Lecture, two to three hours.

245. European Art from 1700 to 1900. (Formerly numbered Art 245.) Seminar, two hours.

246. Art and Architecture of Georgian England. (Formerly numbered Art 246.) Seminar, two hours. Ms. Bennett

253. Modern Art. (Formerly numbered Art 253.) Seminar, two hours. Changing topics in modern art (including illustration and other popular forms) which reflect the interests of particular faculty members. Political and economic factors affecting the arts of France and Germany at various times. Mr. Boime, Mr. Kunzle, Ms. Tonelli

255. American Art. (Formerly numbered Art 255.) Seminar, two hours. Advanced studies in the evolution of American art, chiefly architecture and painting from the 18th to the early 20th century. Criticism and evaluation of scholarship in the field with innovative research directed toward professional presentation. Ms. Tonelli

C257. Advanced Indian Art. (Formerly numbered Art C257.) Lecture, three hours. Prerequisite: course 114A. Study in Indian sculpture and architecture. Concurrently scheduled with course C115A.

C258. Advanced Chinese Art. (Formerly numbered Art C258.) Lecture, three hours. Prerequisite: course 114B. Study in Chinese painting and sculpture. Concurrently scheduled with course C115B. Mr. Powers

C259. Advanced Japanese Art. Formerly numbered Art C259.) Lecture, three hours. Prerequisite: course 114C. Study in Japanese painting and sculpture. Concurrently scheduled with course C115C. Mr. McCallum

260. Asian Art. (Formerly numbered Art 260.) Seminar, two hours. Advanced studies in the secular and religious artistic traditions of India, China, Japan, and adjacent regions. Topics and geographical areas vary each term. Mr. McCallum, Mr. Powers

C261A. Art of Early China, Neolithic to A.D. 906. Lecture, three hours. Prerequisite: course 114B or consent of instructor. The period generally known as "early China," ranging from the earliest Neolithic artifacts to the end of the T'ang dynasty (618-906). Concurrently scheduled with course C115D. Mr. Powers

C261B. Chinese Art of the Sung and Yuan Dynasties, 906-1368. Lecture, three hours. Prerequisite: course 114B or consent of instructor. The evolution of Chinese painting and some of the sculpture from the Sung through Yuan dynasties (906-1368). Concurrently scheduled with course C115E. Mr. Powers

C261C. Chinese Art from the Ming Dynasty to the People's Republic, 1368 to the Present. Lecture, three hours. Prerequisite: course 114B or consent of instructor. The evolution of Chinese painting and graphic art from the Ming dynasty through the late 1970s. Concurrently scheduled with course C115F. Mr. Powers

265. Fieldwork in Archaeology (2 to 8 units). (Formerly numbered Art 265.) Participation in archaeological excavations or other archaeological research under supervision of the staff.

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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.

597. Preparation for Master's Comprehensive Examination or Ph.D. Qualifying Examinations (2 to 12 units). (Formerly numbered Art 597.) Prerequisite: consent of instructor. S/U grading.

598. Research for and Preparation of Master's Thesis (2 to 12 units). (Formerly numbered Art 598.) Prerequisite: consent of instructor. S/U grading.

599. Research for and Preparation of Ph.D. Dissertation (2 to 12 units). (Formerly numbered Art 599.) Prerequisite: consent of instructor. S/U grading.

Design

Lower Division Courses

30A. Nature of Design. (Formerly numbered Art 30A.) Lecture, three hours; discussion, one hour. Open to nonmajors. Understanding the design process, with emphasis on development of a visual language; a study of historic, scientific, technological, economic, and cultural factors influencing design in our physical environment.

30B. Design Resources. (Formerly numbered Art 30B.) Lecture/discussion, three hours. Prerequisite: course 30A. Investigation of resources for creativity as an introduction to research.

31A. Fundamentals of Design: Color. (Formerly numbered Art 31A.) 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. (Formerly numbered Art 31B.) Lecture, two hours; laboratory, four hours. Course 32B may be taken concurrently. Interrelation of three-dimensional form concepts as a foundation for creativity; origination and solution of problems. Mr. Vasa in charge

32A. Perceptual Drawing. (Formerly numbered Art 32A.) Demonstration/discussion/laboratory, eight hours. Course 31A may be taken concurrently. Translation of perception through delineation, drawing, and other descriptive media. Mr. Vasa in charge

32B. Visual Presentation. (Formerly numbered Art 32B.) Demonstration/discussion/laboratory, eight hours. Prerequisite: course 32A. Course 31B may be taken concurrently. Translation of perception through delineation, drawing, and other descriptive media. Mr. Vasa in charge

33A. Materials and Processes: Ceramics (2 units). (Formerly numbered Art 33A.) Demonstration/discussion/laboratory, four hours. Introduction to processes and media in design. Forming and processing techniques in traditional and contemporary ceramics. May be repeated once. Mr. Saxe in charge

33B. Materials and Processes: Visual Representation (2 units). (Formerly numbered Art 33B.) Demonstration/discussion/laboratory, four hours. Introduction to processes and media in design. Use of drafting instruments. Measuring and construction methods. Orthographic and isometric projection. Information analysis and visualization necessary to support the design task. May be repeated once.

33C. Materials and Processes: Graphic Processes (2 units). (Formerly numbered Art 33C.) Demonstration/discussion/laboratory, four hours. Introduction to processes and media in design. Photography as a means of depicting and recording design concepts. Introduction to photomechanical techniques and photographic generation of images; introduction to graphic presentation production. May be repeated once.

33D. Materials and Processes: Production Processes (2 units). (Formerly numbered Art 33D.) Demonstration/discussion/laboratory, four hours. Introduction to media and processes in design. Introduction to the use of industrial technology. Processes covering the methods of production and handforming. Emphasis on finishing with industrial materials and systems, including plastics, metal, woods, cardboards, and other materials. May be repeated once. Mr. Shapira in charge

33F. Materials and Processes: Textiles (2 units). (Formerly numbered Art 33F.) Demonstration/discussion/laboratory, four hours. Introduction to media and processes in design. Fundamental methods of textile structure and design. May be repeated once. Mr. Kester in charge

33G. Materials and Processes: Design Photography (2 units). (Formerly numbered Art 33G.) Demonstration/discussion/laboratory, four hours. Introduction to media and processes in design. Photography as a means to visualize design concepts. Introduction to camera operation, the processing of photographic materials, laboratory and lighting procedures. Use of the design area laboratory. May be repeated once. Mr. Vasa in charge

34A-34B. History of Design. (Formerly numbered Art 34A-34B.) Lecture, three hours; discussion, one hour. Course 34A is prerequisite to 34B. Analysis of significant concepts of form in relation to social, technological, and historical developments.

Upper Division Courses

(I) Comparative Studies in Design

161A. Ceramics. (Formerly numbered Art 161A.) Lecture, three hours; laboratory, to be arranged. The evolution of ceramic form through geographic, social, and technological influences. Mr. Saxe

161B. World Costume. (Formerly numbered Art 161B.) Lecture, three hours; laboratory, to be arranged. Costume and body ornamentation; symbolic significance and evolving forms within their social, cultural, and geographic context. Ms. McCloskey

161C. Graphics. (Formerly numbered Art 161C.) Lecture, three hours; laboratory, to be arranged. Symbols, signs, and images, within social, cultural, and historical contexts. Mr. W. Brown

161E. Industrialization. (Formerly numbered Art 161E.) Lecture, three hours; laboratory, to be arranged. Industry, design, and society: their evolution and changing relationships.

161G. Shelter. (Formerly numbered Art 161G.) Lecture, three hours; laboratory, to be arranged. The development of interior spaces in relation to structure, visual quality, function, human needs, and behavior.

161H. Textiles. (Formerly numbered Art 161H.) Lecture, three hours. The development of textile forms through geographic, cultural, stylistic, and technological influences. Mr. Kester

161J. Video Imagery. (Formerly numbered Art 161J.) Lecture, three hours; laboratory, to be arranged. Analysis of videographic form. Mr. Kataoka

161K. Historic Fashions. (Formerly numbered Art 161K.) Lecture, three hours; discussion, two hours. Fashions and stylistic changes in Western dress from the late medieval period to the present time, studied in relationship to the social and cultural background of each era. Ms. McCloskey

(II) Concept and Form in Design

162A. Ceramics. (Formerly numbered Art 162A.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 30A, 30B, 31A, 31B, 32A, 32B, or equivalent. Creative development of ceramic materials and processes, with emphasis on handbuilding methods; investigation and analysis of formal and expressive content. May be repeated once. Mr. Saxe

162B. Ceramics. (Formerly numbered Art 162B.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 30A, 30B, 31A, 31B, 32A, 32B, 162A, or equivalent. Emphasis on wheelforming methods and materials science as sources of aesthetic content. May be repeated once. Mr. Saxe

163A. Costume. (Formerly numbered Art 163A.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 30A, 30B, 31A, 31B, 32A, 32B, or equivalent. Introduction to the creative process in designing contemporary costume. May be repeated once. Ms. McCloskey

163B. Costume. (Formerly numbered Art 163B.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 30A, 30B, 31A, 31B, 32A, 32B, 163A, or equivalent. Further development of the design process, with emphasis on the symbolic aspect of contemporary costume. May be repeated once. Ms. McCloskey

164A. Fiber Structure. (Formerly numbered Art 164A.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 30A, 30B, 31A, 31B, 32A, 32B, or equivalent. Design and construction of woven forms. May be repeated once. Mr. Bassler, Mr. Kester

164B. Fiber Structure. (Formerly numbered Art 164B.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 30A, 30B, 31A, 31B, 32A, 32B, or equivalent. The derivation of non-loom methods of fabric construction using pliable elements. May be repeated once. Mr. Bassler, Mr. Kester

165A. Graphics. (Formerly numbered Art 165A.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 30A, 30B, 31A, 31B, 32A, 32B, or equivalent. The development of letterforms, typography, and reproduction technology. May be repeated once. Mr. W. Brown

165B. Graphics. (Formerly numbered Art 165B.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 30A, 30B, 31A, 31B, 32A, 32B, 165A, or equivalent. Empiric and systematic graphic concepts, including methods, symbols, and media technology. May be repeated once. Mr. W. Brown

167A-167B. Form in Industrialized Materials. (Formerly numbered Art 167A-167B.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 30A, 30B, 31A, 31B, 32A, 32B, or equivalent. Course 167A is prerequisite to 167B. Theories and applications of technological materials. Each course may be repeated once.

169A-169B. Product. (Formerly numbered Art 169A-169B.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 30A, 30B, 31A, 31B, 32A, 32B, or equivalent. Course 169A is prerequisite to 169B. Product development in industry; function, aesthetics, and material properties as they relate to human needs. Each course may be repeated once. Mr. Shapira

170A-170B. Interior Spaces. (Formerly numbered Art 170A-170B.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 30A, 30B, 31A, 31B, 32A, 32B, or equivalent. Course 170A is prerequisite to 170B. The definition of structure and space in relation to human needs. Each course may be repeated once. Mr. Shapira

171A. Textiles. (Formerly numbered Art 171A.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 30A, 30B, 31A, 31B, 32A, 32B, or equivalent. Systems of fabric surface organization, including the study of color, pattern, and methods of printing. May be repeated once.

171B. Textiles. (Formerly numbered Art 171B.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 30A, 30B, 31A, 31B, 32A, 32B, or equivalent. Dye systems and theories, including methods of application to fabrics. May be repeated once. Mr. Bassler

172A. Video Imagery. (Formerly numbered Art 172A.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 30A, 30B, 31A, 31B, 32A, 32B, or equivalent. Introduction to electronic image making; videotape and "live" representation. May be repeated once. Mr. W. Brown, Mr. Kataoka

172B. Video Imagery. (Formerly numbered Art 172B.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 30A, 30B, 31A, 31B, 32A, 32B, 172A, or equivalent. Electronic audiographic recording explored for its sensory potential; videotape as record of process and content levels. May be repeated once. Mr. W. Brown, Mr. Kataoka

(III) Proseminars in Design

189. Topics in Design. (Formerly numbered Art 189.) 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 in Design: Senior Studies. (Formerly numbered Art 193.) 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 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 Imagery (2 to 8 units). (Formerly numbered Art 280.) Laboratory, two to four hours. Exploration of graphic processes in visual systems. Design theory and procedures related to typography, letterform, photography, and the graphic film as they communicate visually (i.e., poster, brochure, book, film, and exhibition).

281. Image Transfer (2 to 8 units). (Formerly numbered Art 281.) Laboratory, two to four hours. Advanced experimental work in print processes. Employment of the fixed image, such as offset lithography, offset or letter press, screen printing, and emulsion printing, through photo/mechanical means.

282. Electronic Imagery (2 to 8 units). (Formerly numbered Art 282.) Laboratory, two to four hours. Development of expressive and design applications in video and computer-generated forms. The manipulation of visual, time, motion, and aural characteristics of electronic imagery, developed with video cameras, VTR, and electronic synthesizers experienced and viewed on television monitors or in print forms; images stored on videotapes for later analysis. Mr. Kataoka

283. Costume (2 to 8 units). (Formerly numbered Art 283.) Seminar, two hours; laboratory, two hours. Advanced formulation and development of design ideas for contemporary fashion, dance, drama, or ritual. Research on the evolution of style and modes of expression in historical and modern costumes. Ms. McCloskey

284. Ceramics (2 to 8 units). (Formerly numbered Art 284.) Seminar, two hours; laboratory, two hours. Advanced research and application of ceramic theory and methodology. Emphasis on the development of a responsible personal aesthetic. Includes, but not limited to, investigations of clay and glaze design technology, design for industry, clay as medium, and the historical importance of ceramics as a socially responsible discipline. Mr. Saxe

287. Design and Structure (2 to 8 units). (Formerly numbered Art 287.) Laboratory, two to four hours. Emphasis on developing methods of critical evaluation. Work of a subjective and expressive nature in areas of fiber, ceramics, graphics, and visual presentation. Exploration of form, with emphasis on experimentation with materials and processes. Mr. Vasa

288. Fiber Structure (2 to 8 units). (Formerly numbered Art 288.) Laboratory, two to four hours. Advanced formative work in traditional and experimental processes of fabric construction utilizing fiber media. Mr. Bassler, Mr. Kester

289. Textiles (2 to 8 units). (Formerly numbered Art 289.) Laboratory, two to four hours. Advanced experimental work with the elements of fabric design, including surface manipulation and methods of fabrication, which may include but are not limited to dye and printing processes.

290A-290B-290C. Design Seminar: A Collaborative View. (Formerly numbered Art 290A-290B-290C.) Seminar, three hours:

290A. Formalization Processes. Critical examination of theoretical concepts underlying the design process, including the initiation of an idea, its interpretation, and execution by the designer.

290B. Design Programming. Critical examination of idea development into model or procedural form for execution and/or production by others.

290C. Visual Communication. Critical examination of imagery in its social context.

292. Shelter (2 to 8 units). (Formerly numbered Art 292.) Development of individual projects to investigate concepts of shelter. Exploration of traditional and contemporary forms, methods, and materials. Mr. Shapira

293. Interior Space Design (2 to 8 units). (Formerly numbered Art 293.) The 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. Mr. Kester, Mr. Shapira

294. Industrial Design (2 to 8 units). (Formerly numbered Art 294.) 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. Mr. Shapira

295. Exhibition Design (2 to 8 units). (Formerly numbered Art 295.) 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. Mr. Carter

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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.

Related Courses in Another Department

Classics 251A. Seminar in Classical Archaeology: The Aegean Bronze Age

251B. Seminar in Classical Archaeology: Greco-Roman Architecture

251C. Seminar in Classical Archaeology: Greco-Roman Sculpture

251D. Seminar in Classical Archaeology: Greco-Roman Painting

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, (213) 825-3951

Professors
Elsie Dunin, M.A.
Carol Scothorn, M.A., *Chair*
Marion Scott
Doris Siegel
Allegra Snyder, M.A.
Emma Lewis Thomas, Ph.D.
Pia Gilbert, *Emeritus*
Alma M. Hawkins, Ed.D., *Emeritus*

Associate Professors
Erma Dosamantes-Alperson, Ph.D.
Judy Mitoma, M.A.

Assistant Professor
Angelia Leung-Fisher, M.A.

Lecturer
Suenobu Togi

Visiting Lecturers
Judithe Gantz, M.A.
Margaret Hills
Martha Kalman, M.A.
Margalit Oved Marshall
Emilio Pulido-Huizar, B.A.C.
Stephanie Schoelzel, M.F.A.
Wendy Wyman, Ph.D.
Medha Yodh, M.S.

Scope and Objectives

Bodily skill, artistry, and deep understanding are necessary for an intelligent and creative artist. Dancers at UCLA receive extensive movement experience in contemporary dance, ballet, improvisation, and ethnic forms through practical work in studios, workshops, and performances. The art of dance is explored in costume design, lighting and scenic design, music and sound, and video. The development and relevance of dance is studied through courses in dance history, ethnology, notation, therapy, kinesiology, and education. Modern choreography is the basis of the UCLA program in dance.

UCLA offers the Bachelor of Arts degree in Dance combining preprofessional training with the liberal study essential to the development of each dancer's own creative potential.

The graduate program awards the Master of Arts degree in Dance, designed for students preparing to continue professionally as choreographers, performers, designers, teachers, researchers, and therapists, with specific areas of focus in choreography/performance, dance ethnology, and dance education, and the Master of Arts degree in Dance/Movement Therapy. The therapy program is approved by the American Dance Therapy Association.

Bachelor of Arts Degree

The dance major offered through the College of Fine Arts leads to the Bachelor of Arts degree. Students who wish to confer with the departmental counselor regarding program planning and major requirements should see Wendy Urfrig in the department office.

Preparation for the Major

Required: Twenty-six units of lower division coursework, including Dance 6F-6W-6S, 7F-7W-7S, 11A-11F, 20, 25A, 25B, 48 (must be taken twice), 70.

The Major

Required: A total of 58 units of upper division coursework, including Dance 100A-100B-100C, 113A-113B-113C, C120, 123A, 123B, 132A-132B, 134A, 134B, 141, 144, 148, 149, and eight units selected from upper division dance electives.

Admission to the upper division major is determined by a screening and evaluation conducted during Spring Quarter of your sophomore year. All entering transfer students are auditioned 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 such avenues as studio work. The department has its own application form (in addition to that used by the Graduate Admissions Office); three letters of recommendation and an audition are also required.

The audition looks at your technical proficiency and creative potential, which is expected to be no lower than the level of the UCLA undergraduate junior. 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 (i.e., performance-choreography, education, therapy, or ethnology).

Prospective students may write to the Department of Dance, 124 Dance Building, UCLA, Los Angeles, CA 90024, for departmental brochures which give additional information on the graduate program.

Foreign Language Requirement

There is no foreign language requirement at the graduate level. However, if you specialize in dance ethnology and plan to do fieldwork, it is recommended that, during your graduate study or before, you gain working knowledge of the language of your research area.

Course Requirements

Nine courses (or more depending on your specialization) are required, 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. These may not be classes taken to fulfill deficiencies nor technique or ethnic performance classes.

These requirements are to be partially fulfilled by one of the following patterns: (1) Dance 151, 211A through 211F (choreography/performance); (2) courses 151, 211A-211B-211C, 251A-251B (dance education); (3) courses 280A-280B-280C, 280E (dance ethnology).

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.

The following upper division courses may be applied toward the M.A. degree: Dance 103, 114, 123C, 126, 142, 151, 152, 153, 160, 181A, 181B, 181C, 181D, 182A, 183A, 184B, 187A, 190, 191.

Other areas such as dance history, philosophy and criticism, dance kinesiology, dance production, dance and media, music for dance, and dance notation may be pursued on the advice of the chair or an adviser after you have been in the graduate program for several quarters and have identified a unique interest and competence in one of these areas.

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 graduating with a focus in dance education.

Thesis Plan

If you select the thesis plan, you prepare a report of the results of your original research or creative work. Before beginning work on the thesis, you must obtain approval of the subject and general plan from the graduate faculty committee. If the thesis plan is accepted, a thesis committee is formed. Conditions for reexamination in case you fail the first presentation are based on the support of several faculty members.

Comprehensive Examination Plan

You must declare your intention to take the comprehensive examination plan in your third or fourth quarter by preparing a written proposal of the plan, which is to be presented and defended before a panel of faculty. The examination, administered by a committee of your choice selected from faculty in your specialization, Dance Department faculty outside your

specialization, and faculty outside the department, consists of three written questions and an oral test and takes approximately three days to complete. Each committee member grades each question pass, pass with honors, or fail. In order to pass, each question must be graded pass or better by two of the three committee members. 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, and other courses in psychology (developmental, personality, and group dynamics) are highly recommended.

Course Requirements

Dance 230, 260A-260B-260C, 261A-261B-261C, 262A-262B-262C, 460A-460B-460C, 596A, 596R are required.

The program in dance therapy requires field experience or internship to provide an orientation to the hospital setting and experience as a movement therapist. The second year is designed as an intensive experience: two full days each week, with an opportunity to work with different populations and to assume a broad range of responsibilities in a therapeutic setting.

Thesis Plan

You must prepare a written research thesis on a topic related to your internship. Your thesis is supervised by senior faculty members in your major field and one faculty member from another department.

Comprehensive Examination Plan

You must declare your intention to take the comprehensive examination plan in your third or fourth quarter by preparing a written proposal of the plan, which is to be presented and defended before a panel of faculty. The examination, administered by a committee of your choice selected from faculty in your specialization, Dance Department faculty outside your specialization, and faculty outside the department, consists of three written questions and an oral test and takes approximately three days to complete. Each committee member grades each question pass, pass with honors, or fail. In order to pass, each question must be graded pass or better by two of the three committee members. If any questions are failed, you may retake the failed portion(s) once only.

Lower Division Courses

1A-1F. Fundamentals of Modern Dance (2 units each). (Formerly numbered 10A-10B-10C and 11A-11B-11C.) Studio, three hours. Designed for non-dance majors. Courses must be taken in sequence. Study of dance technique, improvisation, and choreography. Critical viewing, reading, and discussion of modern dance artists' historical/aesthetic styles. (F,W,Sp)

6F-6W-6S. Fundamentals of Ballet (2 units per year). (Formerly numbered 30AF-30AW-30AS.) Laboratory, four hours. Prerequisite: dance major or consent of instructor. Students admitted in Fall Quarter only. Study of ballet techniques and principles, including dance terminology. In Progress grading (credit to be given only on completion of course 6S). Ms. Hills (F,W,Sp)

7F-7W-7S. Fundamentals of Ballet (2 units per year). (Formerly numbered 30BF-30BW-30BS.) Laboratory, four hours. Prerequisite: dance major or consent of instructor. Students admitted in Fall Quarter only. Study of ballet techniques and principles, including dance terminology. In Progress grading (credit to be given only on completion of course 7S). Ms. Hills (F,W,Sp)

10. Introduction to Dance (2 units). (Formerly numbered 50.) An introduction to the many and varied theoretical aspects of dance as a discipline. Mrs. Snyder

11A-11F. Modern Dance Technique and Choreography (2 units each). (Formerly numbered 36A-36B-36C and 37A-37B-37C.) 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 an understanding of the creative process of structure and form in dance compositions. Ms. Kalman, Ms. Leung-Fisher (F,W,Sp)

20. Music Analysis for Dance (2 units). (Formerly numbered 35.) Lecture, two hours; laboratory, one hour. Study of the elements of music, music structures, and their relationship to dance, with emphasis on rhythmic analysis, dance accompaniment, and teacher-accompanist roles. (F)

25A. Beginning Labanotation (2 units). (Formerly numbered 38A.) Lecture, two hours; laboratory, one hour. Introduction to writing dance/movement in Labanotation. Basic skills in reading dances from the notated score. Mrs. Dunin, Ms. Leung-Fisher, Mrs. Scothorn (F,W)

25B. Intermediate Labanotation (2 units). (Formerly numbered 38B.) Lecture, two hours; laboratory, one hour. Prerequisite: course 25A. Continued studies in Labanotation. Experiences in recording dance/movement and interpreting the notated score. Ms. Leung-Fisher, Mrs. Scothorn (W,Sp)

40. Introduction to Dance Theater (2 units). (Formerly numbered 52.) Lecture, two hours; laboratory, two hours. Prerequisite: course 11A or consent of instructor. Study of the creative elements of choreography, sound score, and design and how they interact with the practical elements of personnel, materials, and procedures in presenting dance theater. Mrs. Siegel (W)

48. Laboratory in Dance Production (1 unit). (Formerly numbered 92.) 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. (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 (F,Sp)

71B. Dance of Indonesia (2 units). (Formerly numbered 71A and 71H.) Studio, three hours. Dance experience is not required. Introduction to the technique and repertory of dance traditions (e.g., Java, Bali, Sunda). Ms. Mitoma (F,W,Sp)

71C. Dance of Japan (2 units). (Formerly numbered 71G.) Studio, three hours. Dance experience is not required. Technique and repertory from the court dance tradition (e.g., Gagaku). Mr. Togi (F,W,Sp)

71D. Dance of India (2 units). (Formerly numbered 71E.) Studio, three hours. Dance experience is not required. Introduction to dance in India, with emphasis on a particular tradition (e.g., Bharata Natyam). Ms. Yodh (F,W,Sp)

71E. Dance of Korea (2 units). (Formerly numbered 71Q.) Studio, three hours. Dance experience is not required. Technique and repertoire of a selected dance tradition (e.g., Korean classical and folk).

72B. Dance of Ghana (2 units). (Formerly numbered 71B.) Studio, three hours. Dance experience is not required. Introduction to the technique and repertory of a selected region.

73B. Dance of Mexico (2 units). (Formerly numbered 71J.) Studio, three hours. Dance experience is not required. Introduction to forms and styles in dances of several ethnographic regions. Emphasis on identifying dance characteristics through actual dancing. Mr. Pulido-Huizar (F,W,Sp)

74B. Dance of Yugoslavia (2 units). (Formerly numbered 71P.) Studio, three hours. Dance experience is not required. Introduction to forms and styles in dances of several ethnographic regions. Emphasis on identifying dance characteristics through actual dancing. Mrs. Dunin (F,W)

74C. Dance of Spain (2 units). (Formerly numbered 71M.) Studio, three hours. Dance experience is not required. Technique and repertory of dances from selected ethnographic regions.

76B. Dance of Israel (2 units). (Formerly numbered 71F.) Studio, three hours. Dance experience is not required. Technique and repertory from selected ethnographic regions. Ms. Marshall (F,W,Sp)

79A-79Z. Dance of a Selected Culture (2 units each). Studio, three hours. Introduction to forms and styles in dance of a selected culture area.

80A-80B. Movement as Cultural Behavior (2 units each). (Formerly numbered 46A-46B.) Studio, three hours. Prerequisite: world arts and cultures major or consent of instructor. Studio/laboratory examination of the 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 (W,Sp)

Upper Division Courses

100A-100B-100C. Modern Dance: Intermediate Technique and Choreography. (Formerly numbered 150A-150B-150C.) 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 the stage space. Mrs. Scothorn (F,W,Sp)

101A-101B-101C. Intermediate Modern Dance Technique (2 units each). (Formerly numbered 112A-112B-112C.) Lecture, two hours; laboratory, two hours. Technique levels II and III. Emphasis on increasing technical skill. Each course may be repeated once. Mr. Brown, Mr. Ganado, Ms. Kalman, Ms. Leung-Fisher (F,W,Sp)

102A-102B-102C. Advanced Modern Dance Technique (2 units each). (Formerly numbered 114A-114B-114C.) Lecture, one hour; studio, five hours. Technique levels IV and V. Studies in advanced technique, with emphasis on performing skills. Each course may be repeated once. Mr. Brown, Mr. Ganado, Ms. Kalman (F,W,Sp)

103. Improvisation in Dance (2 units). (Formerly numbered 116.) Studio, four hours. Prerequisite: dance major or consent of instructor. Development of an aesthetic perspective through the use of imagery, sound, and other art. Concentration and projection.
Ms. Kalman (W)

106A-106B-106C. Intermediate Ballet (2 units each). (Formerly numbered 131A-131B-131C.) Lecture, one hour; laboratory, three hours. Prerequisites: courses 7F-7W-7S or consent of instructor. Courses must be taken in sequence. Study of techniques and principles of classical ballet, including phrasing, combinations, and repertory. Ms. Hills (F,W,Sp)

107A-107B-107C. Advanced Ballet (2 units each). (Formerly numbered 132A-132B-132C.) Lecture, two hours; laboratory, six hours. Prerequisite: course 106C. Advanced technique in classical ballet, with emphasis on performing skills. Each course may be repeated once. Ms. Hills (F,W,Sp)

113A-113B-113C. Advanced Modern Dance: Technique, Choreography, and Performance (2 units each). (Formerly numbered 153A-153B-153C.) Lecture, three hours; laboratory, four hours. Prerequisite: course 100C. Advanced technique studies, with emphasis on developing performance qualities: dynamics, focus, projection, expressive range. Independent work in solo and group choreography culminating in a final performance project. (F,W,Sp)

114. Form and Structure in Choreography. (Formerly numbered 155.) Lecture, one hour; laboratory, three hours. Prerequisite: dance major or consent of instructor. A study of the craft of choreography. Emphasis on breath movement, phrasing, ABA, theme and variations, rondo. Learning to discipline and shape the creative impulse into specific forms, with emphasis on staging. Ms. Scott (Sp)

C120. Music as Dance Accompaniment. (Formerly numbered C154.) 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 the dance performance. May be concurrently scheduled with course C220. (W)

123A. Anatomy for the Dancer. (Formerly numbered 111A.) Prerequisite: course 11F or consent of instructor. A study of the human muscular-skeletal system as related to dance. Ms. Gantz (F,W)

123B. Applied Principles of Conditioning and Correctives for the Dancer. (Formerly numbered 111B.) Prerequisite: course 123A. Study and application of the biological and physical principles of human movement as related to dance. Prevention and care of dance injuries. Ms. Gantz (W,Sp)

123C. Projects in Dance Kinesiology. (Formerly numbered 111C.) Prerequisite: course 123B. In-depth study of selected topics introduced in courses 123A and 123B. Ms. Gantz (Sp)

125. Principles of Movement Analysis: Laban Analysis. (Formerly numbered 138.) Lecture, two hours; laboratory, two hours. Prerequisite: dance major or consent of instructor. Basic principles of Laban analysis. Emphasis on experiential understanding of movement through the study of motion factors and elementary concepts of spatial dynamics. Focus on the qualitative area of movement to further comprehension of dance as a creative art form.
Ms. Gantz

126. Advanced Labanotation. (Formerly numbered 159.) Lecture, two hours; laboratory, two hours. Prerequisite: course 25B. Skills in reading and writing complex movement; reconstruction and score preparation in modern dance, ballet, and ethnic dance.
Mrs. Dunin, Mrs. Scothorn (Sp)

132A-132B. Philosophical Bases and Trends in Dance (4 units, 2 units). (Formerly numbered 158A-158B.) Course 132A is prerequisite to 132B. Critical analysis of dance as a creative experience and the role of professional and educational dance in our society. Study of selected approaches to current development in dance. (W,Sp)

134A. History of Dance in Western Culture, Origins to 1600. (Formerly numbered 151A.) The development of dance styles in Western culture; function in society and relationship to contemporary artistic expression; ancient Egypt through European Renaissance. Mrs. Thomas (F)

134B. History of Dance in Western Culture, 1600 to the Present. (Formerly numbered 151B.) Prerequisite: course 134A or consent of instructor. Survey of dance styles in European and American cultures from early baroque to the present. Mrs. Thomas (W)

141. Lighting Design for Dance Theater (2 units). (Formerly numbered 152A.) Lecture, two 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. Mrs. Siegel (F,Sp)

142. Advanced Studies in Dance Theater Lighting (2 or 4 units). (Formerly numbered 152C.) Lecture, four hours; laboratory, four or more hours. Prerequisite: course 141 or consent of instructor. Analysis of diverse dance theater lighting problems at an advanced level and individual development of creative solutions. May be taken for a maximum of four units.
Mrs. Siegel (W,Sp)

144. Costume and Scenic Design Concepts for Dance Theater (2 units). (Formerly numbered 152B.) Lecture, two hours; laboratory, two hours. Prerequisite: course 11F or consent of instructor. General study of costume history, selected historical styles, and introductory drawing as a conceptual basis for visual awareness in theatrical dance design. Designer-choreographer relationships.
Ms. Schoelzel (F,Sp)

148. Advanced Laboratory in Dance Production (1 unit). (Formerly numbered 192.) 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. (Sp)

149. Dance Performance Practicum (1 unit). (Formerly numbered 193.) Laboratory, four hours. Dancing in selected choreography in public performance. P/NP grading. (Sp)

151. Foundations of Dance Education. (Formerly numbered 127.) 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. Leung-Fisher (F,W)

152. Dance as Culture in Education. (Formerly numbered 128.) 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. (Formerly numbered 160.) 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-Fisher (Sp)

160. Introduction to Dance/Movement Therapy (2 units). (Formerly numbered 160A.) Lecture, one hour; laboratory, three hours. Prerequisite: course 100C or consent of instructor. Group processes and dynamics in both nonverbal (movement) and verbal modes of experience, so students achieve a significant level of psychological insight to assist in functioning professionally as effective dance/movement therapists. Ms. Wyman (F)

171B. Dance of Indonesia (2 units). (Formerly numbered 171A and 171H.) 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. Ms. Mitoma (W,Sp)

171C. Dance of Japan (2 units). (Formerly numbered 171G.) 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.
Mr. Togi (F,W,Sp)

171D. Dance of India (2 units). (Formerly numbered 171E.) 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.
Ms. Yodh (F,W,Sp)

171E. Dance of Korea (2 units). (Formerly numbered 171Q.) 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.

172B. Dance of Ghana (2 units). (Formerly numbered 171B.) Studio, three hours. Prerequisite: course 72B. Technique and repertoire. Dance in relation to music, aesthetic principles, and cultural context. May be repeated once.

173B. Dance of Mexico (2 units). (Formerly numbered 171J.) Studio, three hours. Prerequisite: course 73B. Dance techniques of selected ethnographic regions. May be repeated once.
Mr. Pulido-Huizar (F,W,Sp)

174B. Dance of Yugoslavia (2 units). (Formerly numbered 171P.) Studio, three hours. Prerequisite: course 74B. Dance techniques of selected ethnographic regions. May be repeated once.
Mrs. Dunin (W,Sp)

174C. Dance of Spain (2 units). (Formerly numbered 171M.) 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.

176B. Dance of Israel (2 units). (Formerly numbered 171F.) Studio, three hours. Prerequisite: course 76B. Technique and repertory from selected ethnographic regions. May be repeated once.
Ms. Marshall (F,W,Sp)

179A-179Z. Dance of a Selected Culture (2 units each). Studio, three hours. Prerequisite: course 79 (in corresponding culture area). The dance technique of a selected culture area. May be repeated for a maximum of four units.

180A-180B. Introduction to Dance Ethnography. (Formerly numbered 141A-141B.) A study of the physical, environmental, and cultural influences on ritual and social dance forms. Basic observational and recording techniques, including beginning Labanotation. Mrs. Dunin (W,Sp)

181A. Dance Cultures of Asia. (Formerly numbered 140B.) An introduction to the dance cultures of Asia. How the 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.
Ms. Mitoma (F)

181B. Dance in Southeast Asia. (Formerly numbered 144.) Prerequisite: course 181A or consent of instructor. A 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. Ms. Mitoma

181C. Dance in East Asia. (Formerly numbered 145.) Prerequisite: course 181A or consent of instructor. A survey of the dances of Japan, China, and Korea and the factors which have influenced their development and social function. Consideration of the relationship of dance to other art forms. Lectures illustrated with demonstrations, films, and slides.

181D. Dance in South Asia. (Formerly numbered 143.) Prerequisite: course 181A or consent of instructor. A survey of dance forms in India and Sri Lanka. Factors influencing the development of dance, its social function, and its relationship to other art forms. Lectures illustrated with demonstrations, films, and slides. Ms. Yodh

182A. Dance Cultures of Africa. (Formerly numbered 140A.) An illustrated survey of dance in sub-Saharan cultures, the role of dance in society, historical background, and related folklore.
Mrs. Snyder (F)

183A. Dance in Latin America. (Formerly numbered 146.) Prerequisite: course 73B, 173B, or consent of instructor. An introduction to the dances of Latin America, factors influencing their development and social function, consideration of the relationship of dance to other art forms. Lectures illustrated with demonstrations, films, and slides.

184B. Dance in the Balkans. (Formerly numbered 142.) Prerequisite: course 74B. An illustrated survey of dance, with attention to cultural and social contexts: Albania, Bulgaria, Greece, Romania, Yugoslavia.
Mrs. Dunin

187A. Dance Cultures of Native American Indians. (Formerly numbered 140C.) An illustrated survey of Native American Indian dance, the role of dance in society, historical background, and related folklore. Mrs. Snyder (Sp)

190. Advanced Dance Performance (2 units). (Formerly numbered 190A-190B-190C.) Lecture, one hour; laboratory, three hours. The study and performance of major choreography. May be repeated twice. (F,W,Sp)

191. Repertory Dance Tour (2 to 4 units). Prerequisite: dance major or consent of instructor. Creation and performance of dance concerts in the community, with special emphasis on the problems of the touring dance company with a variable repertoire.
Ms. Kalman (F)

197A-197B. Proseminar: Dance Perspectives (2 units each). Prerequisite: upper division standing or consent of instructor. Consideration of the aesthetics evolving from the work of the great artists of our time.

199. Special Studies in Dance (2 to 8 units). Prerequisites: senior standing, consent of instructor.

Graduate Courses

211A-211F. Advanced Choreography. (Formerly numbered 204A-204B-204C and 204D-204E-204F.) 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.
Mrs. Scothorn, Ms. Scott (F,W,Sp)

C220. Music as Dance Accompaniment. (Formerly numbered C254.) 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 the dance performance. May be concurrently scheduled with course C120. Graduate students must complete two additional assignments. May not be applied toward the M.A. degree requirements. (W)

221. Music for Dance. (Formerly numbered 206.) Prerequisite: course C120. Theory of the aesthetic and functional relationship of music to dance.
Mrs. Gilbert (W)

223. Principles of Dance Kinesiology. (Formerly numbered 211A.) Prerequisite: consent of instructor. The scientific basis for movement for dance. A study of the anatomical, kinesiological, and physical principles and demands of dance. Ms. Gantz (F)

225A-225B. Theories of Movement: Laban Analysis. (Formerly numbered 238A-238B.) Lecture, two hours; laboratory, two hours. Theories of Laban movement analysis as a means for analyzing and describing human movement. Use of Laban movement analysis to increase movement observation skills and a theoretical understanding of the role of movement in dance, nonverbal behavior, and cross-cultural dance studies. Focus on complex movement patterns and timing.
Ms. Gantz (F, 225B; Sp, 225A)

226. Advanced Studies in Notation (2 units). (Formerly numbered 200.) Prerequisite: course 126. Selected problems in directing from the notated repertoire; principles of teaching, comparative notation systems, writing projects. Mrs. Scothorn

230. Research Methods and Bibliography in Dance. (Formerly numbered 202.) Survey of methods for scholarly analysis of dance materials using systems from the social sciences, physical sciences, and humanities. Mrs. Thomas (F,Sp)

231A-231B. Philosophical Bases and Trends in Dance (4 units, 2 units). (Formerly numbered 258A-258B.) Lecture, three hours. Prerequisite: course 100C. Critical analysis of dance as a creative experience and the role of professional and educational dance in our society. Research and extensive reading in contemporary philosophic literature. Study of present-day concepts and their relationship to other art forms and cultures. Evaluations of graduate students based on extended reading list and term papers. May be applied toward the M.A. degree requirements. Mrs. Gilbert (W,Sp)

232. Aesthetics of Dance. (Formerly numbered 210.) Analysis of aesthetic concepts and critical methods used in writing about dance.
Mrs. Thomas

234. Renaissance Dance: Analysis and Re-creation. (Formerly numbered 223.) Lecture, two hours; studio, two hours. Prerequisites: courses 134A and 134B, or consent of instructor. Analysis and re-creation of the study of 15th- and 16th-century dance styles from Domenico da Piacenza through Cesare Negri. Mrs. Thomas

235. The History of Ballet. (Formerly numbered 221.) 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. (Formerly numbered 220.) Prerequisites: courses 134A and 134B, or consent of instructor. Seminar in historical development of 20th-century dance. Mrs. Thomas

240. Principles of Dance Theater. (Formerly numbered 208.) Relationship of architecture, technology, and history of the theater to choreography. Directing theories for choreographers. Role of choreography in drama, opera, and other forms of theater.
Mrs. Scothorn (W)

251A-251B. Advanced Studies in Dance Education. (Formerly numbered 227A-227B.) **251A.** Prerequisite: consent of instructor. Survey of conceptual and methodological foundations of dance education. **251B.** Prerequisite: course 251A. Design of dance curriculum using theories of movement, creativity, and learning.
Ms. Leung-Fisher (F, 251B; Sp, 251A)

260A-260B-260C. Group Dynamics and Process (2 units each). Discussion, two hours; laboratory, two hours. Prerequisite: candidate in dance/movement therapy program. An experiential-didactic exploration of unfolding group dynamics and process within an ongoing movement therapy group.
Mrs. Dosamantes-Alperson (F,W,Sp)

261A-261B-261C. Dance Movement Therapy. (Formerly numbered 251A-251B-251C.) Lecture, two hours; laboratory, two hours. Prerequisite: consent of instructor. **261A.** Theory and practice: historical overview of the field; introduction to basic theoretical concepts and their translation into practice. **261B.** Kinetic imagery: contribution of creative process and receptive knowing to therapy; unique functions served by movement and image modes explored theoretically and experientially. **261C.** Theory and method: assumptions and methods of current clinical approaches; students are expected to develop their own theoretical model. Ms. Wyman (F,W,Sp)

262A-262B-262C. Seminar in Dance/Movement Therapy. (Formerly numbered 252A-252B-252C.) Lecture, two hours; laboratory, two hours. Prerequisites: courses 261A-261B-261C. **262A.** Developmental Perspective. Information of life-span approach to human development and object relationships established from infancy through senescence; concepts applied to individual clients demonstrated by clinical specialists. **262B.** Individual Psychodynamics and Therapeutic Intervention. Relationships between individual psychodynamics and therapeutic objectives. **262C.** Systems Perspective. System theory concepts applied to dyads, groups, families, and cultures.
Mrs. Dosamantes-Alperson (F,W,Sp)

280A-280E. Advanced Studies in Dance Ethnology. (Formerly numbered 226A-226E.) Prerequisite: consent of instructor. Dance viewed as an aspect of culture and human behavior. **280A.** Survey of literature. **280B.** Concepts of fieldwork. **280C.** Objectives and goals of the discipline in relation to anthropology and behavioral sciences. **280D.** Methodologies and training techniques for fieldwork. **280E.** Ethics and problems, field projects.
Mrs. Dunin, Mrs. Snyder (F,W,Sp)

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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)

451. Teaching Assistant Seminar (2 units). (Formerly numbered 495.) 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. (F,W)

452. Directed Field Study in Dance Education (2 to 8 units). (Formerly numbered 496.) 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 the M.A. degree requirements. S/U grading. (F,W,Sp)

460A-460B-460C. Clinical Internship Supervision. (Formerly numbered 497A-497B-497C.) Lecture, two hours; discussion, two hours. Corequisites: courses 262A-262B-262C, 596R. Practicum dealing with student internship: movement/observation, therapeutic goals, therapeutic process, and other clinical uses. S/U grading. Ms. Wyman (F,W,Sp)

460D-460E-460F. Clinical Internship Supervision (2 units each). (Formerly numbered 497D-497E-497F.) Lecture, one hour; discussion, two hours. Prerequisites: courses 460A-460B-460C. Practicum dealing with student internship: movement/observation, therapeutic goals, therapeutic process, and other clinical uses. S/U grading.
Ms. Wyman (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 M.A. Comprehensive Examination (2 to 8 units). S/U grading.

598. Research for and Preparation of M.A. Thesis (2 to 8 units). S/U grading.

Related Courses in Other Departments

Anthropology 133R. Aesthetic Anthropology
Art (Art, Design, and Art History) 5A, 5B, 5C. Introduction to Art
Art History (Art, Design, and Art History) 50. Ancient Art
51. Medieval Art
54. Modern Art
55. Africa, Oceania, and Native America
56. Asian Art
57. Renaissance and Baroque Art
110A, 110B, 110C. European Art
110D, 110E. Contemporary Art
Design (Art, Design, and Art History) 161J. Video Imagery
English 80. Major American Authors
85. The American Novel
90. Shakespeare
100A. Introduction to Poetry
100B. Introduction to Drama
112. Children's Literature
133A-133B-133C. Creative Writing: Poetry
134A-134B-134C. Creative Writing: Short Story
135A-135B-135C. Creative Writing: Drama
167. The Drama, 1842-1945
Humanities 1A, 1B, 1C. World Literature
Music 2A-2B. Introduction to the Literature of Music
132A-132B. Development of Jazz
135A-135B-135C. History of the Opera
140A-140B-140C. Musical Cultures of the World
Theater (Theater, Film, and Television) 5A, 5B, 5C. History and Drama of the Theater
20. Acting Fundamentals
102A, 102B. Selected Topics on the History of the European Theater
105. Main Currents in Theater
118A, 118B. Creative Dramatics
122. Makeup for the Stage

Ethnic Arts

See World Arts and Cultures

History/Art History
(Interdepartmental)

1300 Dickson Art Center, (213) 825-3077

Scope and Objectives

The interdisciplinary major in history/art history is available to students in both the College of Letters and Science and the College of Fine Arts. It allows students to study the relationship between art history and general history.

Bachelor of Arts Degree

General College Requirements

All applicants are processed through the College of Fine Arts and screened by the Art History Department. After admission you may petition to transfer to the College of Letters and Science. You must satisfy the general college requirements of the college in which you are registered (Fine Arts or Letters and Science).

History courses taken by students in the College of Fine Arts may be applied toward the general education requirements, as may art history courses taken by College of Letters and Science students.

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 except Art History 125.

If you wish to confer with a counselor regarding program planning and major requirements, contact the art history counselor at 825-3077.

Preparation for the Major

Required: History 1A, 1B, 1C; two courses from Art History 50, 51, 54, 57; one course from Art History 55, 56.

The Major

Required: History 100 or 101; 197 or 199; and courses as indicated in the following groups:

Group A: Two non-Western history courses from History 105, 106A, 106B, 107A, 107B, 108A, 108B, 109A, 109B, 110A, 110B, 111A, 111B, 112A through C112D, 115A, M122A, M122B, 123A, 123B, 157A, 157B, 157C, 165A, 165B, 165C, 166, 167A, 167B, 167C, 169, 170A, 170B, 171, 173, 174, 175A, 175B, 175C, 176A, 176B, 177, 178A, 178B, 179A, 179B, 182A, 182B, 182C, 183, 184, 186, 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, 153, 154A through 154D, 155A, 155B, 156A through 156E, 157A, 157B, 157C, 158A through 158E, M159A, M159B, 161, 162, 163.

Group C: Two European history courses from History 121A through 121D, 125A through 125F, 126A through 126E, 127A, 127B, 128A through 128D, 129A, 129B, 129C, 131A through 131D, 132A, 132B, 133A, 133B, 134A, 134B, 135A, 135B, 136A through 136Z, 137A, 137B, 138A, 138B, 139, 140A, 140B, 141A, 141B, 142A, 142B, 143, 144.

Group D: Three Western art history courses from Art History 101A, 101B, 101C, 102, 103A through 103E, 106A, 106B, 106C, 108A, 108B, 109A through 109D, 110A through 110F, 112A, 112B, 112C, 120A, 120B, 120C, 121A, 121B.

Group E: Three non-Western art history courses from Art History 104A, 104B, C104C, 114A through 114D, C115A through C115F, C117A, C117B, C117C, 118A through 118D, C119A, C119B.

Group F: Two elective courses from Art History 125, 127, 197, 199, or any other upper division lecture course.

Motion Picture/ Television

See Theater, Film, and Television

Music

2539 Schoenberg Hall Annex, (213) 825-4761

Professors

Alden Ashforth, Ph.D.
Elaine R. Barkin, Ph.D.
Murray C. Bradshaw, Ph.D.
Malcolm S. Cole, Ph.D.
Frank A. D'Accone, Ph.D.
Paul E. Des Marais, M.A.
Marie Louise Göllner, Ph.D.
Frederick F. Hammond, Ph.D.
Thomas F. Harmon, Ph.D.
Richard A. Hudson, Ph.D.
William R. Hutchinson, Ph.D.
Nazir A. Jairazbhoy, Ph.D.
Henri Lazarof, M.F.A.
D. Thomas Lee, D.M.A.
James W. Porter, M.A.
Paul V. Reale, Ph.D.
Gilbert Reaney, M.A.
Abraham A. Schwadron, Mus. A.D.
Robert M. Stevenson, Ph.D.
Roy E. Travis, M.A.
D. K. Wilgus, Ph.D. *(Anglo-American Folksong)*
Robert S. Winter, Ph.D.

Emeritus Professors

Peter C. Crossley-Holland, M.A.
Maurice Gerow, Ph.D.
Edwin H. Hanley, Ph.D.
Mantle L. Hood, Ph.D.
Boris A. Kremenliev, Ph.D.
W. Thomas Marrocco, Ph.D.
David Morton, Ph.D.
Robert U. Nelson, Ph.D.
J.H.K. Nketia, B.A.
H. Jan Popper, Ph.D.
Robert L. Tusler, Ph.D.

Associate Professors

Charlotte A. Heth, Ph.D.
A. Jihad Racy, Ph.D.

Assistant Professors

Sue Carole De Vale, Ph.D.
Jacqueline C. DjeDje, Ph.D.
Warren Pinckney, Ph.D.

Lecturers
Gary G. Gray, M.M.
John L. Hall, M.M.
William Hatcher, M.M.
Gordon Henderson, M.M.E.
Maureen D. Hooper, Ed.D.
Bess Karp, M.A.
Samuel Krachmalnick, *Senior*
Tsun Y. Lui
Peggy Ann Sheffield, M.M., *Senior*
Sheridon W. Stokes
Suenobu Togi
Aube Tzerko, B.M., *Senior*
Donn E. Weiss, M.M., *Senior*

Visiting Lecturers
Gerald E. Anderson, M.S.
Salome R. Arkatov, M.A.
Heinz Blankenburg
Roger Bourland, Ph.D.
Theodore Crain, B.A.
Mario Guarneri, M.S.
John A. Guarnieri
Johana Harris-Heggie
Sybil D. Hast, M.A.
John T. Johnson, B.M.
Yukiko Kamei
Roger Kendall, Ph.D.
Kobla Ladzekpo, B.F.A.
Danny Lee
Irene Levenson, Ph.D.
James R. Low, B.M.
Steven J. Loza, Ph.D.
Roy Main
Shirley L. Marcus, B.M.
Steven Mayer, M.S.
Ick-Choo Moon, M.M.
Timothy Mussard, M.M.
Lou Anne Neill, M.A.
Theodore Norman
Barbara Northcutt, B.M.
Nils Oliver, M.M.
Nancy Perloff, Ph.D.
Antoinette Perry, D.M.A.
Mitchell T. Peters, M.M.
David Raksin, B.M.
Mary Rawcliffe, B.M.
Ernest Siva, Ph.D.
John Steinmetz, M.F.A.
Laraine Stivers, D.M.A.
Alexander Treger
Dorothy Warenskjold, B.A.
Kari Windingstad, B.A.
Peter Yates, M.F.A.
Ikuko Yuge
Paul Zibits, M.M.

Scope and Objectives

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 a 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, ethnomusicology, historical musicology, music education, and systematic musicology; 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.

Aptitude and achievement tests are required for enrollment in Music 20A. These examinations are administered during registration week only; dates are published in the *Schedule of Classes.* Students planning to complete a major in music, whether or not they have taken courses elsewhere, are required to pass a piano skills test (those without keyboard background may take courses 4A-4B-4C concurrently with 20A, 20B, 20C). The test must be passed by the end of course 20C or the first year as a music major, whichever comes first. Students with exceptional ability and achievement are placed into courses 20A, 20B, and/or 20C. Further information may be obtained from the Music Department Student Services Office, 2539 Schoenberg Hall Annex.

General Requirements

All music majors must enroll in one performance organization (Music 90A-90N, 91A-91Z) each quarter in residence and must participate in a minimum of two different organizations over the course of their stay at UCLA, one of which must be from courses 90A-90H or 91A-91Z. Note: Check with the undergraduate adviser, as curriculum changes are under consideration.

Preparation for the Major

Required: Music 20A, 20B, 20C, 26A-26B-26C, two courses from 60A through 65, and one college year of French, German, Italian, or Spanish or at least one course at level three (you may use this to fulfill the college language requirement). If you plan to specialize in history and literature or systematic musicology, you are encouraged to take six quarters (or the equivalent) of German.

The Major

Required: A minimum of 10 courses in upper division, including Music 120A, 120B, 126A-126B-126C, one course from 102, 105, 120C (individual specializations may specify a given course), five courses selected from one of the specializations listed below, and one free elective course for all areas except music education.

(1) *Composition and Theory:* Music 106B-106C, 107A-107B-107C, 120C. You are encouraged to select your free elective course from 101, 103A, 103B, 104A, 104B, 108, 109A, 109B, 109C, 116, 117A, 117B, 118A, 118B, 140A through 149, 156, C176, 199. You must have an original work completed and ready for rehearsal and performance on campus during your senior year.

(2) *History and Literature:* One course from Music C127A, C127B, C127C, one course from C127D, C127E, C127F, one course from 140A, 140B, 140C, and two elective courses from 104A, 104B, 108, C127A through C127F, 130, 131A, 131B, 133, 134, 135A, 135B, 135C, 151A, 151B, 156, 157, C176, 187, 188A through 188F, 199 (four units only).

(3) *Ethnomusicology:* Music 140A-140B-140C and two courses from 108, C127A through C127F, 131A, 131B, 132A, 132B, 141, 142A, 142B, 143A, 143B, 145 through 149, 152, 153A, 153B, 153C, 157, 158, C190A, C190B, 199.

(4) *Performance:* Twelve units in performance instruction courses 160A through 165 (including junior and senior recital requirements), four units of chamber ensembles (Music 175), and four units of elective courses from 101, 106B, 106C, 108, 112A, 112B, 116, 117A, 117B, 118A, 118B, C127A through C127F, 130 through 135C, 139, 140A, 140B, 140C, 151A, 151B, 187, 199.

(5) *Music Education:* Music 100A-100B-100C, 116, 117A, 117B, 120C, 193, 195, eight units from 115A through 115E. You are encouraged to select your free elective course from 112A, 112B, 118A, 118B, 140A, 140B, 140C, C185, 187, 199. If you are considering a music education specialization, you are encouraged to meet with a music education adviser during your freshman year.

(6) *Systematic Musicology:* Five courses from Music 103A, 103B, 108, 137B, 140A, 140B, 140C, 149, 184, 187, 199, Anthropology 133R (you may apply only one course from the Music 140A-140B-140C series).

Graduate Study

Admission

Application for admission/fellowship is due ..... December 30

Supplementary application materials are due ..... January 15

Assessment examination ... end of January

Notice of acceptance or denial is sent ..... by March 1

Late applicants must meet the following deadlines:

Late applications (from addresses in the U.S. only) are accepted until .. March 1

Supplementary application materials are due ..... April 1

Assessment examination ..... early April

Notice of acceptance or denial is 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.

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 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).

Those applying 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 of concentration 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 all branches of musicology and music education, a paper on an appropriate subject should be submitted; for composition, musical scores; for M.F.A. applicants, a repertoire list and sample concert or recital programs. Ph.D. applicants should submit the M.A. thesis or composition, if possible. 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.

The application and all supplementary materials should be submitted to the Department of Music, 2539 Schoenberg Hall Annex, UCLA, Los Angeles, CA 90024.

Major Fields

The Music Department offers the degrees of Master of Arts and Doctor of Philosophy in the fields of historical musicology, ethnomusicology, systematic musicology, composition, and music education, and Master of Fine Arts (performance practices) in all classical solo instruments, voice, opera, and conducting.

Teaching Credential in Music

You may earn credentials for teaching music and other subjects in California elementary and secondary schools in conjunction with the Graduate School of Education; completion of the teacher credential program in the Teacher Education Laboratory is required. Interested applicants should consult the Graduate School of Education (201 Moore Hall) and the faculty adviser in music education for information.

Master of Arts Degree

Foreign Language Requirement

Reading knowledge of German or French is required in ethnomusicology and systematic musicology; of French, German, or Italian in composition; of German, French, Italian, or Spanish in music education; and of German and a choice of French, Italian, or Latin in historical musicology. If you lack this proficiency when you enter the program, you must begin language study during your first year in residence.

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, 596B, or 596C 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 103A, 103B, 104A, 104B, 106B*, 106C*, 107A*, 107B*, 107C*, 108, 109A, 109B, 109C, 112A, 112B, 116, 117A, 117B, 118A, 118B, 140A, 140B, 140C, 141, 142A, 142B, 143A, 143B, 145, 146A, 146B, 146C, 147A, 147B, 148, 149, 151A, 151B, 152, 153A, 153B, 153C, 156, 157, 175 (four units only), M180, M181, 184, 187. Course 598 serves to guide the preparation of the thesis and should normally be taken during your last quarter in residence.

*Does not apply to students whose emphasis is composition.

Course requirements for each field are as follows:

Historical Musicology: Music 200A, 201A-201B-201C, either 210 or 211 (students planning to enter the Ph.D. program are strongly advised to take both courses 210 and 211 in the first year of residence), 250A or 250B, two quarters of 260A through 260F, and one elective on the recommendation of the graduate adviser.

Systematic Musicology: Music 200A, 200B, three quarters of 272, one course from 255, 269, 273, or 275, and three electives on the recommendation of the graduate adviser.

Ethnomusicology: Music 140A-140B-140C, 200A, 200B, C290A-C290B, and two 200-level electives on the recommendation of the graduate adviser.

Composition: Music 200A, one course from 251A through 251D, 252A, 252B, and 252C in sequence (with the option of substituting course 596A for 252C), 266A or 266B, and three electives on the recommendation of the 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.

Music Education: You may choose either the thesis or comprehensive examination plan. Within each plan you must select a course of study that covers a special field of interest — choral, instrumental, or general topics — as listed below. For the thesis plan, Music 200A, 200B, C225, three courses from 118A, 118B, 270A through 270G (required in the special fields), and three elective courses from one of the special fields below are required. For the comprehensive examination plan, Music 200A, C225, four courses from 118A, 118B, 270A through 270G (required in the special fields), and three elective courses from one of the special fields below are required.

Course requirements for the special fields are as follows: *choral:* Music 118A (four units), 270E, and elective courses selected from 112B, 135A, 135B, 135C, 137B, 174A through 174D (four units only), 187, C227A through C227F, 596A, 596B, 596C, 598; *instrumental:* Music 118B (four units), 270F, and elective courses selected from 106A, 106B, 106C, 108, 112A, 137B, 175 (four units only), 187, C227A through C227F, 261A through 261F, 596A, 596B, 596C, 598; and *general topics:* two courses selected under advisement from Music 270A through 270G and elective courses selected from 137B, 140A, 140B, 140C, 175 (four units only), 187, C227A through C227F, 596A, 596B, 596C, 598.

Thesis Plan

All M.A. students must use the thesis plan, except those specializing in music education who may follow either the thesis or comprehensive examination plan.

In all areas except composition, the thesis is an extended essay. In composition, the thesis is a work proposed by the student and approved by the composers' council.

The thesis topic is first approved by the area council; the topic and the composition of the master's committee are then taken up by the graduate committee.

Comprehensive Examination Plan

You may use the comprehensive examination plan in lieu of the thesis plan only if you are specializing in music education and are not going on to the Ph.D. The plan has three components: (1) the realization in performance of a creative project appropriate to elementary, secondary, or higher education (e.g., choral or instrumental ensemble performance, original

curricular design, original compositions or transcriptions); (2) a paper equivalent to a graduate seminar paper, including research, description of procedures, and analysis of the selected project; and (3) a final conference and evaluation.

Final Examination

The final examination is oral and includes discussion of both the thesis and related matters. This examination does not apply to music education students electing the comprehensive examination plan.

Master of Fine Arts Degree

Foreign Language Requirement

Reading knowledge of French, German, or Italian is required. Candidates in the opera speciality must also be fluent in speaking one of these languages. The language requirement should be satisifed by the end of your first year in residence.

All M.F.A. students are required to pass a departmental terminology examination covering standard musical performance terminology (expression, dynamics, interpretation, performance practices, instrumentation, style, tempo) in French, German, and Italian. The terminology requirement should be satisfied by the end of your second 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, 596B, or 596C 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: Music 200A, three quarters of 261A through 261F, six quarters of 400-level performance instruction, two quarters (eight units) of 598, and six elective courses. Conducting students declare either a choral or instrumental specialization. Six quarters of course 475 are required in the area of specialization (i.e., choral or instrumental) and at least two quarters in the other specialization. (On a two-year program, the ratio would be four to one.) Recommended electives include courses 108, 140A, 140B, 140C, 175, 187, 596A, 596B, 596C, 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 quarters in residence.

With the exception of your first quarter in residence, you must participate in a public performance of a soloistic nature each quarter for the first two years. One of the required performances each year must be a complete 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 other performances (either on or off campus) must simply feature the student in a soloistic capacity (joint recital, soloing with a performance organization, accompanying, etc.) and may be only a portion of the program. Conducting students present a minimum of one work, or a substantial movement of a longer work, in a public concert.

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 terminology examination, 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 the Fall Quarter of your last year in residence.

Ph.D. Degree

Admission

See "Admission" under Graduate Study above. In addition, applicants for the Ph.D. in music education must have two years of teaching experience at the elementary or secondary level to be considered for admission.

Foreign Language Requirement

Reading knowledge of French and German is required in systematic musicology, ethnomusicology, and music education; reading knowledge of French, German, and a choice of Italian, Latin, or another language approved by the council on historical musicology is required in that area. In the field of composition, two languages are required, one of which must be German or French; the other may be selected from German, French, Latin, Italian, or Russian.

Course Requirements

You may petition to your area council, on the advice of your graduate adviser, for exemption from specific requirements on the basis of equivalent work done at the M.A. level.

Course requirements for each field of study are listed below. In each area, 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.

Historical Musicology: Music 200A, 201A-201B-201C, 210, 211, 250A or 250B, and five quarters of 260A through 260F. If you received the M.A. in historical musicology from UCLA, you normally take a minimum of three quarters of courses 260A through 260F in the Ph.D. program.

Systematic Musicology: Music 200A, 200B, five quarters of 272, and one quarter of 255, 269, 273, or 275. If you received the M.A. in systematic musicology from UCLA, you normally take a minimum of two quarters of course 272 in the Ph.D. program.

Ethnomusicology: Music 140A-140B-140C, 200A, 200B, C290A-C290B, and six seminars, at least three of which must be course 280; the others are to be selected from courses 248, 253, 254A, 254B, 255. You are also expected to complete two area studies courses. Parts of these requirements, but not the 280 seminars, may be completed at the M.A. level.

Composition: Music 200A, one course from 251A through 251D, six quarters of 252A, 252B, 252C in sequence (with the option of substituting course 596A for 252C), and 266A or 266B. If you received the M.A. in composition from UCLA, you normally take a minimum of three quarters of course 252 in the Ph.D. program. If you received the M.A. in composition elsewhere, you normally take six quarters 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.

Music Education: Music 200A, 200B, C225, and five quarters of 270A through 270F. If you received the M.A. in music education from UCLA, you normally take a minimum of three quarters of courses 270A through 270F in the Ph.D. program. Under advisement, two of the three quarters of 270A through 270F may be completed under special studies (course 596C). If you wish to pursue the Ph.D. in music education with a minor in ethnomusicology, you are required to take courses 200A, 200B, C225, C290A-C290B, three quarters of 270A through 270F, and two courses from 141 through 143B, 145 through 149, 152, 153A,

153B, 153C, 281A through 288. Electives are to be selected from courses 140A, 140B, 140C, M180, M181, 187, 254A, 254B, 255, 280.

Qualifying Examinations

When you and your guidance committee believe you are ready to take the qualifying examinations, you should submit a schedule to the Student Services Office and the committee members listing the order in which the examinations are to be taken. The Student Services Office acts as proctor for the tests. Normally the six 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.

In all fields but composition, the dissertation is an extended monograph. In composition, 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.

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 by the department.

Lower Division Courses

1A-1B. Fundamentals of Music. Lecture, three hours; laboratory, two hours. **1A.** Sight-singing, ear training, reading music, and harmonization of simple melodies. **1B.** Prerequisite: course 1A or consent of instructor. Diatonic harmony; four-part writing, including inversions, sevenths, secondary dominants, and modulation; organization of melody and accompaniment; simple analysis; advanced sight-singing and ear training. Mr. Henderson, Mr. Kendall

2A-2B. Introduction to the Literature of Music. Lecture, four hours; laboratory, one hour. Course 2A is not prerequisite to 2B. Designed for nonmusic majors. **2A.** The technical and formal principles of music literature through the mid-18th century. **2B.** Music literature from the mid-18th century to the present. Ms. Perloff

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. A course for music majors in music fundamentals, including musicianship, theory, and terminology. Mr. Anderson

4A-4B-4C. Basic Musicianship (2 units each). Laboratory, three hours. Class instruction in elementary ear training and keyboard skills. Miss Sheffield

5A-5B-5C. Fundamentals of Sound and Music of the World (2 units each). Prerequisite: consent of instructor. The 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. Mr. Hutchinson, Mr. Racy

6GA-6GB. Graduate Review of Music History and Analysis (2 units each). 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.

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. Miss Sheffield

10. Computer-Assisted Sight-Singing Laboratory (2 units). Lecture, two hours; laboratory, one hour. Prerequisites: course 1A or equivalent, consent of instructor. An individualized, self-instructional approach for the development of sight-singing skills through the use of a music computer, keyboard instrument, and linear program learning.

11A-11F. Musicianship (2 units each). Laboratory, four hours. Prerequisites: aptitude, achievement, and piano skills tests. Series (A-F) must be taken in sequence. For courses 11B-11F, a grade of C (2.0) or better in the previous course in the series is required. Corequisites: courses in the 12A-12B or 14A through 14D series. **11A.** Sight-singing of diatonic melodies, dictation of intervals and diatonic melodies, keyboard score reading with two lines in various clefs, and elementary rhythmic exercises. **11B.** Sight-singing of melodies with simple modulations, diatonic harmonic dictation of triads and seventh chords, keyboard playing of cadences, score reading up to three parts, and rhythmic exercises. **11C.** Sight-singing of more difficult melodies, two-part dictation, elementary figured bass playing, keyboard score reading up to four parts, and rhythmic exercises. **11D.** Sight-singing, two-part dictation, figured bass playing, score reading of chamber scores, and rhythmic exercises. **11E.** Sight-singing, two-part dictation, figured bass playing, score reading of passages with transposing instruments, and rhythmic exercises. **11F.** Sight-singing of chromatic melodies, two-part dictation, chromatic figured bass playing, keyboard reading of orchestral scores, and rhythmic exercises.

12A-12B. Counterpoint (2 units each). Lecture, four hours. Corequisites: courses in the 11A-11F series. **12A.** Prerequisites: aptitude, achievement, and piano skills tests. 16th-century modal counterpoint in two parts, including the writing of motets. **12B.** Prerequisites: courses 12A, 14B. 18th-century tonal counterpoint in two parts, including the writing of inventions.

14A-14B-14C. Common Practice Harmony (2 units each). Lecture, four hours. Series (14A through 14D) must be taken in sequence. Corequisites: courses in the 11A-11F series. **14A.** Prerequisites: aptitude, achievement, and piano skills tests. Common practice harmony using triads, inversions, dominants and secondary dominants, and simple modulations. **14B.** Prerequisite: course 14A with a grade of C (2.0) or better. Common practice harmony through extended dominants and diminished sevenths in all inversions, along with modulations to all diatonic keys. **14C.** Prerequisite: course 14B with a grade of C (2.0) or better. Chromatic harmony, including augmented sixth chords, Neapolitan sixths, and altered chords, along with complex modulations.

14D. Modern Harmony (2 units). Lecture, four hours. Prerequisite: course 14C with a grade of C (2.0) or better. Corequisite: course in the 11A-11F series. 20th-century practices, including nonfunctional harmony, pan-diatonicism, polytonality, and serialism.

20A. Music Theory I. Lecture, two hours; discussion, six hours. Prerequisite: passing score on departmental examination. Not open for credit to students with credit for courses 11A, 12A. Theory: species counterpoint through the fifth species; description of triads and inversions. Musicianship: interval recognition; fixed-do solfege 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. Mr. Ashforth and the Staff

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. Not open for credit to students with credit for courses 11B, 14A. Theory: diatonic harmony through secondary dominants and diminished sevenths; modulations to the 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). Mr. Ashforth and the Staff

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. Not open for credit to students with credit for courses 11C, 12B. 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: 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. Mr. Ashforth and the Staff

26A-26B-26C. History and Analysis of Music I. Lecture, four hours; laboratory, one hour. Prerequisites: courses 11A-11B-11C, 12A, 14A-14B. Courses 11C and 12A may be taken concurrently with course 26A. Course 26A is prerequisite to 26B, which is prerequisite to 26C. The history and literature of music from the beginning of the Christian era to 1750, with emphasis on analysis of representative works of each style period. Materials selected illustrate the history of style and changing techniques of composition.

60A-65. Undergraduate Instruction in Performance. Limited to music majors (all lower division majors, and upper division majors not in the performance specialization). Individual instruction of one hour per week. Students must perform in a practicum once during the academic year. Units are distributed on the basis of one unit each for Fall and Winter Quarters and two units for Spring Quarter. Grades are assigned by the applied instructor in Fall and Winter and by jury examination in Spring. May be repeated for credit:

60A. Violin.	Ms. Kamei, Mr. Treger
60B. Viola.	Ms. Kamei
60C. Cello.	Mr. Oliver
60D. String Bass.	Mr. Zibits
60E. Harp.	Ms. Neill
60F. Classical Guitar.	Mr. Norman, Mr. Yates
60G. Viola da gamba.	Ms. Marcus
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. Main
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

80A-80N. Performance Organizations (1 unit each). Performance, three hours. Prerequisite: audition. Limited to nonmusic majors (courses 90A-90N are for music majors). May be repeated for credit. P/NP grading. **80A.** A Cappella Choir; **80B.** University Chorus; **80C.** Madrigal Singers; **80D.** Opera Workshop; **80E.** Symphony Orchestra; **80F.** Concert Band; **80G.** Symphonic Wind Ensemble; **80H.** Collegium Musicum; **80J.** Men's Glee Club; **80K.** Women's Glee Club; **80L.** Musical Comedy Workshop; **80M.** Marching and Varsity Bands; **80N.** Jazz Ensemble.

81A-81Z. Ethnomusicology Performance Organizations (1 unit each). Performance, three hours. Prerequisite: consent of instructor. Limited to nonmusic majors (courses 91A-91Z are for music majors). May be repeated for credit. P/NP grading. **81A.** Music and Dance of the American Indian; **81B.** Music and Dance of Bali; **81C.** Music and Dance of Bulgaria; **81D.** Music and Dance of China; **81E.** Music and Dance of Ghana; **81F.** Music and Dance of India; **81G.** Music and Dance of Japan; **81H.** Music of Java; **81J.** Music of Korea; **81K.** Music of Mexico; **81L.** Music of Persia; **81M.** Music of Thailand; **81N.** Music of the Near East; **81P.** Music of Afro-Americans; **81Z.** Open Ensemble.

90A-90N. Performance Organizations (No credit). Performance, three hours. Prerequisite: audition. Limited to music majors (courses 80A-80N are for nonmusic majors). Music majors may enroll in only one performance organization per quarter. May be repeated. **90A.** A Cappella Choir; **90B.** University Chorus; **90C.** Madrigal Singers; **90D.** Opera Workshop; **90E.** Symphony Orchestra; **90F.** Concert Band; **90G.** Symphonic Wind Ensemble; **90H.** Collegium Musicum; **90J.** Men's Glee Club; **90K.** Women's Glee Club; **90L.** Musical Comedy Workshop; **90M.** Marching and Varsity Bands; **90N.** Jazz Ensemble.

91A-91Z. Ethnomusicology Performance Organizations (No credit). Performance, three hours. Prerequisite: consent of instructor. Limited to music majors (courses 81A-81Z are for nonmusic majors). Music majors may enroll in only one performance organization per quarter. May be repeated. **91A.** Music and Dance of the American Indian; **91B.** Music and Dance of Bali; **91C.** Music and Dance of Bulgaria; **91D.** Music and Dance of China; **91E.** Music and Dance of Ghana; **91F.** Music and Dance of India; **91G.** Music and Dance 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.

Upper Division Courses

100A-100B-100C. Music in American Education (2 units each). Lecture, three hours; laboratory, one hour. Prerequisites: courses 11A-11F, 12A-12B, 14A-14C, 14D, 26A-26B-26C, 193, 195. Course 110A is prerequisite to 100B; course 111A is prerequisite to 100C. A critical study of principles and practices in music education, historical and current, at elementary and secondary levels. Each course may be taken independently for credit. **100A.** General Music; **100B.** Choral Music; **100C.** Instrumental Music.
Mr. Anderson, Mr. Hatcher, Miss Hooper

101. Advanced Keyboard Harmony and Score Reading. Prerequisite: course 11F or consent of instructor. Intensive individual work in keyboard harmony and the 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.
Mr. Ashforth and the Staff

103A-103B. Advanced Theory. Discussion, three hours. Prerequisites: courses 11A-11F, 12A-12B, 14A-14C, 14D. Course 103A or consent of instructor is prerequisite to 103B. Techniques of tonal coherence studied through analysis and compositional exercises in the styles of given periods.

104A-104B. Advanced Counterpoint. Discussion, three hours. Prerequisites: courses 11A-11F, 12A-12B, 14A-14C, 14D. Course 104A or consent of instructor is prerequisite to 104B. Comparative contrapuntal practices and forms from all periods studied through analysis and compositional exercises in the styles of the given periods.

105. Introduction to Composition. Lecture, three hours. Prerequisites: courses 11A-11F, 12A-12B, 14A-14C, 14D. Intended for music majors in specializations other than composition. The nature of the compositional process, with selected exercises in specific techniques and styles. Mr. Lazarof

106A. Instrumentation. Discussion, three hours. Prerequisites: courses 11A-11F, 12A-12B, 14A-14C, 14D. Not open to students with credit for course 106A prior to Fall Quarter 1984. Ranges and characteristics of instruments, exercises in scoring.
Mr. Ashforth, Mr. Travis

106B-106C. Advanced Orchestration. (Formerly numbered 106A-106B.) Discussion, three hours. Prerequisite: course 106A. Course 106B is prerequisite to 106C and is not open for credit to students with credit for course 106A prior to Fall Quarter 1984. Scoring and analysis for ensembles and full orchestra. Mr. Ashforth, Mr. Travis

107A-107B-107C. Composition. Lecture, three hours. Prerequisites: courses 11A-11F, 12A-12B, 14A-14C, 14D. Course 107A is prerequisite to 107B, which is prerequisite to 107C. Designed for students specializing in composition and theory. Vocal and instrumental composition in the smaller forms, including style composition and 20th-century techniques.
Ms. Barkin and the Staff

108. Acoustics. Lecture, three hours. Prerequisite: consent of instructor. The interrelationship of acoustical and musical phenomena. Tuning systems, consonance and dissonance, tonal quality. Lecture, demonstration, discussion, and tours of instrumental collections and acoustical research facilities.
Mr. Hutchinson

109A-109B-109C. Composition for Motion Pictures and Television (2 units each). Prerequisites: courses 11A-11F, 12A-12B, 14A-14C, and 14D, or consent of instructor. Course 109A is prerequisite to 109B, which is prerequisite to 109C. Composition of music for the 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 11A-11F, 12A-12B, 14A-14C, 14D, and 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, Mr. Weiss

113A-113B. Music Literature for Children. Lecture, three hours; laboratory, one hour. Prerequisites: courses 1A and 2A, or consent of instructor. Course 113A is not prerequisite to 113B. Designed for the nonmusic major, particularly the elementary education student. A 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. Miss Hooper

115A-115E. Study of Instrumental and Vocal Techniques (1 unit each). Laboratory, three hours. Prerequisites or corequisites: courses 11A, 193, consent of instructor. 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, Mr. Mussard

116. Introduction to Conducting (2 units). Lecture, three hours. Prerequisites: courses 11A-11D, 14A-14B. Fundamentals of conducting, including basic skills, techniques, analysis and repertoire.
Mr. Henderson

117A-117B. Study and Conducting of Choral and Instrumental Literature (2 units each). Lecture, three hours. Prerequisite: course 116 or consent of instructor. The study and practice of conducting as related to the study of choral and instrumental music. **117A.** Choral; **117B.** Instrumental.
Mr. Hatcher, Mr. Lee

118A-118B. Advanced Study and Conducting of Choral and Instrumental Literature (2 units each). (Formerly numbered 118.) Lecture, one hour; laboratory, two hours. Prerequisites: courses 116 and 117A-117B, 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. Hatcher, Mr. Lee

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. Not open for credit to students with credit for courses 11D, 14B. Theory: chromatic harmony including development of tonality, 1800 to 1850; appropriate analysis and style composition. Musicianship: sight-singing or extended chromatic melodies; advanced harmonic dictation (diatonic and chromatic); keyboard (harmonization of modulating melodies); elementary score reading.
Mr. Ashforth and the Staff

120B. Music Thoery V. Lecture, four hours; discussion, four hours. Prerequisites: course 120A with a grade of C (2.0) or better, consent of instructor. Not open for credit to students with credit for courses 11E, 14C. Theory: advanced chromatic harmony including development of harmony from 1850; analytical projects; style composition. Musicianship: advanced score reading; advanced harmonic dictation; preparation for the departmental examination.
Mr. Ashforth and the Staff

120C. Music Theory VI. Prerequisites: course 120B with a grade of C (2.0) or better, consent of instructor. Not open for credit to students with credit for courses 11F, 14D. 20th-century harmonic language, including nonfunctional harmony, polytonality, free atonality, serialism, and minimalism.
Mr. Ashforth and the Staff

126A-126B-126C. History and Analysis of Music II. Lecture, four hours; laboratory, one hour. Prerequisites: courses 11A-11F, 12A-12B, 14A-14C, 14D, 26A-26B-26C. Course 11F may be taken concurrently with course 126A. Course 126A is prerequisite to 126B, which is prerequisite to 126C. The history and literature of music from 1750 to the present, with emphasis on analysis of representative works of each style period. Materials selected illustrate the history of style and changing techniques of composition.

C127A-C127F. Selected Topics in the History of Music. (Formerly numbered 127A-127F.) Lecture, three hours. Prerequisites to all courses: courses 11A-11F, 12A-12B, 14A-14C, 14D, 26A-26B-26C; in addition, 126A is prerequisite to C127D, 126B is prerequisite to C127E, and 126C is prerequisite to C127F. Designed as a proseminar for undergraduates in preparation for graduate work. Special aspects of the 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.

130. Music of the United States. Prerequisite: course 2A or consent of instructor. A survey of art music from Colonial times to the present. Mr. Stevenson

131A-131B. Music of Hispanic America. Prerequisite: consent of instructor. Course 131A is not prerequisite to 131B. Survey of art music, including attention to ethnic developments and peninsular background. **131A.** Mexico, Central America, and the Caribbean Isles; **131B.** Hispanic South America.
Mr. Loza

132A-132B. Development of Jazz. Lecture, three hours; laboratory, one hour. Prerequisite: course 2A or consent of instructor. Course 132A is prerequisite to 132B. An introduction to jazz; its historical background and its development in the United States.
Mr. Pinckney

133. Bach. Lecture, two hours; laboratory, two hours. The life and works of Johann Sebastian Bach.
Mr. Harmon

134. Beethoven. Lecture, two hours; laboratory, two hours. The life and works of Ludwig van Beethoven.
Mr. Winter

135A-135B-135C. History of the Opera. Lecture, four hours; laboratory, one hour. **135A.** Opera of the Baroque and Classical Periods; **135B.** Opera of the Romantic Period; **135C.** Opera of the 20th Century.

137A-137B. Psychology of Music. 137A. Designed for nonmajors. An introduction to the psychology of music; historical background and the broad field of study, including the use of music as a stimulus, tests and measurements, and related modes of musical behavior. **137B.** Prerequisites: courses 11A-11B-11C, 12A, 14A-14B, and 26A-26B-26C, or consent of instructor. A study of the psychological factors and problems in music from the points of view of the listener, performer, and composer. Mr. Kendall

138. Aesthetics of Music. Lecture, three hours. Designed for nonmajors. A historical survey of musical aesthetic thought and practice. Selected readings and musical examples. Mr. Schwadron

139. History and Literature of Church Music. Prerequisite: course 2A or consent of instructor. A study of the forms and liturgies of Western church music.

140A-140B-140C. Musical Cultures of the World. Prerequisite: consent of instructor. Course 140A is not prerequisite to 140B, which is not prerequisite to 140C. A survey of the musical cultures of the world (excluding Western art music), the role of music in society and its relationship to other arts; consideration also to scale structure, instruments, musical forms, and performance standards. **140A.** The musical cultures of Europe and the Americas; **140B.** Those of the Near East and Africa; **140C.** Those of South Asia, Southeast Asia, and the Far East.

141. Survey of Music in Japan. Lecture, three hours. A survey of the main genres of Japanese traditional music, including Gagaku, Buddhist chant, Biwa music, Koto music, Shamisen music, and the music used in various theatrical forms.

142A-142B. Folk Music of Eastern Europe and the Mediterranean. Prerequisite: consent of instructor. Course 142A is not prerequisite to 142B. **142A.** The 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 the major cultural subdivisions of the area. **142B.** The forms and styles of traditional music in the Mediterranean basin, particularly those in which interaction between European and Oriental styles is apparent.
Mr. Porter, Mr. Racy

143A-143B. Music of Africa. Lecture, three hours; laboratory, two hours. Prerequisites: courses 140A-140B-140C or consent of instructor. Course 143A is prerequisite to 143B. An investigation of the historical aspects, social functions, and relationships of music to other art forms in selected areas of Africa.
Ms. DjeDje

144. American Popular Music. Lecture, three hours; laboratory, two hours. Recommended prerequisite: course 1A or equivalent. A survey of the 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 a comparison between traditional pre-1950 popular music and trends in post-1950 popular music.

145. History of Chinese Opera. Prerequisite: consent of instructor. A 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. Mr. Lui

146A-146B-146C. Studies in Chinese Instrumental Music. Lecture, three hours; laboratory, one hour. Prerequisite: consent of instructor. Course 146A is not prerequisite to 146B, which is not prerequisite to 146C. **146A.** A study of the literature, major sources, paleography, theory, and philosophy of the Ch'in and P'i P'a, including transcription and analysis. **146B.** A comprehensive study of Chinese musical instruments, classification system, specific musical notation, and use in the context of Chinese society. **146C.** A study of the rules of improvisation, particularly as related to the Shanghai style, as realized on the P'i P'a, Ti, Er Hu, San Shien, Sheo, and related instruments. Mr. Lui

147A-147B. Music of China. Lecture, three hours; laboratory, two hours. Prerequisites: courses 140A-140B-140C or consent of instructor. **147A.** History and theory of the music of China, including a survey of various provinces. Instrumental techniques. **147B.** Prerequisite: course 147A. Introduction to various notational systems. Analysis of representative styles.
Mr. Lui

148. Folk Music of South Asia. Prerequisite: consent of instructor. An illustrated survey of some of the regional genres, styles, and musical instruments found in India and Pakistan, with special reference to the religious, social, economic, and cultural context of their occurrence. Mr. Jairazbhoy

149. The Anthropology of Music. A cross-cultural examination of music in the context of social behavior and how musical patterns reflect patterns exhibited in other cultural systems, including economic, political, religious, and social structure.

151A-151B. History of Musical Performance Practices. Prerequisites: courses 11A-11F, 12A-12B, 14A-14C, 14D, 26A-26B-26C. A general survey of musical interpretation and re-creation from the viewpoint of stylistic authenticity. **151A.** Medieval through Baroque; **151B.** Classic through 20th Century.

152. Survey of Music in India. A consideration of the main music genres in India, with particular reference to the religious, sociocultural, and historical background of the country. Mr. Jairazbhoy

153A-153B-153C. Music of the American Indians. American Indian music studied within the broader context of styles, cultural values, and sources. Films, recordings, lectures, and limited group singing and dancing, relating the music to the culture producing it. **153A.** Musics of the Eastern, California-Yuman, Great Basin, and Northwest Coast Areas; **153B.** Musics of the Athabascan, Pueblo, Plains, and Modern Pan-Indian Trends; **153C.** Sociology of American Indian music, with specific reference to the manner in which cultural values, prescriptions, oral traditions, language, and technological advances have affected music of various tribes. Ms. Heth

M154A-M154B. The Afro-American Musical Heritage. (Same as Folklore M154A-M154B.) Prerequisite: course 1A or consent of instructor. Course M154A is prerequisite to M154B. A study of Afro-American rhythm, dance, music, field hollers, work songs, spirituals, blues, and jazz; the contrast between West African, Afro-American, and Afro-Brazilian musical traditions. Ms. DjeDje

155. Audio Technology for Musicians. Lecture, two hours; laboratory, three hours. Prerequisites: courses 11C, 14B, consent of instructor. The theory and practice of sound engineering in relation to concert and studio recording techniques. Mr. Ashforth

156. Electronic Music: Theory and Techniques. (Formerly numbered 156A.) Lecture, three hours; laboratory, three hours. Prerequisites: course 107A or equivalent, consent of instructor. Not open for credit to students with credit for former course 156A. 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

157. Music of Brazil. Prerequisites: consent of instructor, some knowledge of Portuguese. History of ethnic and art music in Brazil, with some reference to Portuguese antecedents. Mr. Stevenson

158. New Orleans Jazz. Lecture, three hours; discussion, two hours. Major Black and Creole figures in the origin and development of jazz in New Orleans from the turn of the 20th century through the 1960s, with emphasis on polycultural roots, local municipal traditions, and stylistic analysis. Mr. Ashforth

159. The Development of Rock. Prerequisite: consent of instructor. The history of rock from the 1950s to the 1970s. An in-depth survey of stylistic trends illustrated by pertinent examples and accompanied by extensive musical analysis. Mr. Stevenson

160A-165. Undergraduate Instruction in Performance for the Performance Specialist. Limited to upper division music majors who have been accepted by audition into the 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. Units are distributed on the basis of one unit each for Fall and Winter Quarters and four units for Spring Quarter. Grades are assigned by the applied instructor in Fall and Winter and by jury examination in Spring. May be repeated for credit:

160A. Violin.	Ms. Kamei, Mr. Treger
160B. Viola.	Ms. Kamei
160C. Cello.	Mr. Oliver
160D. String Bass.	Mr. Zibits
160E. Harp.	Ms. Neill
160F. Classical Guitar.	Mr. Norman, Mr. Yates
160G. Viola da gamba.	Ms. Marcus
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. Main
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

174A-174E. Musical Terminology and Diction for Musicians (1 unit each). (Formerly numbered 174A-174D.) Prerequisite: music major or consent of instructor. Recommended for music students in any area and at any level. Specialized work in pronunciation, diction, and musical terminology as applied to the performance and interpretation of vocal and instrumental scores to enable students to function in today's multinational world of music. Students may enroll in two sections per quarter; a total of four units may be applied toward the degree requirements. Each course may be repeated once for credit. **174A.** German; **174B.** French; **174C.** Spanish; **174D.** Italian; **174E.** English. Mrs. Hast

175. Chamber Ensembles (2 units). Prerequisite: audition. Students must be at the advanced level of their instrument to participate. Applied study of the performance practices of literature appropriate to the ensemble. Students may enroll in two sections per quarter; a total of 12 units may be applied toward the degree requirements. May be repeated for credit.

C176. Electronic Music Composition. (Formerly numbered C156B.) Lecture, three hours; studio, three hours. Prerequisites: course 156, advanced experience and accomplishment in serious composition (art music), consent of instructor. Not open for credit to students with credit for former course C156B. 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

M180. Analytical Approaches to Folk Music. (Same as Folklore M180.) Prerequisites: courses 5A-5B-5C or consent of instructor. An intensive study of the methods and techniques necessary to the understanding of Western folk music. Mr. Porter

M181. Folk Music of Western Europe. (Same as Folklore M181.) Prerequisite: consent of instructor. Introduction to the forms and styles of traditional music in Western Europe. Historical and ethnological perspectives on this music combined with numerous recorded examples from the major cultural subdivisions of the region. Mr. Porter

184. Experimental Research in Music. Lecture, three hours. Prerequisites: courses 11A-11F, 12A-12B, 14A-14C, 14D, and 26A-26B-26C, or 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

C185. Historical and Philosophical Foundations of Music Education. (Formerly numbered 185.) Lecture, three hours. Prerequisite: completion of the undergraduate music education specialization or consent of instructor. The development of music education in the United States according to established schools of thought. May be concurrently scheduled with course C225. Mr. Schwadron

187. Problems in Musical Aesthetics. Lecture, three hours. Prerequisites: courses 11A-11F, 12A-12B, 14A-14C, 14D, 26A-26B-26C. Recommended for students in all music specializations. Critical approach to musical problems of aesthetic analysis, description, values, theories, including both Western and non-Western considerations.
Mr. Schwadron

188A-188F. The Master Composer. (Formerly numbered 188A-188Z.) Lecture, three hours; laboratory, one hour. A survey of the works of an outstanding composer in Western art music, considered within the context of his age. Each course may be repeated for a maximum of 16 units. **188A.** Middle Ages; **188B.** Renaissance; **188C.** Baroque; **188D.** Classic; **188E.** Romantic; **188F.** 20th Century.

189. The Symphony. Lecture, three hours; laboratory, one hour. A survey of symphonic literature from Haydn through the 20th century, with special emphasis on the current symphonic programs of the Los Angeles Philharmonic Orchestra and other performing groups in the Los Angeles area.

C190A-C190B. Proseminar in Ethnomusicology. (Formerly numbered 190A-190B.) Lecture, three hours. Prerequisites: courses 140A-140B-140C. May be concurrently scheduled with courses C290A-C290B. Mr. Loza, Mr. Racy

193. Proseminar in Music Education (2 units). Prerequisites or corequisites: course 11A, sophomore standing. A historical and philosophical introduction to the field. Mr. Schwadron

195. Field Studies in Music Education (2 units). Discussion, two hours; laboratory, two hours. Prerequisite: course 193. Discussion and observation of current practices. Mr. Anderson, Miss Hooper

199. Special Studies in Music (2 or 4 units). Hours to be arranged. Prerequisites: senior standing, consent of instructor and department chair, 3.0 GPA. Individual studies in music resulting in a research project. May be repeated for a maximum of eight units.
Mr. Harmon and the Staff

Graduate Courses

200A. Research Methods and Bibliography (6 units). Lecture, three hours. Prerequisite: graduate standing. A survey of general bibliographic material in music.

200B. Research Methods and Bibliography (6 units). Lecture, three hours. Prerequisite: course 200A. Guided writing, utilizing specific bibliography, in systematic musicology, ethnomusicology, and music education.

201A-201B-201C. Introductory Seminar in Historical Musicology (6 units each). Lecture, three hours. Course 201A is prerequisite to 201B, which is prerequisite to 201C. An introduction at the graduate level to the central questions and problems in the history of Western music designed to give beginning graduate students a unified background for the remainder of their studies and to employ their developing skills in research and bibliography.

210. Medieval Notation (6 units). Lecture, three hours. Prerequisite: consent of instructor. Vocal and instrumental notation; paleography of the period.
Ms. Gollner

211. Renaissance Notation (6 units). Lecture, three hours. Prerequisite: consent of instructor. Vocal and instrumental notation; paleography of the period.
Mr. D'Accone

C225. Historical and Philosophical Foundations of Music Education. Lecture, three hours. Prerequisites: graduate standing, consent of instructor. The development of music education in the United States according to established schools of thought. May be concurrently scheduled with course C185. Additional assignments, as well as evidence of a greater depth of study, required of graduate students.
Mr. Schwadron

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

C227A-C227F. Selected Topics in the History of Music. Lecture, three hours. Prerequisite: graduate standing. Special aspects of the 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 a greater depth of study, required of graduate students. **C227A.** Middle Ages; **C227B.** Renaissance; **C227C.** Baroque; **C227D.** Classic; **C227E.** Romantic; **C227F.** 20th Century.

248. Seminar in Comparative Music Theory (6 units). Lecture, three hours. Prerequisite: consent of instructor. The comparative study of the 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.

250A-250B. Seminar in the History of Music Theory (6 units each). Lecture, three hours. Prerequisite: course 200A. Course 250A is not prerequisite to 250B. **250A.** Music Theory from Antiquity through Zarlino; **250B.** Music Theory from Rameau to the Present. Mr. D'Accone, Ms. Gollner

251A-251D. Seminar in Special Topics in Composition and Theory. Seminar, three hours. An 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. Seminar in Composition (6 units each). Lecture, three hours. Prerequisites: courses 106B, 107C. 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. Des Marais, Mr. Travis

253. Seminar in Notation and Transcription in Ethnomusicology (6 units). Lecture, three hours. Prerequisites: courses 140A-140B-140C and C190A-C190B, or consent of instructor.

254A-254B. Seminar in Field and Laboratory Methods in Ethnomusicology (6 units each). Lecture, three hours. Prerequisites: courses C190A-C190B or consent of instructor. Training includes experience in handling of technical apparatus, films, recording, processing, and editing; field projects.
Mr. Jairazbhoy

255. Seminar in Musical Instruments of the Non-Western World (6 units). Lecture, three hours. Prerequisites: courses 140A-140B-140C and C190A-C190B, or consent of instructor. Ms. De Vale

256. Seminar in Musical Form (6 units). Lecture, three hours. Prerequisites: courses 126A-126B-126C. The analysis of structural organizations in music. Mr. Cole

257. Seminar in Music of the United States and Canada. Seminar, three hours. Prerequisite: course 130.

M258. Seminar in Folk Music. (Same as Folklore M258.) Seminar, three hours. Prerequisite: consent of instructor. Mr. Porter, Mr. Wilgus

260A-260F. Seminar in Historical Musicology (6 units each). Lecture, three hours. Prerequisites: courses 200A, 201A-201B-201C, and 210 or 211 (either may be taken concurrently). May be repeated for credit. **260A.** Medieval Music; **260B.** Renaissance; **260C.** Baroque; **260D.** Classical; **260E.** Romantic; **260F.** General Topics.

261A-261F. Problems in Performance Practices. Seminar, three hours. Prerequisites: courses 151A-151B or consent of instructor. An 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. Seminar in Music of the 20th Century. Seminar, three hours. Prerequisites: courses 126A-126B-126C. **266A.** Discussion and analysis of the major works of the 20th century before World War II. Emphasis on the study of groups of works written at the same time in history. **266B.** Discussion and analysis of composers and their works from 1945 to the present. Ms. Barkin

269. Seminar in the History of European Instruments. Seminar, three hours. Mr. Hammond

270A-270G. Seminar in Music Education (6 units each). (Formerly numbered 270A-270F.) 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.

272. Seminar in Systematic Musicology. Seminar, three hours. Prerequisites: course 108, consent of instructor. May be repeated for credit.

273. Seminar in Acoustics of Music (6 units). Lecture, three hours. Prerequisite: course 108 or consent of instructor. May be repeated once for credit.
Mr. Hutchinson

275. Seminar in Aesthetics of Music (6 units). Lecture, three hours. Prerequisite: course 187 or consent of instructor. May be repeated once for credit.
Mr. Schwadron

276. Seminar in the Psychology of Music (6 units). Lecture, three hours. Prerequisite: course 184 or consent of instructor. Selected topics in the psychology of music, including recent findings in brain research, musical perception, learning, cognition, memory, therapy, affect, meaning, and measurement. May be repeated for credit. Mr. Kendall

280. Seminar in Ethnomusicology (6 units). Lecture, three hours. Prerequisites: courses 140A-140B-140C, C190A-C190B, 200A, 200B. May be repeated for credit.

281A-281B. Music of Indonesia. Lecture, three hours. Prerequisite: consent of instructor. During the first quarter, emphasis on the music and related performing arts of Java. Focus on the music and performing arts of Bali and other Indonesian islands during the second quarter. Concurrent participation in one of the Indonesian performance groups required.
Ms. De Vale

282. Music of Iran and Other Non-Arabic-Speaking Communities. Seminar, three hours. Prerequisite: consent of instructor. A comparative study of the 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 the Near East performance group required. Mr. Racy

284. Music of the Arabic-Speaking Near East. Lecture, three hours. Prerequisite: consent of instructor. An investigation of the historical and cultural backgrounds, the main musical styles, the relationship between theory and practice and emphasis on mode and improvisation, and 20th-century trends. Concurrent participation in the Near East performance group required. Mr. Racy

285. Music of Tibet. Seminar, three hours. Prerequisite: consent of instructor. A study of the traditional music of ethnic Tibet as ritual, art, and folklore in its cultural matrix and its relationship with other arts. Topics include traditional instruments and ensembles and studies in formal and stylistic analysis.

286A-286B. Classical Music of India. Seminar, three hours. Prerequisite: consent of instructor. A study of the history, theory, and practice of north and south Indian classical music. During the first quarter, emphasis on music history and traditional theory; the second quarter, analysis of present-day forms, styles, techniques, and musical instruments. Concurrent participation in the Indian performance group required. Mr. Jairazbhoy

287. Seminar in African Music. Seminar, three hours. Prerequisites: courses 140A-140B-140C, 143A-143B, 200A, 200B. Intensive investigation of musical style, historical, social, and cultural aspects of indigenous musical traditions and related art forms. Ms. DjeDje

288. Seminar in North American Indian Music. Seminar, three hours. Prerequisite: consent of instructor. A 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. The influence of Western music in acculturative contexts.
Ms. Heth

289. Seminar in Afro-American Music. Seminar, three hours. Prerequisites: courses M154A-M154B or consent of instructor, graduate standing. Intensive investigation of the problems, theories, and methods of research related to the study of Afro-American music. Emphasis on the relationship of problems to representative styles of Afro-American music. S/U or letter grading. Ms. DjeDje

C290A-C290B. Proseminar in Ethnomusicology. Lecture, three hours. Prerequisites: graduate standing, consent of instructor. 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 a greater depth of study, required of graduate students.
Mr. Loza, Mr. Racy

370. Music in General Education (2 units). Prerequisite: graduate standing in the Graduate School of Education teacher training program (all music students must take course 370 concurrently with Education 100A, 100B, 112, 312, 315A, 315B, and supervised teaching). Critical discussions related to supervised teaching in progress. May be repeated twice for credit. Mr. Anderson, Miss Hooper

371. The Marching Band in Secondary Education (2 units). Prerequisites: courses 193 and 195, or consent of instructor. The study of the 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.

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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 the 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.

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. Mr. Krachmalnick

475. Master Class in Conducting (6 units). Laboratory, three hours. Limited to M.F.A. students. Intensive study and preparation of musical literature in the 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 a teaching apprentice in the Music Department. Required of all new teaching apprentices. A special course dealing with the problems and practices of teaching music at the college level. May not be applied toward degree requirements. S/U grading.
Miss Hooper

596A. Directed Individual Studies in Orchestration and Composition (2, 4, or 6 units). Only four units may be applied toward the M.A. or M.F.A. degree requirements. May be repeated for credit.

596B. Directed Individual Studies in Musicology (2, 4, or 6 units). Only four units may be applied toward the M.A. or M.F.A. course requirements.

596C. Directed Individual Studies in Music Education (2, 4, or 6 units). Only four units may be applied toward the 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 the 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

Theater, Film, and Television

2310 Macgowan Hall, (213) 825-5761

Professors

William B. Adams, M.A.
Nicholas K. Browne, Ed.D.
John R. Cauble, M.A.
Donald B. Crabs, M.A.
Arthur B. Friedman, Ph.D.
William Froug, B.J.
Henry Goodman, Ph.D.
Richard C. Hawkins, M.A.
Carl R. Mueller, Ph.D.
Jorge R. Preloran, B.A.
Delia N. Salvi, Ph.D.
George L. Schaefer, B.A., *Chair*
Louis C. Stoumen, B.A.
Frank A. Valert
Norman F. Welsh, B.A.
John W. Young, M.A.

Emeritus Professors

Walden P. Boyle, Ph.D.
Shirley M. Clarke, A.A.
Robert F. Corrigan, M.A.
Michael Gordon, M.F.A.
Edward Hearn, M.A.
Melvyn B. Helstien, Ph.D.
Robert H. Hethmon, Ph.D.
John H. Jones, M.A.
Walter K. Kingson, Ed.D.
William W. Melnitz, Ph.D.
William H. Menger, M.A.
Darrell E. Ross, M.F.A.

Associate Professors

Alan M. Armstrong, M.F.A.
Teshome H. Gabriel, Ph.D.
Gary A. Gardner, Ph.D.
Stephen D. Mamber, Ph.D.
Dan F. McLaughlin, M.A.
Joanne T. McMaster, M.F.A.
Sylvia E. Moss, B.A.
Robert A. Nakamura, M.F.A.
Thomas J. Orth, M.F.A.
Ruth E. Schwartz, Ph.D.

Howard Suber, Ph.D.
William D. Ward, M.F.A.
William T. Wheatley, Ph.D.
Margaret L. Wilbur, M.F.A.

Assistant Professors
Janet L. Bergstrom, Ph.D.
Ivan N. Cury, M.F.A.
Michael J. Hackett, Ph.D.
Patricia M. Harter, Ph.D.
Michael S. McLain, Ph.D.
Kathryn C. Montgomery, Ph.D.
Beverly J. Robinson, Ph.D.
Richard S. Rose, M.F.A.
Carol J. Sorgenfrei, Ph.D.
Richard Walter, M.A.

Lecturers
John D. Boehm, M.A.
Edgar L. Brokaw, B.A.
Hugh M. Grauel, M.A.
Mark McCarty, M.A.

Adjunct Professors
Theodore Apstein, Ph.D.
Lyne S. Trimble, M.S.

Adjunct Associate Professor
Robert Trachinger

Adjunct Assistant Professor
Robert Feder, M.D.

Adjunct and Visiting Lecturers
Max Almy, M.F.A., *Visiting*
Robert Bookman, J.D., *Visiting*
Ann Busby, J.D., *Visiting*
Matthew J. Chait, M.A., *Visiting*
Gordon Davidson, M.A., *Visiting*
Peter J. Dekom, J.D., *Visiting*
Anthony DeLongis, B.A., *Visiting*
Vincent J. Di Bona, M.F.A., *Visiting*
William A. Glover, *Visiting*
H. Peter Guber, LL.M., *Visiting*
Peter M. Hay, M.A., *Visiting*
Norman Horwitz, B.A., *Visiting*
Lewis R. Hunter, M.A., *Visiting*
Jennifer Penny, M.F.A., *Visiting*
Martin Ransohoff, B.A., *Visiting*
Robert Rosen, M.A., *Adjunct*
Robert M. Silberling, M.F.A., *Visiting*
Greg L. Sullivan, M.F.A., *Visiting*
Romulus E. Zamora, M.F.A., *Visiting*

Scope and Objectives

The UCLA Department of Theater, Film, and Television is considered among the finest of its kind in the country and is the only one that combines theater, motion picture, and television in a single department.

The department bases its work on a solid foundation in the liberal arts. The purpose of the curriculum is to develop in its students a scholarly, creative, and professional approach to the theater arts. The aim of the department is to train graduates who will eventually make original contributions in the field of their work.

Each of the department's two divisions, Theater and Motion Picture/Television, offers an undergraduate program leading to the Bachelor of Arts degree, as well as graduate programs leading to the Master of Arts, Master of Fine Arts, and Ph.D. degrees.

Bachelor of Arts in Motion Picture/Television

Preparation for the Major

Admission to this major is not automatic. You may not apply until just prior to achieving full standing as a junior at the University. You must have at least 84 quarter units (56 semester units) of credit and have completed the general University and College of Fine Arts requirements before entering the major. You must also obtain departmental consent by (1) filing a letter of intention, (2) giving evidence of creative or critical ability when requested, and (3) providing additional material as determined by the department.

The Major

The major in motion picture/television consists of 68 upper division units taken in the junior and senior years. These include Motion Picture/Television 109, 134A, 166 (eight units), 185 (eight units); one of the following writing courses: 131, 133, 135 (eight units), 181B; two of the following film history courses: 106A, 106B, 106C, 106D, 106E, 108, 110A; two of the following film criticism courses: 107, 110B, 112, 113, 114, 116; two motion picture/television elective area courses; and four upper division adviser-approved cognate courses pertinent to your study in at least two other departments, including the theater area of the department (these courses may not be used to satisfy College of Fine Arts or University requirements). 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.

Note: 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.

Check the *Schedule of Classes* for courses limited to majors only.

Bachelor of Arts in Theater

Preparation for the Major

Required: Theater 5A, 5B, 5C, 10, 20, English 90.

The Major

Required: A total of 60 upper division units, including Theater 130A, 140A, 141A, 142A, 143, 160 or 161A*, 170, C172 (eight units); one course from 122, 144A, C146, 149A, 174, C190A, C190B; 22 units of approved upper division theater electives. Through certain of these required courses, you are responsible for completing specific production assignments related to production activity of the theater curriculum during each quarter in residence.

*If course 161A is used to complete the requirement, 24 units of electives are required.

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 the following specializations: (1) motion picture/television and (2) theater.

Admission

Students are generally admitted in the Fall Quarter only. Applicants for another quarter should consult the Student Affairs Office, Theater, Film, and Television, 1327 Macgowan Hall, UCLA, Los Angeles, CA 90024. 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 the Graduate Admissions Office, and no screening examination prior to admission is required.

In addition to satisfying minimum University requirements for graduate admission, you must:

(1) Have completed an undergraduate major in theater or motion picture/television comparable to that offered at UCLA. Students whose theater arts preparation is determined to be deficient are required to make up those deficiencies.

(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

Motion Picture/Television Specialty

Admission

If you do not have an undergraduate major comparable to that of the department, you must submit for consideration film and television work done at other institutions (confirmed as your work by the instructors originally involved), as well as evidence of your production and scriptwriting competence. Alternatively, you may be required to take such courses at UCLA as will fulfill these requirements, though these courses may not be applied toward the minimum of nine courses required for the M.A. degree.

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.

Foreign Language Requirement

You may be required to demonstrate competence in a foreign language if necessary to support the research in your area of specialization.

Course Requirements

A minimum of nine courses is required, five of which must be 200-level courses in film and/or television history, theory, and criticism. In addition, Motion Picture/Television 200 is required of all students. All six of the graduate-level courses must be completed with a grade of B or better.

Only eight units of courses 596A, 596B, 596C, and 598 may be applied toward the total course requirement; however, none of these courses may be applied toward the minimum graduate course requirement.

Thesis Plan

Before beginning work on the thesis, you must obtain approval of a subject dealing with history, aesthetics, or criticism in motion picture/television and a general plan of investigation from the film/television studies committee. 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. A thesis committee is formed when you are within one quarter of completing the coursework, at which time you are eligible to advance to candidacy.

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

The written examination consists of three days of testing, four hours each day, and examines a broad range of knowledge in motion picture/television. After completion, your committee grades you either pass or fail. You may repeat any failed portions of the examination once in the following quarter.

Theater Specialty

Admission

Requirements include a sample of scholarly or critical writing, statement of purpose, and other information (resume, portfolio, script interview, etc.) that may be required to establish the quality of work in the specialization.

Major Fields or Subdisciplines

The program leads to a general graduate degree, though there are opportunities, through your electives and thesis or research paper topic, to stress a particular interest such as acting, children's theater, design, directing, playwriting, puppet theater, theater history and criticism, theater management, and theater technology.

Foreign Language Requirement

The program does not require a foreign language, but you are urged to develop a 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 200, 245A-245B, and C272 (a two-unit course to be taken three times). After consultation with your adviser, you select five courses, including one graduate course in theater history and another in theater production theory, as well as three 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, and 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 M.A. committee. A thesis committee is formed when you are within one quarter 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 50-page 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 the final quarter of residency, at which time you should have advanced to candidacy.

Master of Fine Arts Degree

Motion Picture/Television Specialty

NOTE: The department's motion picture/television M.F.A. production programs are currently being revised, and students admitted for the 1986-87 academic year and thereafter are advised to check with the department for descriptions of such changes.

Admission

Applicants with diverse backgrounds and undergraduate majors in areas other than theater arts are encouraged. You must state clearly your degree objective (M.F.A.) and the area of specialization desired within the program: animation, filmmaking, screenwriting, producers program, or television production.

If you intend to concentrate in film or television production, a description of a film or television project designed to be undertaken during graduate residence at UCLA is required. This should be in proposal, script, or treatment form.

If you intend to concentrate in writing, a finished full-length feature script in dramatic form is desirable; however, other forms of creative writing may be submitted.

If you intend to concentrate in animation, a description of an animation project to be undertaken during graduate study must be submitted, preferably in storyboard form. Other creative work may be submitted.

If you intend to concentrate in the producers program, you must submit a comprehensive statement detailing your reasons for pursuing a career as a producer/executive in motion picture/television.

Major Fields or Subdisciplines

The program includes specializations in animation, filmmaking (fictional, documentary, education), screenwriting, and television production. Ethnographic film is a subdiscipline.

Foreign Language Requirement

There is no foreign language requirement for the M.F.A. degree.

Course Requirements

A total of 18 courses is required for the degree, five of which must be 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 in the Student Affairs Office, 1327 Macgowan Hall.

Only 16 units of Motion Picture/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 quarter 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 Affairs Office, 1327 Macgowan Hall, for further information.

M.A.-African Area Studies/M.F.A.

The Motion Picture/Television Division of the Department of Theater, 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., with a specialization in motion picture/television. Articulated programs do not allow course credit to be applied toward more than one degree. Interested students should write to the Graduate Adviser, Graduate Student Affairs Office, Motion Picture/Television Division, UCLA Theater, Film, and Television Department, and to the Graduate Adviser, African Area Studies Program, UCLA African Studies Center.

Theater Specialty

Admission

Evidence of creative ability and professional intent is required. At the time of application to the Graduate Division, you must clearly state the degree objective (M.F.A.) and one of the following areas of specialization within the M.F.A. (Theater) program.

Acting: Submit strong letters of recommendation from directors familiar with your work, a complete resume of your experience, and photographs; audition for the M.F.A. faculty committee.

Design (scenic, costume, or both): Submit examples of creative work such as a portfolio of designs, sketches, working drawings, and photographs.

Directing: Submit evidence of motivation and talent through production and prompt books, reviews, critical commentaries, and strong letters of recommendation. An interview may be requested by the department.

Playwriting: Submit examples of creative writing such as full-length plays, one-act plays, and screenplays.

Producers Program: Submit a comprehensive statement detailing your reasons for pursuing a career as a producer/executive in theater.

Puppet Theater: Submit actual puppets and photographs; audition for the M.F.A. committee or its representative.

Theater Technology: Submit evidence of ability demonstrated through production books, working drawings, lighting plots, photographs, and strong letters of recommendation.

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

A total of 18 courses (72 units) is required, five of which must be graduate level. Only 16 units of Theater 596 may be applied toward the total course requirement and the minimum graduate course requirement.

Specific course requirements for each specialization are available in the Student Affairs Office, 1327 Macgowan Hall.

Fieldwork: Occasionally, students fulfill project requirements in the field. As an example, a student might complete a directing or design project with a community or church organization or a municipal division such as the Parks and Recreation Department.

Internship: Some specializations, such as the producers program and puppet theater, may take advantage of opportunities offered by professional organizations.

Comprehensive Examination Plan

The plan is satisfied by fulfilling a series of creative projects appropriate to your specialization. On completion of the final creative project or last quarter of residency, whichever is last, you must file for advancement to candidacy. The committee then reviews and evaluates your record for a degree. Your participation in the final review is at the discretion of the committee.

Ph.D. Degree

Motion Picture/Television Specialty

Admission

Completion of a master's degree (M.A. or M.F.A.) equivalent to those offered by the UCLA Department of Theater, Film, and Television is required. In exceptional cases, students with an M.A. outside the field will be considered for direct admission to the program. Evidence of potential as a practicing scholar is indicated by (1) breadth and depth of advanced coursework in history, theory, and criticism; (2) imagination and quality of scholarly writing; (3) academic achievements and potential as indicated by the grade-point average, Graduate Record Examination (GRE) scores, awards, scholarships, teaching assistantships, etc.

The dossier submitted for admission must contain a letter describing your reasons for wishing to earn the Ph.D., plus the master's thesis or writing samples that demonstrate a high level of ability to write criticism or historical narrative.

Note: Supporting material will be returned only if accompanied by postage, envelope, and shipping instructions. Further information is available from the Student Affairs Office, Theater, Film, and Television, 1327 Macgowan Hall, UCLA, Los Angeles, CA 90024.

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 in one of the following ways: (1) passing the Educational Testing Service (ETS) examination in French, Spanish, German, or Russian with a score of 500 or better; (2) completing level five or equivalent, with a minimum grade of C, in any foreign language; (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.

In certain cases with committee approval, a research tool such as statistics or computer science may be substituted for the foreign language.

Course Requirements

During the first six quarters in the motion picture/television specialization, you must take 13½ courses. During your first year in residence, Motion Picture/Television 211B, 215, and 273 must be completed, while course 274 is required in your last quarter in residence. 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 drawn from film and television studies offerings.

You must select from these elective courses three areas of concentration, chosen to broaden your familiarity and competence with various and diverse subject matters. 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/television, television studies, media and society, film/television as a business enterprise, and film/television production. It is expected that the dissertation topic will emerge from one of the concentrations.

Teaching Experience

Every student must complete Motion Picture/Television 495A or 496, depending on program requirements.

Qualifying Examinations

At the end of your second quarter in residence, you must take a preliminary oral examination to be conducted by a representative committee of the faculty of your specialization. The committee specifies the areas of review, tests your background preparation and progress to date, and determines your general fitness to continue in the doctoral program.

After completing 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 in three-hour segments during two successive days. Information regarding the examination is available from the divisional Ph.D. committee. You may be reexamined on any failed parts of the examination.

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.

A dissertation demonstrating your ability to carry out independent and significant inquiry in a historical, theoretical, or critical field of theater arts is required. Final award of the Ph.D. depends on successful completion 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

A final oral examination, held after the completion of the dissertation, may be required at the option of the dissertation committee.

Theater Specialty

Admission

See admission requirements for the Ph.D. (motion picture/television specialty) above. In addition, theater applicants must submit evidence of artistic competence in some facet of theater production.

Simultaneous application may be made to both the M.A. and Ph.D. programs in theater.

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

See foreign language requirements for the Ph.D. (motion picture/television specialty) above.

Course Requirements

During the first six quarters (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 division 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 or 496, depending on program requirements.

Qualifying Examinations

See the description of qualifying examinations under the Ph.D. (motion picture/television specialty) above.

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, held after the completion of the dissertation, may be required at the option of the dissertation committee.

Motion Picture/Television

Upper Division Courses

106A. History of the American Motion Picture. (Formerly numbered Theater Arts 106A.) Lecture/screenings, eight hours; discussion, one hour. A 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 departmental consent and with topic change.

106B. History of the European Motion Picture. (Formerly numbered Theater Arts 106B.) Lecture/screenings, eight hours; discussion, one hour. A 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 departmental consent and with topic change.

106C. History of African, Asian, and Latin American Film. (Formerly numbered Theater Arts 106C.) Lecture/screenings, eight hours; discussion, one hour. A critical, historical, aesthetic, and social study — together with an exploration of the ethnic significance — of Asian, African, Latin American, and Mexican films.

106D. The Development of Film in Europe and the United States from WWI through the Depression. (Formerly numbered Theater Arts 106D.) Lecture/screenings, eight hours; discussion, one hour. An interdisciplinary and comparative approach to the development of film in Europe and the United States from the silent era through the Depression. Particular emphasis on the interrelationship of film with its historical context and the social dimensions of film structure, aesthetics, and language.

106E. The Development of Film in Europe and the United States from WWII to the Present. (Formerly numbered Theater Arts 106E.) Lecture/screenings, eight hours; discussion, one hour. Course 106D is not prerequisite to 106E. An interdisciplinary and comparative approach to the development of film in Europe and the United States from the end of the 1930s to the present. Particular emphasis on the interrelationship of film with its historical context and the social dimensions of film structure, aesthetics, and language.

107. Experimental Film. (Formerly numbered Theater Arts 107.) Lecture/screenings, eight hours; discussion, one hour. A study and analysis of unconventional developments in the motion picture.

108. History of Documentary Film. (Formerly numbered Theater Arts 108.) Lecture/screenings, eight hours; discussion, one hour. Prerequisite: consent of instructor. The philosophy of the documentary approach in the motion picture. The development of critical standards and an examination of the techniques of teaching and persuasion used in selected documentary, educational, and propaganda films.

109. Introduction to Film and Television Study. (Formerly numbered Theater Arts 109.) Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Required of motion picture/television majors in the first quarter in residence and recommended as a prerequisite to other motion picture/television history and criticism courses. Introduction to the major principles and concepts that organize film and television studies, including author, work, style, genre, structure, and ideology, with special attention to the approaches and procedures involved in a critical reading of a work.

110A. History of Broadcasting. (Formerly numbered Theater Arts 110A.) Lecture/viewing, six hours; discussion, one hour. Prerequisite: consent of instructor. Critical survey of broadcasting here and abroad. Consideration of the social responsibilities and educational implications of broadcasting.

110B. Problems and Issues in Broadcast Media. (Formerly numbered Theater Arts 110B.) Lecture, four hours; discussion, two hours; laboratory, to be arranged. Prerequisite: consent of instructor. Study of the current issues and problems related to public and commercial broadcast programming and management, including analysis of contemporary criticism of the broadcast media.

111. Film Distribution and Exhibition. (Formerly numbered Theater Arts 111.) Lecture, three hours; laboratory, to be arranged. Prerequisite: consent of instructor. History and theory of organization of theatrical and nontheatrical distribution and exhibition of motion pictures and analysis of their interrelationships with production practices.

112. Film and Social Change. (Formerly numbered Theater Arts 112.) Lecture/screenings, eight hours; discussion, one hour. The development of documentary and dramatic films in relation to and as a force in social development.

113. Film Authors. (Formerly numbered Theater Arts 113.) Lecture/screenings, eight hours; discussion, one hour. An in-depth study of a specific film author (director or writer). May be repeated once for credit with departmental consent and with topic change.

114. Film Genres. (Formerly numbered Theater Arts 114.) Lecture/screenings, eight hours; discussion, one hour. Study of a specific film genre (e.g., the Western, the gangster cycle, the musical, the silent epic, the comedy, the social drama). May be repeated once for credit with departmental consent and with topic change.

115. Producers and Their Films. (Formerly numbered Theater Arts 115.) Lecture/screenings, eight hours; discussion, one hour. A consideration of the individual or corporate producers as they have affected the art and industry of the motion picture. Content varies; consideration of the work of a studio such as Paramount, Metro-Goldwyn-Mayer, Warner Brothers, etc. or of an individual such as Samuel Goldwyn, Stanley Kramer, Hal Wallis, etc. May be repeated once for credit.

116. Criticism. (Formerly numbered Theater Arts 116.) Lecture, four hours; laboratory, to be arranged. Study of and practice in criticism for the theater, motion pictures, and television. May be repeated once for credit with departmental consent and with topic change.

126A. Advanced Acting for Television and Motion Pictures. (Formerly numbered Theater Arts 126A.) Laboratory, six hours. Prerequisite: Theater 20 or consent of instructor. Projects in acting for television and motion pictures. Videotape recording of selected acting exercises and readings. May be repeated twice for credit.

126C. Sportscasting. (Formerly numbered Theater Arts 126C.) Lecture, two hours; laboratory, four hours. Prerequisite: consent of instructor. Intensive study of sportscasting; laboratory emphasis on studio and field training; videotaping and playback of straight sportscasts, play by play, color, interviews, commentary, and editorials. Students are required to write original material for all exercises. Extensive training re handheld field equipment; use of the remote truck. Field exercises. Students rotate in production positions. May be repeated twice for credit.

127. The Film Image. (Formerly numbered Theater Arts 127.) Lecture, one hour; discussion, two hours; laboratory, one hour. Prerequisite: consent of instructor. Proseminar in the craft of film aesthetics. The visual revolution. Biophysical nature of perception. Lenses, perspective, graphic styles. Principles of composition, screenwriting, sound, editing. Problems of time and movement. How a director views his work and his world.

128. Media and Ethnicity. (Formerly numbered Theater Arts 128.) Prerequisite: consent of instructor. Utilizing the Asian American experience, exploration of the impact and uses of media on contemporary American ethnic communities. Role and techniques of media influence besides community utilization and production.

131. Nontheatrical Motion Picture/Television Writing. (Formerly numbered Theater Arts 131.) Discussion, three hours. Prerequisite: consent of instructor. A course in the research and writing of documentary, technical, educational, industrial, and propaganda scripts. May be repeated twice for credit.

133. Script Analysis. (Formerly numbered Theater Arts 133.) Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Limited to motion picture/television majors. The considerations and practices in the evaluation of scripts written for motion picture or television production.

134A. Motion Picture/Television Writing. (Formerly numbered Theater Arts 134A.) Discussion, three hours. Prerequisite: consent of instructor. Not open for credit to students with credit for former course 134. Problems in motion picture/television writing.

134B. Fundamentals for Motion Picture/Television Writing (2 units). (Formerly numbered Theater Arts 134B.) Lecture, one hour. Corequisite for graduate students enrolled in course 134A. An examination of screenwriting fundamentals: structure, character and scene development, conflict, locale, theme, history of drama. Review of authors such as Aristotle, Egri, Bentley.

135. Advanced Motion Picture/Television Writing (8 units). (Formerly numbered Theater Arts 135.) Discussion, three hours. Prerequisites: course 134A and/or consent of instructor. A course in motion picture/television writing. Original motion picture/television material to be developed. May be repeated twice for credit. (F,W,Sp)

150. Basic Motion Picture Photography. (Formerly numbered Theater Arts 150.) Lecture, three hours; laboratory, four hours. Prerequisites: course 166, consent of instructor. Limited to motion picture/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 the lecture.

151. Design for Motion Pictures and Television. (Formerly numbered Theater Arts 151.) Lecture, three hours; laboratory, to be arranged. Prerequisite: consent of instructor. Limited to motion picture/television majors. The techniques of art direction. May be repeated twice for credit (if repeated, students are required to design and complete a short film).

152. Motion Picture/Television Sound Recording. (Formerly numbered Theater Arts 152.) Lecture, three hours; laboratory, to be arranged. Prerequisite: course 166. Limited to motion picture/television majors. Introduction to principles and practices of motion picture and television sound recording, including supervised exercises.

153C. Color Cinematography. (Formerly numbered Theater Arts 153C.) Lecture, three hours. Prerequisite: consent of instructor. History and theories of color photography, with emphasis on present-day methods in motion picture and television production. A comparative study of additive and subtractive systems as employed by Technicolor, Ansco, Kodak, and others.

154. Motion Picture Editing. (Formerly numbered Theater Arts 154.) Lecture, three hours; laboratory, to be arranged. Prerequisites: course 166, consent of instructor. Limited to motion picture/television majors. Introduction to the artistic and technical problems of film editing, with practical experience in the editing of image and synchronous sound.

164. Direction for Motion Pictures. (Formerly numbered Theater Arts 164.) Laboratory, to be arranged. Prerequisites: course 166, consent of instructor. A study of the problems faced by a motion picture director and various approaches to their solution. May be repeated twice for credit.

165. Direction for Television. (Formerly numbered Theater Arts 165.) Laboratory, six hours. Prerequisites: courses 134A, 166, 185, consent of instructor. Instruction and supervised exercises in television direction, with emphasis on the creative use of cameras, sound, composition, and communication with those in front of and behind the camera. May be repeated twice for credit.

166. Undergraduate Production I (8 units). (Formerly numbered Theater Arts 166.) Lecture/discussion, four hours; laboratory, eight hours; other, four hours. Prerequisite: consent of instructor. Limited to and required of motion picture/television majors. The completion of one or more short films, including their writing, production, and editing. May not be repeated.

176A-176B. Undergraduate Production II (8 units each). (Formerly numbered Theater Arts 176A-176B.) Discussion, three hours; laboratory, to be arranged. Prerequisites: course 166, consent of production faculty. Limited to motion picture/television majors. The completion of a motion picture, television, or video production, including its writing, production, and editing. May not be repeated.

177. Motion Picture/Television Acting Workshop (2 or 4 units). (Formerly numbered Theater Arts 177.) Laboratory, to be arranged. Prerequisite: consent of instructor. A workshop providing opportunities for students to rehearse, perform, and evaluate their scenes under the supervision and criticism of the instructor.

178. Technical Motion Picture/Television Laboratory (2 or 4 units). (Formerly numbered Theater Arts 178.) Laboratory, to be arranged. Prerequisite: consent of instructor. Limited to motion picture/television majors. A laboratory on various aspects of motion picture/television production. May be repeated for a maximum of 12 units, but only eight units may be applied toward the motion picture/television major.

180A-180B-180C. Workshop in Broadcast News and Documentary. (Formerly numbered Theater Arts 180A-180B-180C.) Discussion, three hours; laboratory, five hours. Prerequisite: consent of instructor. Instruction and supervised exercises in writing, reporting, editing, and producing radio and television news, public affairs, and documentary programs.

181A. Animation Design in Theater Arts. (Formerly numbered Theater Arts 181A.) Lecture, three hours; laboratory, three hours. Prerequisite: consent of instructor. History and use of speech, rhythm, and graphic design to form effective communication on film.

181B. Writing for Animation (4 or 8 units). (Formerly numbered Theater Arts 181B.) Lecture, six hours; laboratory, to be arranged. Prerequisites: course 181A, consent of instructor, a storyboard at the first class meeting. Research and practice in creative writing and planning for the animated film. May be repeated for a maximum of 16 units.

181C. Animation Workshop (4 or 8 units). (Formerly numbered Theater Arts 181C.) Lecture, six hours; laboratory, to be arranged. Prerequisites: course 181A, consent of instructor, a storyboard at the first class meeting. Organization and integration of the various creative arts used in animation to form a complete study of a selected topic. May be repeated for a maximum of 16 units.

182. Introduction to Video Production (8 units). (Formerly numbered Theater Arts 182.) Lecture, four hours; discussion, four hours; laboratory, to be arranged. Prerequisite: consent of instructor. Limited to motion picture/television majors. An introduction to the techniques, processes, and equipment used in video production, culminating in a short project each student originates.

185. Beginning Television and Video Production (8 units). (Formerly numbered Theater Arts 185.) Laboratory, 16 hours. Prerequisite: consent of instructor. Limited to and required of motion picture/television majors. Instruction and exercises in the basic techniques of television and video production, including class participation in campus broadcasts.

187A-187B-187C. Remote Television Broadcasting. (Formerly numbered Theater Arts 187A-187B-187C.) Laboratory, three hours (additional hours to be arranged). Prerequisites: course 185, consent of instructor. Instruction and supervised exercises in the planning and production of remote on-location television programs.

189. Overview of the Motion Picture Industry. (Formerly numbered Theater Arts 189.) 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 the influence of social and economic pressures that contributed to the changing financial, distribution, and exhibition practices.

192. Motion Picture, Television, and Theater Internship (2, 4, or 8 units). (Formerly numbered Theater Arts 192.) Field experience, eight, 16, or 24 hours; individual conferences, to be arranged. Prerequisite: consent of instructor. Limited to senior Department of Theater, Film, and Television majors. An internship at various studios or theaters accentuating the creative contribution, organization, and work of professionals in their various specialties. May be taken for a maximum of eight units.

193A. Film Curatorship. (Formerly numbered Theater Arts 193A.) Lecture, two hours; discussion, two hours; laboratory, four hours. Prerequisite: consent of instructor. Study of the principles and techniques of film curatorship and research, including but not limited to acquisitions, cataloging, storage, and retrieval systems. Special attention to the application of new technology, equipment, and program materials to film archival-library design for research and teaching.

193B. Television Curatorship. (Formerly numbered Theater Arts 193B.) Lecture, two hours; discussion, two hours; laboratory, four hours. Prerequisite: consent of instructor. Study of the principles and techniques of television curatorship and research, including but not limited to acquisitions, cataloging, storage, and retrieval systems. Special attention to the application of new technology, equipment, and program materials to television archival-library design for research and teaching.

195A-195B-195C. Independent Production of Feature Films and/or Television Programming. (Formerly numbered Theater Arts 195A-195B-195C.) Lecture, three hours. Prerequisites: course 189, consent of instructor. Survey of financial and business aspects involved in packaging, distributing, and exhibiting motion pictures and/or television programming from the various perspectives of prominent industry leaders. May be taken in any sequence for a maximum of eight units with different letter designations and different instructors.

196. Senior Colloquium. (Formerly numbered Theater Arts 196.) Lecture, three hours. Prerequisites: consent of instructor, senior standing. An advanced seminar investigating special topics in film and television studies (i.e., style, modes of adaptation, media and social effects, etc.).

199. Special Studies in Theater Arts (2 to 8 units). (Formerly numbered Theater Arts 199.) Hours to be arranged. 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 Theater Arts. (Formerly numbered Theater Arts 200.):

Section 1. Motion Pictures.

Section 2. Television/Radio.

203. Seminar in Film and the Other Arts. (Formerly numbered Theater Arts 203.) Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. Studies in the interrelationships between film and the fine arts, or performing arts, or literature, with emphasis on the ways these other arts have influenced film. May be repeated twice for credit.

206A. Seminar in European Motion Picture History. (Formerly numbered Theater Arts 206A.) Discussion, three hours (additional hours as required). 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 in American Motion Picture History. (Formerly numbered Theater Arts 206C.) Discussion, three hours (additional hours as required). Prerequisites: course 106A, graduate standing, consent of instructor. Study of central topics in American film history. May be repeated twice for credit.

208A. Seminar in Film Structure. (Formerly numbered Theater Arts 208A.) Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. An examination of various film conventions, both fictional and nonfictional, and of the role of structure in the motion picture.

208B. Seminar in Classical Film Theory. (Formerly numbered Theater Arts 208B.) Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. A study of the principal topics and lines of inquiry that characterize the theoretical writings of Arnheim, Eisenstein, Bazin, Mitry, etc.

208C. Seminar in Contemporary Film Theory. (Formerly numbered Theater Arts 208C.) Discussion, three hours (additional hours as required). Prerequisites: course 208B, graduate standing, consent of instructor. A study of the redefinition of the aims and methods of film theory through contemporary writings.

209A. Seminar in Documentary Film. (Formerly numbered Theater Arts 209A.) Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. The nonfictional film and its relation to contemporary culture.

209B. Seminar in Fictional Film. (Formerly numbered Theater Arts 209B.) Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. Film as fiction and its relation to contemporary culture. May be repeated once for credit.

M209C. Ethnographic Film. (Formerly numbered Theater Arts M209C.) (Same as Anthropology M247A.) Lecture/discussion, four hours; laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Discussion of the history, methods, and criteria for the use of film as a medium for the preservation and communication of human cultures. Filming assignments are given to increase the understanding of the theoretical and practical aspects of ethnographic filming. Consideration of the potential of both film and video for fieldwork. (F)

209D. Seminar in the Animated Film. (Formerly numbered Theater Arts 209D.) Discussion, three hours; laboratory, three hours. Prerequisite: consent of instructor. A critical study of the animated film: its historical development and its structure, style, and use.

210. Seminar in Contemporary Broadcast Media. (Formerly numbered Theater Arts 210.) 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 in Historiography. (Formerly numbered Theater Arts 211A.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Limited to motion picture/television M.A. candidates. Beginning examination of the function and methods of writing film and television history as seen in the works of key historians in the United States and Europe.

211B. Seminar in Historiography. (Formerly numbered Theater Arts 211B.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Limited to motion picture/television Ph.D. candidates. Examination of the 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 in Theory and Method. (Formerly numbered Theater Arts 215.) Discussion, three hours. Limited to motion picture/television Ph.D. candidates. An examination of the major modes of theoretical reflection that bear on film and television through study of central texts of such traditions as phenomenology, auteurism, semiology, psychoanalysis, sociology, etc.

219. Seminar in Film and Society. (Formerly numbered Theater Arts 219.) Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. Study of the ways film affects and is affected by social behavior, belief, and value systems; considered in relation to the role of media in society. May be repeated once for credit.

220. Seminar in Television and Society. (Formerly numbered Theater Arts 220.) Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. Study of the ways television forms affect and are affected by social behavior, belief, and value systems; study of the technological and economic aspects of the medium. May be repeated once for credit.

221. Seminar in Film Authors. (Formerly numbered Theater Arts 221.) Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. Intensive examination of the works of outstanding creators of films. May be repeated twice for credit.

222. Seminar in Film Genres. (Formerly numbered Theater Arts 222.) Discussion, three hours (additional hours as required). 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 in Visual Perception. (Formerly numbered Theater Arts 223.) Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. The aesthetic, psychological, and physiological principles of vision as they relate to the ways in which man "sees" film and television, with emphasis on the ways in which these are different from other visual experiences.

247. Production Planning in Motion Pictures/Television. (Formerly numbered Theater Arts 247.) 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). (Formerly numbered Theater Arts M265A-M265B.) (Same as Anthropology M267B-M267C.) Lecture, four hours; laboratory, to be arranged. Prerequisites: course M209C, graduate standing, consent of instructor. Further consideration of the methods and criteria for the use of film as a medium for the preservation and communication of human cultures. Production of films and videotapes on topics selected by students.

(W, M265A; Sp, M265B)

268. Seminar in the Short Film. (Formerly numbered Theater Arts 268.) Lecture, two hours; discussion, two hours. Prerequisites: graduate standing, consent of instructor. A study of the problems presented by the conceptualization of the form and structure of the short film, with classical and student examples.

270. Seminar in Film Criticism. (Formerly numbered Theater Arts 270.) Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. A 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 in Television Criticism. (Formerly numbered Theater Arts 271.) Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. An analysis of major forms of television production and the criticism it has elicited. May be repeated once for credit.

273. Seminar in Contemporary Film and Television Criticism. (Formerly numbered Theater Arts 273.) Discussion, three hours (additional hours as required). Limited to motion picture/television Ph.D. candidates. Study and practice of the analytic and critical response, with emphasis on contemporary film and television.

274. Seminar in Research Design. (Formerly numbered Theater Arts 274.) Discussion, three hours. Prerequisite: second-year standing in the motion picture/television Ph.D. program. An examination of the general principles that govern the formulation of major research projects and the preparation of a prospectus for the Ph.D. dissertation.

276. Seminar in Non-Western Films. (Formerly numbered Theater Arts 276.) Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. Study of the aesthetic and ideological impulses of selected films from Asia, Africa, and Latin America.

277. Seminar in Narrative Studies. (Formerly numbered Theater Arts 277.) Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. A study of the writings on the theory of narrative structure and their significance for analysis of film forms.

288. Seminar in Instructional Television. (Formerly numbered Theater Arts 288.) Discussion, three hours (additional hours as required). Prerequisites: graduate standing, consent of instructor. A historical survey and critical analysis of public, educational, and instructional television. A laboratory course requiring the preparation of a program plan.

289A-289B-289C. Current Business Practices in Motion Pictures/Television. (Formerly numbered Theater Arts 289A-289B-289C.) Prerequisites: course 247, graduate standing, consent of instructor. Examination of current status of financing-production-distribution agreements, union agreements, music, copyright, etc., necessary to an understanding of the motion picture/television industry. May be taken in any sequence.

291A-291B-291C. The Role of Management in the Entertainment Industry. (Formerly numbered Theater Arts 291A-291B-291C.) Prerequisites: course 247, graduate standing, consent of instructor. A study of the artistic, social, and economic criteria for decision making in the production and distribution of motion pictures and entertainment programs. May be taken in any sequence.

292A-292B-292C. Network Television Management and Decision Making. (Formerly numbered Theater Arts 292.) Lecture, two hours; discussion, two hours. Prerequisites: course 247, graduate standing, consent of instructor. A study of the business structure and the economic, social, and artistic criteria currently utilized by network television management. May be taken for a maximum of eight units.

293. Seminar in Film and Television Curatorship. (Formerly numbered Theater Arts 293.) 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 Theater Arts (2 to 4 units each). (Formerly numbered Theater Arts 298A-298B.) Lecture/discussion. Prerequisites: graduate standing, consent of instructor. Seminar study of problems in theater arts, organized on a topic basis. May be repeated once for credit.

375. Teaching Apprentice Practicum (1 to 4 units). (Formerly numbered Theater Arts 375.) Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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.

401A-401B-401C. Graduate Experimental Workshop (12 units each.) (Formerly numbered Theater Arts 401A-401B-401C.) Lecture/discussion/laboratory, 18 hours (additional hours as required). Prerequisite: consent of instructor. An experimental workshop integrating production in film, television, and video with screenwriting and critical studies in a comprehensive manner that combines a cultural context of media with its sensitive, imaginative expression and with an ethical responsibility.

423. Direction of Actors for Motion Pictures/Television. (Formerly numbered Theater Arts 423.) Lecture/laboratory. Prerequisites: first film project, consent of instructor. Exercise in analysis of script and character for the purpose of directing actors in motion picture and television productions. Emphasis on eliciting the best possible performance from the actor. May be repeated twice for credit.

434. Advanced Motion Picture/Television Writing (8 units). (Formerly numbered Theater Arts 434.) Discussion, three hours. Prerequisites: course 135, consent of instructor. Advanced problems in the writing of original motion picture/television material. May be repeated twice for credit.

435A. Writing Scenes for Production. (Formerly numbered Theater Arts 435A.) Discussion, three hours; laboratory, six hours. Prerequisites: graduate standing, consent of instructor. In coordination with direction and photography courses, students write, cast, rehearse, and produce scenes on videotape.

435B. Writing for the Short Film. (Formerly numbered Theater Arts 435B.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. The writing and revisions of a script, or scripts, for a short film (approximately 10 to 60 minutes in length).

436. Script to Film. (Formerly numbered Theater Arts 436.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Examination of all written material involved in creating a script of a major production and comparing these with the completed film.

437. Nontheatrical Writing for Motion Pictures/Television. (Formerly numbered Theater Arts 437.) Discussion, three hours. Prerequisite: consent of instructor. Advanced problems in the field of documentary and special feature programs, with emphasis on research and preproduction.

450A. Cinematography. (Formerly numbered Theater Arts 450A.) Lecture, two hours; discussion, one hour. Prerequisites: graduate standing, consent of instructor. Not open for credit to students with credit for course 450A prior to Fall Quarter 1983. Advanced study of the principles of cinematography, with emphasis on exposure, lighting, and selection of film, camera, and lens.

450B. Lighting for Motion Pictures and Television. (Formerly numbered Theater Arts 450B.) Lecture, three hours; discussion, one hour; laboratory, four hours. Prerequisites: graduate standing, consent of instructor. Not open for credit to students with credit for course 450A prior to Fall Quarter 1983. Supervised exercises in studio and location film photography to develop skill in lighting and management of the photographic process as applied to motion pictures and films for television. May be repeated twice for credit.

450C. Advanced Motion Picture/Television Directing and Photography (8 units). (Formerly numbered Theater Arts 450C.) Lecture, three hours; discussion, two hours; laboratory, eight hours. Prerequisites: graduate standing, consent of instructor. Not open for credit to students with credit for course 450B prior to Fall Quarter 1983. Supervised filming of a short dramatic project on locations that explore the complexity of the process, emphasizing the balance essential to both directing and photographing in its varied technical and production aspects.

451. Advanced Design for Motion Pictures (2 to 4 units). (Formerly numbered Theater Arts 451.) Laboratory, to be arranged. Prerequisite: consent of instructor. 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. Motion Picture/Television Sound Recording. (Formerly numbered Theater Arts 452A.) Lecture, three hours; laboratory, four hours. Prerequisites: graduate standing, consent of instructor. Principles and practices of motion picture and television sound recording, including supervised exercises.

452B. Music Recording Workshop. (Formerly numbered Theater Arts 452B.) Lecture, four hours; laboratory, eight hours. Prerequisites: course 452A and/or consent of instructor. Supervised exercises in studio music recording techniques, with emphasis on special requirements for motion pictures and television.

452C. Motion Picture/Television Sound Rerecording. (Formerly numbered Theater Arts 452C.) Laboratory, eight hours. Prerequisites: course 152 or 452A, graduate standing, consent of instructor. Techniques of preparation and execution of rerecording using multitrack pickup recording technology, including supervised operational experience.

454A. Motion Picture Editing. (Formerly numbered Theater Arts 454A.) Lecture, three hours; laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Limited to motion picture/television majors. A study of the role of editing the fictional and nonfictional production, with emphasis on the techniques and procedures used in manipulation of the sound track in sync dialogue cutting, post syncing, and music and sound effects cutting, including offscreen narration, dialogue substitution, and playback tracks.

454B. Motion Picture Editing. (Formerly numbered Theater Arts 454B.) Lecture, three hours; laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Limited to motion picture/television majors. A study of the role of editing the fictional and nonfictional production, with emphasis on the finishing stages, including title preparation. The use of optical effects and blowups, preparation for the supervision of the mix, and the cutting of originals for single strand and A&B printing.

464A-464B. Motion Picture Direction (4 or 8 units each). (Formerly numbered Theater Arts 464A-464B.) Hours to be arranged. Prerequisite: consent of instructor. Limited to motion picture/television graduate students. Special problems in the direction of fictional and documentary motion pictures.

466A-466B. Television Direction (4 or 8 units each). (Formerly numbered Theater Arts 466A-466B.) Lecture, two hours; laboratory, six hours. Prerequisites: graduate standing, consent of instructor. Special problems in the direction of dramatic and documentary television programs.

475. Film I (8 units). (Formerly numbered Theater Arts 475.) Discussion, three hours; laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. A study of the basic techniques of film production, including the preproduction planning and production of a short film.

476. Video I (8 units). (Formerly numbered Theater Arts 476.) Discussion, three hours; laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. A study of the basic techniques of television and video production, including the completion of one or more projects.

477. Film II (8 units). (Formerly numbered Theater Arts 477.) Discussion, three hours; laboratory, to be arranged. Prerequisites: course 166 or 475, graduate standing, consent of instructor. Group experience in film production with each member rotating on crew work in the production of individual or collective projects.

478. Video II (8 units). (Formerly numbered Theater Arts 478.) Discussion, three hours; laboratory, to be arranged. Prerequisites: course 185 or 476, graduate standing, consent of instructor. Group experience in video production with each member rotating on crew work in the production of individual or collective projects.

479A-479B-479C. Film III (4 or 8 units each). (Formerly numbered Theater Arts 479A-479B-479C.) Laboratory, to be arranged. Prerequisites: course 475 or 166, graduate standing, consent of instructor. Course 178 may be taken concurrently. The completion of a film (no longer than 10 minutes), including its writing, design, production, and editing.

480A-480B-480C. Workshop in Broadcast Journalism. (Formerly numbered Theater Arts 480A-480B-480C.) Laboratory, eight hours. Prerequisites: graduate standing, consent of instructor. The practice of reporting, writing, editing, and producing news, public affairs, and documentary programs for broadcast.

482A-482B. Advanced Animation Workshop (4 or 8 units each). (Formerly numbered Theater Arts 482A-482B.) 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 the production of a complete animated film.

483. Video Editing (4 or 8 units). (Formerly numbered Theater Arts 483.) Discussion, four hours; laboratory, to be arranged. Prerequisites: course 476, graduate standing, consent of instructor. Individual instruction in electronic editing.

485A-485B-485C. Video III (4 or 8 units each). (Formerly numbered Theater Arts 485A-485B-485C.) Laboratory, 16 hours. Prerequisites: course 478, graduate standing, consent of instructor. Creation, preparation, and production each quarter of one advanced television program (no longer than 10 minutes).

488A-488B-488C. Educational Television Workshop. (Formerly numbered Theater Arts 488A-488B-488C.) Laboratory, eight hours. Prerequisite: consent of instructor. Instruction and supervised exercises in directing and producing television programs for educational purposes.

489A. Computer Animation in Film and Video (8 units). (Formerly numbered Theater Arts 489A.) Lecture, three hours; laboratory, eight hours; other, to be arranged. Prerequisites: courses 181A, 181C, a complete animated film, consent of instructor. Instruction in and supervised production of computer animation. May be repeated once.

495A. Problems in the Teaching of Theater Arts. (Formerly numbered Theater Arts 495A.) Lecture/laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Study of and practice in the teaching of theater arts at the college and university level.

495B. Problems in the Teaching of Theater Arts (2 or 4 units.) (Formerly numbered Theater Arts 495B.) Laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Not open for credit to students with credit for former courses 495C-495D. 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. The Practice of Teaching Theater Arts (2 units.) (Formerly numbered Theater Arts 496.) Discussion. Required once of all teaching assistants or associates in the department. Orientation and preparation of graduate students who have the responsibility to assist in the teaching of undergraduate courses in the department; discussion of problems common to the teaching experience. May not be applied toward the M.A., M.F.A., or Ph.D. May be repeated. S/U grading.

498. Professional Internship in Theater Arts (4, 8, or 12 units). (Formerly numbered Theater Arts 498.) 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. An internship at various film, television, or theater facilities accentuating the creative contribution, the organization, and the work of professionals in their various specialties. Given only when projects can be scheduled.

501. Cooperative Program (2 to 8 units). (Formerly numbered Theater Arts 501.) Prerequisite: consent of graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. S/U grading.

596A. Directed Individual Studies: Research (2 to 12 units). (Formerly numbered Theater Arts 596A.) Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

596B. Directed Individual Studies: Writing (2 to 12 units). (Formerly numbered Theater Arts 596B.) Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

596C. Directed Individual Studies: Directing (2 to 12 units). (Formerly numbered Theater Arts 596C.) Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

596D. Directed Individual Studies: Design (2 to 12 units). (Formerly numbered Theater Arts 596D.) Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

596E. Directed Individual Studies: Acting (2 to 12 units). (Formerly numbered Theater Arts 596E.) Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

596F. Directed Individual Studies: Production (2 to 12 units). (Formerly numbered Theater Arts 596F.) 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.) (Formerly numbered Theater Arts 597.) May be repeated for a maximum of 12 units.

598. M.A. Thesis in Theater Arts (2 to 8 units). (Formerly numbered Theater Arts 598.) 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). (Formerly numbered Theater Arts 599.) Prerequisite: advancement to Ph.D. candidacy. Research and writing for Ph.D. dissertation. May be repeated for a maximum of 12 units.

Theater

Lower Division Courses

5A. History and Drama of the Theater from Primitive Times to 1640. (Formerly numbered Theater Arts 5A.) Lecture, three hours; discussion, one hour. Required of theater majors. The history of the influence of different cultures, traditions, and technologies on the development of theater as a social institution.

5B. History and Drama of the Theater from 1640 to 1900. (Formerly numbered Theater Arts 5B.) Lecture, three hours; discussion, one hour. Required of theater majors. The history of the influence of different cultures, traditions, and technologies on the development of theater as a social institution.

5C. History and Drama of the Theater from 1900 to the Present. (Formerly numbered Theater Arts 5C.) Lecture, three hours; discussion, one hour. Required of theater majors. The history of the influence of different cultures, traditions, and technologies on the development of theater as a social institution.

10. Fundamentals of Theater Production. (Formerly numbered Theater Arts 10.) Lecture, three hours; laboratory, three hours. Required of theater majors in the first quarter in residence. A basic study of the relationship of acting, stage management, scenery, lighting, costume, and sound to the production of the play. Emphasis on the planning, procedures, materials, equipment, and disciplines of theater production.

20. Acting Fundamentals. (Formerly numbered Theater Arts 20.) Lecture/laboratory. Required of theater majors. An introduction to the interpretation of drama through the art of the actor. Development of individual insights, skills, and disciplines in the presentation of dramatic material to an audience.

Upper Division Courses

100. The Teaching of Theater. (Formerly numbered Theater Arts 100.) Lecture, three hours. Prerequisites: courses 160 or 161A, and 162A, or consent of instructor. Highly recommended for students pursuing a secondary teaching credential. Study of current methods and problems of production as related to the secondary level.

102A. Selected Topics on the History of the European Theater. (Formerly numbered Theater Arts 102A.) Lecture, three hours. Prerequisites: course 5A or equivalent, consent of instructor. An investigation in depth of a selected area of study in theater history from the Greeks through the Renaissance. May be repeated twice for credit.

102B. Selected Topics on the History of the European Theater. (Formerly numbered Theater Arts 102B.) Lecture, three hours. Prerequisites: course 5B or equivalent and/or consent of instructor. An investigation in depth of a selected area of study in theater history from the baroque to the present. May be repeated twice for credit.

102D. History of the European Theater. (Formerly numbered Theater Arts 102D.) Lecture, three hours. Prerequisite: consent of instructor. Not open for credit to students with credit for more than one course from the 5A, 5B, 5C series. A survey of the development of the theater from the Greeks to the present.

102E. Theater of the Non-European World. (Formerly numbered Theater Arts 102E.) Lecture, three hours; discussion, one hour. A survey of theater forms of the non-European world in which primary attention is concentrated on an examination and analysis of the 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.

103A. Black People's Theater in America: Slavery to Mid-1800s. (Formerly numbered Theater Arts 103A.) Lecture, three hours. Prerequisites: upper division standing, consent of instructor. Not open for credit to students with credit for course 103A prior to Spring Quarter 1986. An exploration of extant materials on the history and literature of the theater as developed and performed by black artists in America from slavery to the mid-1800s. (F)

103B. Black People's Theater in America: Minstrel Stage to the Rise of the American Musical. (Formerly numbered Theater Arts 103B.) Lecture, three hours. Prerequisites: upper division standing, consent of instructor. Not open for credit to students with credit for course 103B prior to Spring Quarter 1986. An exploration of extant materials on the history and literature of the theater as developed and performed by black artists in America from the minstrel stage to the rise of the American musical. (W)

M103C. The Origins and Evolution of Chicano Theater. (Formerly numbered Theater Arts M103C.) (Same as Chicano Studies M103C.) Lecture, three hours. Prerequisite: upper division standing. An exploration of the development of Chicano theater from its beginnings in the legends and rituals of ancient Mexico to the work of Luis Valdez (late 1960s).
Mr. Zamora

M103D. Contemporary Chicano Theater. (Formerly numbered Theater Arts M103D.) (Same as Chicano Studies M103D.) Lecture, three hours. Prerequisite: upper division standing. A study of recent trends in Chicano theater as reflected in the works of contemporary Chicano dramatists and theater artists.
Mr. Zamora

103E. Black People's Theater in America: The Depression to the Present. Lecture, three hours. Prerequisites: upper division standing, consent of instructor. An exploration of extant materials on the history and literature of the theater as developed and performed by black artists in America from the Depression to the present. (Sp)

103F. Native American Theater. (Formerly numbered Theater Arts 198N.) Prerequisite: consent of instructor. A study of American Indian theater as an evolving art form. (Sp)

104D. History of the American Theater. (Formerly numbered Theater Arts 104D.) Lecture, three hours. The history of the American theater from the Revolutionary War to the Civil War.

104E. History of the American Theater. (Formerly numbered Theater Arts 104E.) Lecture, three hours. The history of the American theater from the Civil War to WWI.

104F. History of the American Theater. (Formerly numbered Theater Arts 104F.) Lecture, three hours. The history of the American theater from WWI to the present.

105. Main Currents in Theater. (Formerly numbered Theater Arts 105.) Lecture, three hours. Critical examination of the leading theories of theater from 1887 to the present. Study and discussion of modern styles of production.

C117. The Puppet Theater (2 units). (Formerly numbered Theater Arts C117.) Lecture/laboratory, four hours. Prerequisite: consent of instructor. Not open for credit to students with credit for former course 117. Study of the history and practice of the art of puppetry. An examination of the materials and methods of construction. Staging of puppet productions as laboratory practice. May be repeated twice for credit. Concurrently scheduled with course C217A.

118A. Creative Dramatics. (Formerly numbered Theater Arts 118A.) Lecture/laboratory. Studies of the principles and procedures of the improvisational approach to drama as done with children from nursery school to junior high.

118B. Advanced Creative Dramatics (2 units). (Formerly numbered Theater Arts 118B.) Discussion, one hour; laboratory, two hours. Prerequisite: course 118A or consent of instructor. Practical application of the methods and principles introduced in course 118A. May be repeated twice for credit.

119A. Theater for the Child Audience: Theory and Criticism. (Formerly numbered Theater Arts 119A.) Lecture/laboratory. Not open for credit to students with credit for former course 119. Principles of production and performance for the child audience.

119B. Theater for the Child Audience: Performance. (Formerly numbered Theater Arts 119B.) Lecture, two hours; laboratory, four hours. Prerequisites: audition and consent of instructor prior to first class meeting. Designed to provide an 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 the ensemble work, rehearsal, pretesting, and evaluation of an original production for possible presentation outside the classroom.

121. Acting Workshop (2 units). (Formerly numbered Theater Arts 121.) Laboratory, to be arranged. Prerequisites: course 20, consent of instructor. Courses 160, 161A, 161B, and 161C may be taken concurrently. A workshop which provides students with an opportunity to rehearse, perform, and criticize scenes. May be repeated once for credit.

122. Makeup for the Stage (2 units). (Formerly numbered Theater Arts 122.) Prerequisite: consent of instructor. The 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. (Formerly numbered Theater Arts 123.) Lecture/laboratory. Prerequisites: course 20, consent of instructor. Study and practice of the art of acting through the perfecting of techniques and application of those techniques to acting problems.

124A. Voice for the Stage. (Formerly numbered Theater Arts 124A.) Lecture/laboratory. Prerequisites: course 20, consent of instructor. Not open for credit to students with credit for former course 124. Development of voice techniques for the stage. Includes work in relaxation, limbering, breathing, articulators, and resonators.

124B. Speech for the Stage. (Formerly numbered Theater Arts 124B.) Lecture, four hours; laboratory, two hours. Prerequisites: courses 20, 123, 124A (with demonstration of high skills level), 125A, consent of instructor. Open for credit to students with credit for former course 124. Designed to acquaint students with the international phonetic alphabet and its uses and to exercise students' skills in pronunciation, enunciation, and the development of diction versatility.

125A. Movement for the Actor. (Formerly numbered Theater Arts 125A.) Lecture/laboratory. Prerequisites: course 20, consent of instructor. Physical awareness for the actor, concentrating on warming up the body, relaxation, control, stunts, and gymnastics.

125B. Advanced Movement for the Actor. (Formerly numbered Theater Arts 125B.) Lecture/laboratory. Prerequisites: course 125A, consent of instructor. An advanced and contemporary approach to classical and modern movement for the stage actor.

130A. Fundamentals of Playwriting I. (Formerly numbered Theater Arts 130A.) Lecture, three hours. Prerequisite: consent of instructor. Required of theater majors. Designed to stimulate students' critical and creative faculties through the preparation of original material for the theater. Guidance in the completion of a one-act play.

130B. Fundamentals of Playwriting II. (Formerly numbered Theater Arts 130B.) 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 the critical and creating aspects of the short and full-length play and guidance in the completion of the one-act and full-length play. May be repeated twice for credit.

130C. Writing for the American Musical Theater. (Formerly numbered Theater Arts 130C.) Lecture/laboratory, three hours. Prerequisite: consent of instructor. Study of the 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. (Formerly numbered Theater Arts 132.) Lecture, three hours. Prerequisites: course 130A, consent of instructor. Principles and practices in the evaluation of manuscripts for theater. May be repeated once for credit.

136. Advanced Acting for the Stage. (Formerly numbered Theater Arts 136.) Lecture/laboratory. Prerequisites: courses 123, 124A, 125A, consent of instructor. Study and practice of the art of acting through a progression to more advanced acting problems. May be repeated twice for credit. Consecutive enrollment with the same instructor is not permitted. The total units for courses 136, 137A, 137B, and 137C may not exceed 12 units.

137A-137B-137C. Continuum Study in Acting for the Stage. (Formerly numbered Theater Arts 137A-137B-137C.) Lecture/laboratory. Prerequisites: courses 123, 124A, 125A, consent of instructor. The technique of characterization and performance in advanced and complex acting styles. The total units for courses 136, 137A, 137B, and 137C may not exceed 12 units.

138. Special Problems in Performance Techniques. (Formerly numbered Theater Arts 138.) Lecture/laboratory. Prerequisites: courses 123, 124A, 125A, consent of instructor. Study of complex problems in voice, movement, and acting. May be repeated twice for credit.

140A. Scenic Techniques for the Stage. (Formerly numbered Theater Arts 140A.) Lecture, three hours; laboratory, six hours. Prerequisites: course 10, consent of instructor. Required of theater majors. An intensive study of scenic materials, construction techniques, production organization, and the rigging of scenery. Courses 140A, 141A, and 142A may be taken in any sequence, but not concurrently.

140B. Advanced Scenery for the Stage. (Formerly numbered Theater Arts 140B.) Lecture/laboratory. Prerequisite: course 140A. Advanced study of technical problems in staging theater productions, including design analysis and planning related to rigging, shifting, and construction techniques.

141A. Lighting Techniques for the Stage. (Formerly numbered Theater Arts 141A.) Lecture, three hours; laboratory, six hours. Prerequisites: course 10, consent of instructor. Required of theater majors. An intensive study of theater lighting, with emphasis on the relationship of lighting instruments and control equipment to lighting design. Courses 141A, 140A, and 142A may be taken in any sequence, but not concurrently.

141B. Advanced Lighting for the Stage. (Formerly numbered Theater Arts 141B.) Lecture/laboratory. Prerequisite: course 141A. The detailed study of stage lighting as an art, with emphasis on design concepts. The interpretation of a script or score through the control of light and color in relation to actor and audience.

142A. Theater Costuming Techniques. (Formerly numbered Theater Arts 142A.) Lecture, three hours; laboratory, six hours. Prerequisites: course 10, consent of instructor. Required of theater majors. The study of costume analysis and the interpretation of theatrical costume design through the use of patterns, fabrics, and related costume materials. Courses 142A, 140A, and 141A may be taken in any sequence, but not concurrently.

142B. Advanced Costuming for the Stage. (Formerly numbered Theater Arts 142B.) Lecture, three hours; laboratory, four hours. Prerequisites: course 142A, consent of instructor. Special problems in the procuring, designing, construction, and management of costumes used in theatrical productions.

143. Scenic Design for the Theater. (Formerly numbered Theater Arts 143.) Prerequisites: course 10, consent of instructor. Required of theater majors. Basic principles of design as applied to the interpretation and presentation of the visual aspects of dramaturgy. Study of styles, techniques, and methods of design for the theater arts. The translation of ideas into visual forms.

144A. Theater Sound Techniques (2 units). (Formerly numbered Theater Arts 144A.) Lecture, two hours; laboratory, two hours. Prerequisite: course 10 or an approved equivalent. A study of the equipment and techniques utilized in the recording and reproduction of sound for the theater.

144B. Advanced Theater Sound. (Formerly numbered Theater Arts 144B.) Lecture, three hours; laboratory, four hours. Prerequisite: course 144A or consent of instructor. A detailed study of theater sound, with emphasis on the composition and execution of theater sound tracks, recording techniques, and acoustic reinforcement.

145. Costume Design for the Theater. (Formerly numbered Theater Arts 145.) Lecture/laboratory. Prerequisite: consent of instructor. Design of costumes for theatrical presentations. The study of the use of silhouette, fabrics, color, and decoration as related to theatrical characterizations. May be repeated once for credit.

C146. Scene Painting Techniques (2 units). (Formerly numbered Theater Arts C146.) Lecture/laboratory, three hours. Prerequisite: consent of instructor. Not open for credit to students with credit for former course 146. The study of scenic painting techniques and materials and their relation to the realization of color design and elevations. May be repeated once for credit. Concurrently scheduled with course C446.

148. Special Courses in Design and Technical Theater. (Formerly numbered Theater Arts 148.) Lecture, three hours. Prerequisite: consent of instructor. Group study of selected subjects in design and technical theater. May be repeated twice for credit.

149A. Basic Drafting Techniques for the Stage (2 units). (Formerly numbered Theater Arts 149A.) Lecture/laboratory, four hours. Prerequisite: course 10 or consent of instructor. Studies of the basic skills and techniques of drafting for the stage through the execution of floor plans and elevation drawings.

149B. Advanced Drafting for Theater Arts. (Formerly numbered Theater Arts 149B.) Lecture/laboratory. Prerequisite: course 149A or consent of instructor. An advanced course in the technical sketching and drafting of working drawings essential in the development of the design of sets and properties for theater, television, and motion picture productions.

160. Fundamentals of Play Direction. (Formerly numbered Theater Arts 160.) Lecture/laboratory. Prerequisite: consent of instructor. Required of theater majors. Course 161A may be substituted for this requirement (if substituted, an additional two upper division units are required). Course 121 may be taken concurrently. Basic theories of play direction and their application through the preparation of scenes under rehearsal conditions.

161A. Continuum in Directing for the Stage (2 units). (Formerly numbered Theater Arts 161A.) Lecture/laboratory, six hours. Prerequisite: consent of instructor. Course 121 may be taken concurrently. The intensive development of primary directing skills and process, including text analysis and the exploration of craft fundamentals as a basis for director-actor communication and effective staging. Students work in proscenium configuration with scenes drawn from plays of American realism. May be applied toward the major requirement in directing.

161B. Continuum in Directing for the Stage. (Formerly numbered Theater Arts 161B.) Lecture/laboratory, six hours. Prerequisites: course 160 or 161A, consent of instructor. Course 121 may be taken concurrently. The further development of craft elements of directorial method, with additional emphasis on the psychological aspects of director-actor communication. Students work in arena and proscenium configurations with scenes drawn from the period of early realism through expressionism.

161C. Continuum in Directing for the Stage (6 units). (Formerly numbered Theater Arts 161C.) Lecture/laboratory. Prerequisites: course 161B, consent of instructor. Course 121 may be taken concurrently. Working in three-quarter and environmental configurations, student directors explore problems of style in production by staging scenes drawn from period plays (Greek through Romantic eras) and from contemporary, nonrealistic plays.

162A. Intermediate Play Direction. (Formerly numbered Theater Arts 162A.) Lecture/discussion, two hours; laboratory, eight hours. Prerequisites: course 160 or 161A, consent of instructor. The application of stage direction techniques to the one-act play. Each student directs a one-act play to be performed under rehearsal conditions. Material drawn from published sources.

162B. Advanced Play Direction. (Formerly numbered Theater Arts 162B.) Lecture, four hours; laboratory, six hours. Prerequisites: course 160 or 161A, consent of instructor. Special problems in the direction of original one-act plays under production conditions. May be repeated once for credit with consent of instructor.

170. Theater Laboratory. (Formerly numbered Theater Arts 170.) Lecture, four hours; laboratory, eight hours. Prerequisites: courses 140A, 141A, 142A, 143, consent of instructor. Required of theater majors. Laboratory in theater production under supervision. The translation of ideas and concepts into the dramatic form.

171A. Advanced Theater Laboratory (2 or 4 units). (Formerly numbered Theater Arts 171A.) Hours to be arranged. Prerequisite: consent of instructor. Creative participation as an actor or stage manager in the public presentation of departmental productions. May be taken for a maximum of four units.

171B. Advanced Theater Laboratory (2 or 4 units). (Formerly numbered Theater Arts 171B.) Hours to be arranged. Prerequisite: consent of instructor. Creative participation in the realization of production elements related to the public presentation of departmental productions. May be taken for a maximum of four units.

C172. Technical Theater Laboratory (2 units). (Formerly numbered Theater Arts C172.) Hours to be arranged. Prerequisite: consent of instructor. Required of theater majors. A 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.

174. Techniques of Stage Managing (2 units). (Formerly numbered Theater Arts 174.) The professional duties of the stage manager. The problems of unions, professional auditions, organization, scheduling, out-of-town openings, Broadway openings, and the responsibilities of a lengthy run.

C190A. The Role of the Producer in the Professional Theater (2 units). (Formerly numbered Theater Arts C190A.) Not open for credit to students with credit for former course 190A. A study of the structure governing the economic and artistic decision-making processes in the professional theater of America. Concurrently scheduled with course C294A.

C190B. The Role of Management in the Educational and Community Theater (2 units). (Formerly numbered Theater Arts C190B.) Not open for credit to students with credit for former course 190B. A study of the artistic, social, and economic criteria in the administration of educational and community theater. Concurrently scheduled with course C294B.

191. The Touring Company (2 to 12 units). (Formerly numbered Theater Arts 191.) Lecture, 20 hours; laboratory, 22 hours. Prerequisite: consent of instructor. Rehearsal and technical preparation of a theatrical work for touring and the performance of that work on tour.

199. Special Studies in Theater Arts (2 to 8 units). (Formerly numbered Theater Arts 199.) 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.

200. Bibliography and Methods of Research in Theater Arts. (Formerly numbered Theater Arts 200.)

202A. Seminar in Western Classical Theater. (Formerly numbered Theater Arts 202A.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. An examination of theatrical production and dramatic form in the Greek and Roman periods. May be repeated twice for credit.

202B. Seminar in Medieval Theater. (Formerly numbered Theater Arts 202B.) 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 in Renaissance and Baroque Theater. (Formerly numbered Theater Arts 202C.) 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 in Bourgeois and Romantic Theater. (Formerly numbered Theater Arts 202D.) 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 on the Modern Consciousness in Theater. (Formerly numbered Theater Arts 202E.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Study of the prototypes of modern experience as encountered in the work of Ibsen and Strindberg. May be repeated twice for credit.

202F. Seminar in Modern Realism. (Formerly numbered Theater Arts 202F.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected studies of the theater's response to science and technology, politics, and revolution. May be repeated twice for credit.

202G. Seminar in Modern Theatricalism. (Formerly numbered Theater Arts 202G.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected studies in symbolism and the avant-garde theater. Exploration of the dream experience and the private psyche, the religious experience, and the revitalization of myth and ritual. May be repeated twice for credit.

202M. Seminar in American Theater. (Formerly numbered Theater Arts 202M.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected studies in the development of theatrical production and dramatic writing in the American theater. May be repeated twice for credit.

202N. Seminar in Theater Architecture and Scenic Design. (Formerly numbered Theater Arts 202N.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected studies of the playhouse and scenic environment, relating historic and contemporary concepts. May be repeated twice for credit.

202P. Seminar in Traditions of African Theater. (Formerly numbered Theater Arts 202P.) 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 an examination of character, structure, performance modes, and archetypes. May be repeated twice for credit.

202R. Seminar in East Asian Theater. (Formerly numbered Theater Arts 202R.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected topics in the theater forms of East Asia, including dramatic literature, costume, theater spaces, and critical writings. May be repeated twice for credit.

202S. Seminar in South Asian Theater. (Formerly numbered Theater Arts 202S.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected topics in the theater forms of South Asia, including dramatic literature, costume, theater spaces, and critical writings. May be repeated twice for credit.

202T. Seminar in Southeast Asian Theater. (Formerly numbered Theater Arts 202T.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Selected topics in the theater forms of Southeast Asia, including dramatic literature, costume, theater spaces, and critical writings. May be repeated twice for credit.

205A. The Background of Theatrical Art. (Formerly numbered Theater Arts 205A.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. An analysis of major plays, commentaries, and historical materials from the classical and medieval periods.

205B. The Background of Theatrical Art. (Formerly numbered Theater Arts 205B.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. An analysis of major plays, commentaries, and historical materials from the Renaissance, baroque, and rococo periods.

205C. The Background of Theatrical Art. (Formerly numbered Theater Arts 205C.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. An analysis of major plays, commentaries, and historical materials from the Romantic, naturalistic, and symbolist periods.

216A. Critical and Historical Methods. (Formerly numbered Theater Arts 216A.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Studies in theater historiography and sociological criticism.

216B. Critical Methods. (Formerly numbered Theater Arts 216B.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Studies in critical theories of theatrical form and structure.

216C. Critical Methods. (Formerly numbered Theater Arts 216C.) Discussion, three hours. Prerequisites: graduate standing, consent of instructor. Studies in contemporary modes of psychoanalytic and archetypal criticism for the theater.

C217A. Research and Practice in Puppet Theater (2 units). (Formerly numbered Theater Arts C217A.) Laboratory, four hours. Prerequisites: graduate standing, consent of instructor. Not open for credit to students with credit for former course 117. Study of the history and practice of the art of puppetry. An examination of the materials and methods of construction. May be repeated twice for credit. Concurrently scheduled with course C117. Graduate students are required to present a "one-person" show of no less than 15 minutes, with puppets constructed and developed for the particular show (Fall Quarter, hand puppets; Winter Quarter, rod puppets; Spring Quarter, shadow puppets). Students develop the show concept with the advice of the instructor.

M217B. Seminar in the Puppet Theater. (Formerly numbered Theater Arts M217B.) (Same as Folklore M219.) Lecture, three hours. Prerequisite: consent of instructor. Studies in the puppet theaters of the world: techniques, literature, aesthetics.

230A-230B-230C. Advanced Playwriting. (Formerly numbered Theater Arts 230A-230B-230C.) Lecture, three hours. Prerequisites: course 130A, graduate standing, consent of instructor. Guided completion of a full-length play, or study and preparation for the writing of a thesis play.

232. Manuscript Analysis. (Formerly numbered Theater Arts 232.) 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.

240. The Contemporary Playhouse. (Formerly numbered Theater Arts 240.) Discussion. Prerequisites: graduate standing, consent of instructor. Advanced study of the concept, form, and function of the contemporary playhouse and its equipment.

241. Research in Technical Theater. (Formerly numbered Theater Arts 241.) Prerequisites: graduate standing, consent of instructor. Research in technical processes and equipment in theater.

243A-243B-243C. Advanced Problems in Design for the Theater. (Formerly numbered Theater Arts 243A-243B-243C.) Prerequisites: graduate standing, consent of instructor. Advanced study and practice in the design of stage productions. Determination of approach and style in scenic design.

244A. Advanced Theater Laboratory (2 or 4 units). (Formerly numbered Theater Arts 244A.) Laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Creative participation as an assistant director, stage manager, or performer in the public presentation of departmental productions. May be taken for a maximum of four units.

244B. Advanced Theater Laboratory (2 or 4 units). (Formerly numbered Theater Arts 244B.) Laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Creative participation in the realization of production elements related to the public presentation of departmental productions. May be taken for a maximum of four units.

245A-245B. Production Planning in Theater. (Formerly numbered Theater Arts 245A-245B.) Lecture, two hours; laboratory, two hours. Prerequisites: graduate standing, consent of instructor. Development of planning procedures through the execution of a complete plan for producing a multiscene production. Courses must be taken in sequence.

C272. Production and Performance Laboratory (2 units). (Formerly numbered Theater Arts C272.) 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 the first three quarters in residence. May be repeated twice for credit. Concurrently scheduled with courses C172 and C472.

290A. The Role of Management in Artistic Decision Making in the Theater. (Formerly numbered Theater Arts 290A.) Prerequisite: consent of instructor. A descriptive study of the criteria for decision making in artistic institutions, including the role of the institution in society, the economic environment of the arts, and the artistic value systems of arts organizations.

290B. Programming and Planning Policies in the Theater. (Formerly numbered Theater Arts 290B.) Prerequisite: consent of instructor. An analysis of the social, artistic, and economic roles of the arts as reflected in programming policy. An examination of the social goals pursued in establishing relationships between the arts and their environment.

C294A. Artistic Control of Theatrical Production by the Professional Producer (2 units). (Formerly numbered Theater Arts C294A.) Prerequisites: graduate standing, consent of instructor. Not open for credit to students with credit for former course 190A. A study of the structure governing the economic and artistic decision-making processes in the professional theater of America and the historical development of the involvement of the producer in the artistic process. Concurrently scheduled with course C190A. Additional research and writing required of graduate students.

C294B. The Organization and Operation of Community Theater (2 units). (Formerly numbered Theater Arts C294B.) Prerequisites: graduate standing, consent of instructor. Not open for credit to students with credit for former course 190B. A study of the artistic, social, and economic criteria in the administration of educational and community theater, with research in the history of current practices in operations, administration, and organization. Concurrently scheduled with course C190B.

417. Production Project for the Puppet Theater (8 units). (Formerly numbered Theater Arts 417.) Laboratory, 30 hours; consultation, five hours. Prerequisite: consent of instructor. Limited to M.F.A. candidates. The design, construction, and performance of a full-length production with puppets as the culminating exercise for candidates for the M.F.A. degree in puppet theater. Students are expected to present the full argument for the design style and techniques used in the construction of the puppets, the rationale for the use of puppets for the particular project presented, and a final justification and analysis of the completed work.

420A. Advanced Techniques in Acting. (Formerly numbered Theater Arts 420A.) Lecture/laboratory, six hours. Prerequisite: consent of instructor. Limited to M.F.A. acting candidates in theater. Exercises in sense memory, personalization, and objectives to help students respond truthfully to real and imaginary stimuli by developing concentration, awareness, imagination, and spontaneity.

420B. Advanced Techniques in Acting. (Formerly numbered Theater Arts 420B.) Lecture/laboratory, six hours. Prerequisite: consent of instructor. Limited to M.F.A. acting candidates in theater. Extended work in improvisations and exercises in order to apply these techniques to a role. Beginning with monologues, the work progresses to two-person scenes. Through these efforts students begin to personalize the character's emotional needs and drives.

420C. Advanced Techniques in Acting. (Formerly numbered Theater Arts 420C.) Lecture/laboratory, six hours. Prerequisite: consent of instructor. Limited to M.F.A. acting candidates in theater. Preparation and presentation of two-person scenes utilizing sensory work and "objectives" on a more refined basis. Students are able to find the similarities and differences between themselves and the characters and to play these elements truthfully and spontaneously.

421A. Advanced Projects in Acting (4 or 8 units). (Formerly numbered Theater Arts 421A.) Lecture/laboratory, six hours. Prerequisite: consent of instructor. Limited to M.F.A. acting candidates in theater. Preparation, presentation, and critique of scenes. Systematic role analysis and exercises in acting.

421B. Advanced Projects in Acting (4 or 8 units). (Formerly numbered Theater Arts 421B.) Lecture/laboratory, six hours. Prerequisite: consent of instructor. Limited to M.F.A. acting candidates in theater. Preparation, presentation, and critique of scenes. Systematic role analysis and exercises in acting.

421C. Advanced Projects in Acting (4 or 8 units). (Formerly numbered Theater Arts 421C.) Lecture/laboratory, six hours. Prerequisite: consent of instructor. Limited to M.F.A. acting candidates in theater. Class exercises in acting. Preparation and presentation of roles under performance conditions.

424A-424B-424C. Advanced Techniques in Voice for the Stage (2 units each). (Formerly numbered Theater Arts 424A-424B-424C.) Lecture/laboratory. Prerequisite: consent of instructor. Limited to M.F.A. acting candidates in theater. Development of voice techniques for the stage, including work on relaxation, limbering, breathing, articulators, and resonators. Special vocal problems for the actor.

424D-424E-424F. Special Problems in Voice for the Actor (2 units each). (Formerly numbered Theater Arts 424D-424E-424F.) Lecture/laboratory. Prerequisite: consent of instructor. Limited to M.F.A. acting candidates in theater. An extension of the first-year work, with increased demands on voice. Range and breathing capacity extension. Articulation and the phonetic alphabet. Advanced voice problems.

425A-425B-425C. Advanced Techniques in Movement for the Stage (2 units each). (Formerly numbered Theater Arts 425A-425B-425C.) Lecture/laboratory. Prerequisite: consent of instructor. Limited to M.F.A. acting candidates in theater. Physical awareness for the actor. Special emphasis on warming up the body, relaxation, gymnastics (balance, falls, stunts), movement techniques, and stage combat.

425D-425E-425F. Special Problems in Movement for the Actor (2 units each). (Formerly numbered Theater Arts 425D-425E-425F.) Lecture/laboratory. Prerequisite: consent of instructor. Limited to M.F.A. acting candidates in theater. Physical awareness for the actor, concentrating on individual problems in terms of space, movement, and time. Special emphasis on natural rhythms, relaxation, and balance.

430A-430B-430C. Advanced Studies in Playwriting (4 units, 8 units, 4 units). (Formerly numbered Theater Arts 430A-430B-430C.) Seminar, to be arranged. Prerequisites: courses 230A-230B-230C, consent of instructor. Guidance in the completion of thesis plays.

432. Manuscript Evaluation. (Formerly numbered Theater Arts 432.) 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 Motion Picture/Television 134A. May be taken twice for credit (once each year of M.F.A. residence).

442A-442B-442C. Advanced Problems in Costume Design. (Formerly numbered Theater Arts 442A-442B-442C.) Lecture/discussion. Prerequisite: consent of instructor. Limited to M.F.A. candidates. Study of costume design for theatrical productions. Development of costume designs from theatrical scripts, with emphasis on production styles and character revelation. The scripts vary in period and style to give design practice in the major costume periods and artistic styles.

443. Problems in Design (2 or 4 units). (Formerly numbered Theater Arts 443.) Lecture/laboratory, four hours (additional hours as required). Prerequisite: consent of instructor. Study and practice in design techniques for the theater. May be repeated for a maximum of 12 units.

444. The Development of Costume Design Construction Technologies for Theater. (Formerly numbered Theater Arts 444.) Discussion, two hours; laboratory, two hours. Prerequisite: consent of instructor. Limited to M.F.A. candidates. A study of the effect of artistic and stylistic ideas on the mode and dress of men and women. May be repeated twice for credit.

C446. Research and Practice in Scene Painting Techniques (2 units). (Formerly numbered Theater Arts C446.) Lecture/laboratory, three hours. Prerequisites: graduate standing, consent of instructor. Not open for credit to students with credit for former course 146. The study of scenic painting techniques and materials and their relation to the realization of color design and elevations. Concurrently scheduled with course C146. Each graduate student (1) researches a new painting method or technique and (2) solves a specific scenic problem or examines a particular period. The result is a theatrical scene painting project relating to that research.

460A. Problems in Advanced Direction for the Stage. (Formerly numbered Theater Arts 460A.) Lecture, to be arranged. Prerequisite: consent of instructor. Limited to M.F.A. candidates. Preparation and presentation of a published one-act play or equivalent under rehearsal conditions. Discussion and critique of work in progress.

460B. Problems in Advanced Direction for the Stage. (Formerly numbered Theater Arts 460B.) Lecture, to be arranged. Prerequisite: consent of instructor. Limited to M.F.A. candidates. Preparation and presentation of a published play under rehearsal conditions. Discussion and critique of work in progress.

460C. Problems in Advanced Direction for the Stage. (Formerly numbered Theater Arts 460C.) Lecture, to be arranged. Prerequisite: consent of instructor. Limited to M.F.A. candidates. Preparation and presentation of a full-length original play under rehearsal conditions. Discussion and critique of work in progress.

462. Production Project in Direction for the Stage (4 or 8 units). (Formerly numbered Theater Arts 462.) 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). (Formerly numbered Theater Arts 463.) 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 or 4 units). (Formerly numbered Theater Arts C472.) 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 for a maximum of 12 units. Concurrently scheduled with courses C172 and C272.

495A. Problems in the Teaching of Theater Arts. (Formerly numbered Theater Arts 495A.) Lecture/laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Study of and practice in the teaching of theater arts at the college and university level.

495B. Problems in the Teaching of Theater Arts (2 or 4 units). (Formerly numbered Theater Arts 495B.) Laboratory, to be arranged. Prerequisites: graduate standing, consent of instructor. Not open for credit to students with credit for former courses 495C-495D. 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. The Practice of Teaching Theater Arts (2 units). (Formerly numbered Theater Arts 496.) Discussion. Required once of all teaching assistants or associates in the department. Orientation and preparation of graduate students who have the responsibility to assist in the teaching of undergraduate courses in the department; discussion of problems common to the teaching experience. May not be applied toward the M.A., M.F.A., or Ph.D. May be repeated. S/U grading.

498. Professional Internship in Theater Arts (4, 8, or 12 units). (Formerly numbered Theater Arts 498.) 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. An internship at various film, television, or theater facilities accentuating the creative contribution, the organization, and the work of professionals in their various specialties. Given only when projects can be scheduled.

501. Cooperative Program (2 to 8 units). (Formerly numbered Theater Arts 501.) Prerequisite: consent of graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. S/U grading.

596A. Directed Individual Studies: Research (2 to 12 units). (Formerly numbered Theater Arts 596A.) Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

596B. Directed Individual Studies: Writing (2 to 12 units). (Formerly numbered Theater Arts 596B.) Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

596C. Directed Individual Studies: Directing (2 to 12 units). (Formerly numbered Theater Arts 596C.) Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

596D. Directed Individual Studies: Design (2 to 12 units). (Formerly numbered Theater Arts 596D.) Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

596E. Directed Individual Studies: Acting (2 to 12 units). (Formerly numbered Theater Arts 596E.) Hours to be arranged. Prerequisite: graduate standing. May be repeated with consent of instructor.

596F. Directed Individual Studies: Production (2 to 12 units). (Formerly numbered Theater Arts 596F.) 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). (Formerly numbered Theater Arts 597.) May be repeated for a maximum of 12 units.

598. M.A. Thesis in Theater Arts (2 to 8 units). (Formerly numbered Theater Arts 598.) 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). (Formerly numbered Theater Arts 599.) 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 142. 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. The Drama, 1842-1945

Humanities 1A, 1B, 1C. World Literature

Italian 46. Italian Cinema and Culture

121. Italian Cinema

122. The Italian Theater

Music 135A-135B-135C. History of the Opera

World Arts and Cultures
(Interdepartmental)

118 Men's Gym, (213) 206-1342

Professors

Elsie Dunin, M.A. *(Dance)*
Robert A. Georges, Ph.D. *(English, Folklore and Mythology)*
William R. Hutchinson, Ph.D. *(Music), Music Concentration Adviser*
Michael O. Jones, Ph.D. *(History, Folklore and Mythology)*
Jacques Maquet, Ph.D. *(Anthropology)*
James W. Porter, M.A. *(Music, Folklore and Mythology)*
Allegra Snyder, M.A. *(Dance)*
Melvyn B. Helstien, Ph.D., *Emeritus (Theater, Film, and Television)*

Associate Professors

Judy Mitoma, M.A. *(Dance), Chair and Dance Concentration Adviser*
Joseph F. Nagy, Ph.D. *(English, Folklore and Mythology)*
Philip L. Newman, Ph.D. *(Anthropology), Anthropology Concentration Adviser*
A. Jihad Racy, Ph.D. *(Music)*
Arnold Rubin, Ph.D. *(Art History)*

Assistant Professors

Robert L. Brown, Ph.D. *(Art History), Art History Concentration Adviser*
Patricia M. Harter, Ph.D. *(Theater, Film, and Television)*
Beverly J. Robinson, Ph.D. *(Theater, Film, and Television)*
Carol J. Sorgenfrei, Ph.D. *(Theater, Film, and Television)*

Stephen Stern, Ph.D. *(Folklore and Mythology, Library and Information Science), Folklore Concentration Adviser*

Visiting Lecturer

Romulus E. Zamora, M.F.A. *(Theater, Film, and Television)*

Scope and Objectives

The interdisciplinary major in world arts and cultures (formerly ethnic arts) is available to students in both the College of Fine 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 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. Techniques of inquiry and analysis are drawn from both fine 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 opportunities for participation in the aesthetic process in relation to ethnic dance, music, and theater.

Bachelor of Arts Degree

The major includes a core of seven courses (28 units) from anthropology, art, dance, folklore and mythology, music, and theater, film, and television; a concentration consisting of 36 units in one of these six disciplines; a senior colloquium; and three upper division elective courses (12 units).

Foreign Language Requirement

One year of a college-level foreign language is required in both the College of Fine Arts and the College of Letters and Science. All courses in foreign language, except foreign literature in English translation, may be applied toward this requirement.

If you plan to take the music concentration, you are advised to select French, German, or Italian.

General College Requirements

You must satisfy the general college requirements (other than foreign language) of your college (Fine Arts or Letters and Science) regardless of the department in which your concentration is located.

If you wish to confer with a counselor regarding program planning and major requirements, contact Wendy Urfrig at 825-8537 or 825-3951.

The Major

The following courses are required:

(1) A core of seven interdepartmental courses (28 units): Dance 70, 80A-80B, Folklore 15 or 101, Music 5A-5B-5C (5C is not required for the music concentration; two additional units are added within the concentration), Theater 102E, Anthropology 5, and Art History 55 or 56.

(2) A concentration of nine courses in one of the following areas (you must declare a concentration by the beginning of your junior year):

Anthropology: Courses 44 or 133R, 130, 150, 160, and any five upper division courses from 110 through 186B, including one area course from 171 through 177.

Art: Group A: one course from Art History 50, 51, 54, 55, 56, 57; group B: eight courses from Art History 102, 103A through 103E, 114A, 114B, 114C, 114D, C115A, C115B, C115C, C115D, C117A, C117B, C117C, 118A, 118B, 118C, 118D, C119A, C119B.

Dance: Courses 25B, 134A, 134B, 180A-180B; group A: two courses from 181A, 182A, 187A; group B: one course from 181B, 181C, 181D, 183A, 184B; group C: three two-unit courses from 171B through 176B (including one course each from Western and non-Western cultures; note that courses 71B through 76B are prerequisites for 171B through 176B).

Folklore and Mythology: Course 172; group A: one course from M111, 118, M180; group B: two courses from CM106, M123B, 124, M181, Classics 161, 168; group C: five courses from Folklore M112, M121, M122, M123A, M125, M126, M127, M128, M129, 130, 131, M149, M150, 190, German 134.

Music: Courses 20A, 20B, 20C (theory option) or 1B, 2A-2B (general music option); two courses from 140A, 140B, 140C; six one-unit performance courses selected from 80A-80N, 81A-81N (each must be repeated for a minimum of two quarters and a maximum of three quarters, totaling six courses); three courses from 26A, 26B, 26C, 126A, 126B, 126C, 130, 131A, 131B, 135A, 135B, 135C, 138, 139, 140A, 140B, 140C (only one course from the 140 series may be applied), 141, 142A, 142B, 143A, 143B, 144, 145, 146A, 146B, 146C, 147A, 147B, 148, 149, 151A, 151B, 152, 153A, 153B, 153C, M154A, M154B, 157, 158, M180, M181, C190A, C190B.

Students considering graduate study in ethnomusicology are strongly advised to select the theory option.

Theater, Film, and Television: Theater 5A, 5B, 5C; group A: one course from 140A, 140B, 141A, 141B, 142A, 142B; group B: eight units from 20, C117, 118A, 119A, 119B, 130A, 160, C190A, C190B; group C: three courses from 102A, 102B, 103A through M103D, 104D, 104E, 104F, Motion Picture/Television 106C, 128.

(3) World Arts and Cultures 190A-190B.

(4) Three elective courses which may be selected from the list below (other courses might also be appropriate). In order to meet degree requirements, the 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 areas outside the area of concentration.

Upper Division Courses

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 the World Arts and Cultures faculty during first quarter; topics include the arts in a societal context, ethnicity and the individual, and problems and approaches to fieldwork. Faculty-directed individual projects during second quarter. Fieldwork on some aspect of the various arts/expressive behaviors found in the ethnic communities of Los Angeles. In Progress grading. (W,Sp)

Upper Division Electives

Anthropology 118A, 118B. Museum Studies
133R. Aesthetic Anthropology
135Q. The Individual in Culture
137. Enthnography on Film
154. Principles of Social Structure
185. History of Social Anthropology

Art History (Art, Design, and Art History) 101A, 101B, 101C. Egyptian Art and Archaeology
102. Art of the Ancient Near East
103A. Greek Art
103B. Hellenistic Art
103C. Roman Art
103D. Etruscan Art
103E. Late Roman Art
104A. Western Islamic Art
104B. Eastern Islamic Art
C104C. Problems in Islamic Art
114A. The Early Art of India
114B. Chinese Art
114C. Japanese Art
114D. The Later Art of India
C115A. Advanced Indian Art
C115B. Advanced Chinese Art
C115C. Advanced Japanese Art
C117A, C117B, C117C. Advanced Studies in Pre-Columbian Art
118A. The Arts of Oceania
118B. The Arts of Pre-Columbian America
118C. The Arts of Sub-Saharan Africa
118D. The Arts of Native North America
C119A. Advanced Studies in African Art: Western Africa
C119B. Advanced Studies in African Art: Central Africa

Classics 161. Introduction to Classical Mythology
168. Introduction to Comparative Mythology

Dance 123A. Anatomy for the Dancer
123B. Applied Principles of Conditioning and Correctives for the Dancer
123C. Projects in Dance Kinesiology
126. Advanced Labanotation
132A-132B. Philosophical Bases and Trends in 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

171B. Dance of Indonesia

171D. Dance of India

172B. Dance of Ghana

173B. Dance of Mexico

174B. Dance of Yugoslavia

174C. Dance of Spain

176B. Dance of Israel (courses 71B through 76B are prerequisites for 171B through 176B)

181A. Dance Cultures of Asia

181B. Dance in Southeast Asia

181C. Dance in East Asia

181D. Dance in South Asia

182A. Dance Cultures of Africa

183A. Dance in Latin America

184B. Dance in the Balkans

187A. Dance Cultures of Native American Indians

East Asian Languages and Cultures 135. Buddhist Themes in Asian Literature

140A-140B-140C. Chinese Literature in Translation

141A-141B. Japanese Literature in Translation

170A-170B. Archaeology in Early and Modern China

172. Introduction to Buddhism

173. Chinese Buddhism

174. Japanese Buddhism

183. Introduction to Chinese Thought

184. Introduction to Japanese Thought

189. Chinese Brush Painting

English M104A. Early Afro-American Literature

M104B. Afro-American Literature since the 1920s

Folklore and Mythology CM106. Anglo-American Folk Song

108. Afro-American Folklore and Culture

M111. The Literature of Myth and Oral Tradition
M112. Survey of Medieval Celtic Literature
118. Folk Art and Technology
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. Analytical Approaches to Folk 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

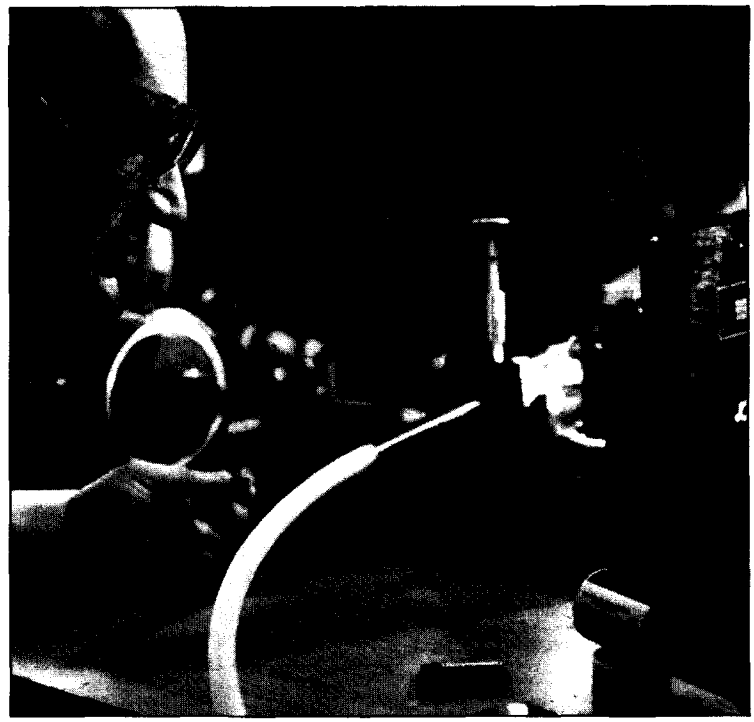
Motion Picture/Television (Theater, Film, and Television) 106C. History of African, Asian, and Latin American Film
110A. History of Broadcasting
128. Media and Ethnicity

Music 108. Acoustics
130. Music of the United States
131A-131B. Music of Hispanic America
132A-132B. Development of Jazz
133. Bach
134. Beethoven
135A-135B-135C. History of the Opera
137A-137B. Psychology of Music
138. Aesthetics of Music
139. History and Literature of Church Music
140A-140B-140C. Musical Cultures of the World
141. Survey of Music in Japan
142A-142B. Folk Music of Eastern Europe and the Mediterranean
143A-143B. Music of Africa
144. American Popular Music
145. History of Chinese Opera
146A-146B-146C. Studies in Chinese Instrumental Music
147A-147B. Music of China
148. Folk Music of South Asia
149. The Anthropology of Music
152. Survey of Music in India
153A-153B-153C. Music of the American Indians
M154A-M154B. The Afro-American Musical Heritage
157. Music of Brazil
158. New Orleans Jazz
M180. Analytical Approaches to Folk Music
M181. Folk Music of Western Europe
187. Problems in Musical Aesthetics

Theater (Theater, Film, and Television) 102A, 102B. Selected Topics on the History of the European Theater
103A. Black People's Theater in America: Slavery to the Mid-1800s
103B. Black People's Theater in America: Minstrel Stage to the Rise of the American Musical
M103C. The Origins and Evolution of Chicano Theater
M103D. Contemporary Chicano Theater
104D, 104E, 104F. History of the American Theater
C117. The Puppet Theater
118A. Creative Dramatics
119A. Theater for the Child Audience: Theory and Criticism
119B. Theater for the Child Audience: Performance
121. Acting Workshop
122. Makeup for the Stage
140A. Scenic Techniques for the Stage
140B. Advanced Scenery for the Stage
141A. Lighting Techniques for the Stage
141B. Advanced Lighting for the Stage
142A. Theater Costuming Techniques
142B. Advanced Costuming for the Stage
143. Scenic Design for the Theater
144A. Theater Sound Techniques
144B. Advanced Theater Sound
C146. Scene Painting Techniques
149A. Basic Drafting Techniques for the Stage
160. Fundamentals of Play Direction
C190B. The Role of Management in the Educational and Community Theater

School of Engineering and Applied Science

A.R. Frank Wazzan, Acting Dean



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An engineering education provides unusual opportunities for solving problems of major concern to our society. Technology is a dominant cause of change, including social change, and modern engineering is more than an identifiable body of science-based knowledge; it is a cogent point of view and approach to solving problems of great significance, as well.

The UCLA School of Engineering and Applied Science, although young by University standards, now ranks among the top engineering schools in the country in terms of the quality of instruction and the research contributions of its faculty. Its goal is an education that will allow graduates to practice the profession at the highest level and to move into new and still-to-be-discovered technical areas with confidence and ability. Included in this goal is preparation for graduate study. By the year 2000, it is anticipated that the majority of practicing engineers will have advanced degrees in engineering, and that many more individuals with an undergraduate education in engineering will be practicing medicine, dentistry, and law.

The six departments within the school serve as centers of activity for study and research in traditional as well as pace-setting engineering disciplines. By utilizing the resources of one or more departments, all students, undergraduate and graduate alike, are able to prepare for a wide range of professional careers in government, academia, and industry, including aerospace, computers, electrical and electronics, metal products, mining, machinery and manufacturing, chemicals and petroleum, utilities, and construction.

Photo: Dye laser beams are inspected in the millimeter wave laboratory of the Electrical Engineering Department, where research bears on the development of very high-frequency communications.

School of Engineering and Applied Science

Office of Student Affairs:
6426 Boelter Hall

Graduate: (213) 825-2682
Undergraduate: (213) 825-2826

Bachelor of Science Degrees

Students in the School of Engineering and Applied Science may elect one of the eight 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 and Engineering

(5) Bachelor of Science in Electrical Engineering

(6) Bachelor of Science in Engineering with a specialization in bioengineering*

(7) Bachelor of Science in Materials Engineering

(8) Bachelor of Science in Mechanical Engineering

*This is an interdepartmental program described under "Schoolwide Programs, Courses, and Faculty" at the end of the departmental listings.

The school offers instruction in acoustical engineering, aerospace engineering, applied plasma physics and fusion engineering, bioengineering, ceramic engineering, chemical engineering, civil engineering, computer engineering, control systems engineering, earthquake engineering, electrical and electronics engineering, general engineering, environmental engineering, fluid mechanics, geotechnical engineering, information and communications theory, manufacturing engineering, materials science, mechanical engineering, metallurgy, nuclear engineering, soil mechanics, solid mechanics, structural engineering, systems science, and water resources.

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. In the future, entrance to the school may be based on the results of a further examination of grades and test scores.

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 quarters (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.

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	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.

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

It is also highly recommended that you take a course in technical drafting while in high school.

Freshman applicants whose entire secondary schooling was outside the United States 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 College Board, 1947 Center Street, Berkeley, CA 94704. Test scores should be forwarded to UCLA.

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-fourth courses in chemistry, equivalent to UCLA's Chemistry 11A, 11B/11BL (chemistry is not a requirement for the computer science and engineering degree; the chemical engineering curriculum also requires Chemistry 11C/11CL, 21, 23, 25); (2) six courses in mathematics, equivalent to UCLA's Mathematics 31A, 31B, 32A, 32B, 33A, 33B; (3) four courses in physics, equivalent to UCLA's Physics 8A, 8B, 8C, 8D, and physics laboratory courses (8AL, 8BL, 8CL, 8DL), depending on curriculum selected.

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 University Exten-

sion, 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 and Engineering, Electrical Engineering, Engineering, Materials Engineering, and Mechanical Engineering consist of completing the minimum number of required units (from 185 to 201 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 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.

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; advisers 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 disciplinary action. You may not enroll in more than 18 units per quarter unless an Excess Unit Petition is approved in advance by the dean.

You must maintain 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 may be applied toward the bachelor's degree for Chemistry 2 or its equivalent after one year of high school chemistry has been completed with a grade of C or better.

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 IV, PASCAL, or PL/1, satisfies the Computer Science 10 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) Three free elective courses (12 units) may be selected in some major/major field pro-

Lower Division Preparation for the Majors

	UCLA Equivalent Courses
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)	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 9 quarter units minimum)	Chemistry 11A, 11B/11BL***
Engineering	
Digital computer programming, using a higher-level language such as FORTRAN IV, PASCAL, or PL/1 (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 10 or 11†; engineering core†† courses; free electives††
Additional Courses	
Life science (4 units), English composition (4 units), humanities-social sciences-fine arts (total of 20 quarter units minimum)	Life science course; English 3; humanities-social sciences-fine arts, three or four courses††

*Laboratory, depending on curriculum selected.
**Chemistry is not a requirement for the computer science and engineering degree.
***Chemical engineering curriculum also requires Chemistry 11C/11CL, 21, 23, 25.
†Computer Science 11 is a requirement only for the computer science and engineering degree.
††See specific undergraduate curricula for core courses, humanities-social sciences-fine arts electives, and free electives, depending on curriculum followed.

grams (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, certain remedial courses, and special courses designated by the school and posted in the Office of Student Affairs. However, in programs which include free elective units, it is strongly recommended that you select additional technical courses for some of these units.

(2) Six or seven humanities, social sciences, and/or fine arts courses (24 to 28 units) to be selected from an approved list. At least three (12 units) must be upper division courses.

To provide some depth, at least three courses (12 units) must be in the same academic department or must otherwise reflect coherence in subject matter. This group must contain at least two upper division courses.

In most cases, courses intended primarily to develop specific skills should be avoided except when the particular "skill" course is prerequisite to another upper division course strictly in the humanities or social sciences (e.g., foreign language and literature courses taught in the language). A list of courses which are normally acceptable individually as humanities-social sciences-fine arts electives is available in the Office of Student Affairs.

(3) One course in engineering and science in society (four units). One of the humanities-social sciences-fine arts courses or one of the free electives must deal primarily with engineering and science in society in the 100, 200, or 596 series (to be selected from an approved list).

(4) One life science course (four units) to be selected from an approved list.

(5) One mathematics course (four upper division units; computer science and engineering requires three courses — 12 upper division units); see curricula in individual departments for approved courses to fulfill this requirement.

(6) Engineering core courses, ranging from five to eight courses (20 to 32 units) depending on curriculum selected.

(7) Twelve to 16 courses (48 to 64 units) of upper division engineering major/major field courses, depending on curriculum followed.

(8) The engineering design content of your program must total at least one half-year of design experience.

(9) 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 posted in the Office of Student Affairs.

The aerospace engineering, chemical engineering, civil engineering, electrical engineering, engineering, materials engineering, and mechanical engineering curricula are accredited by the Accreditation Board for Engineering and Technology, Inc. (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 engineering adviser. After the first quarter, curricular and career advising is accomplished on a formal basis. You are urged to select a faculty adviser as soon as possible, preferably at the beginning of your sophomore year.

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. 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 Junior Conference conducted by the School of Engineering and Applied Science to help you plan your curriculum. The conference usually is held during the fourth week of each quarter. For time and place, consult the Office of Student Affairs.

The Elective Selection form approved by the faculty adviser must be submitted for approval by the Associate Dean, Student Affairs, Office of Student Affairs, during the third quarter of the sophomore year. The deadline is announced each term in the school's *Undergraduate Enrollment Instructions* brochure.

Members of the Office of Student Affairs staff 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 quarter 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 quarter. Only humanities-social sciences-fine arts 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.

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 with the Bachelor's Degree

Students who have achieved scholastic distinction may be awarded the bachelor's degree with honors. Students eligible for 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 for *Summa cum laude*, the next five percent for *Magna cum laude*, and the next 10 percent for *Cum laude*.

Based on grades achieved in upper division courses, an engineering student should have a 3.8 grade-point average for *Summa cum laude*, a 3.634 for *Magna cum laude*, and a 3.484 for *Cum laude*. For all designations of honors, you must have a minimum 3.25 grade-point average in your major field elective 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."

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 21 percent of the undergraduate and 11 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 engineers are in great demand in all fields of engineering.

The Society of Women Engineers (SWE) has established a UCLA student chapter which sponsors field trips and engineering-related speakers (often professional women) to intro-

duce the various options available to women engineers. The UCLA chapter of SWE, in conjunction with other Los Angeles schools, also publishes an annual resumé book to aid women students in finding jobs.

Continuing Education

Continuing Education in Engineering is under the academic leadership of the School of Engineering and Applied Science and is managed by UCLA Extension. The department offers evening classes, short courses, special programs, and in-plant training in education. The Extension Office (637 UNEX, 10995 Le Conte Avenue, 825-4100) is open Monday through Friday.

Graduate Study

Admission

In addition to meeting the requirements of the Graduate Division, applicants for the graduate engineering programs are required to take the General Test and Subject Test of the Graduate Record Examination (GRE) 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.

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. Exceptional students with research experience and strong evidence of creativity may petition to proceed to candidacy for the Ph.D. degree without the M.S. degree.

Graduate students without adequate preparation may be admitted provisionally and may be required to take certain remedial 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

The following courses are not applicable toward graduate degrees: Engineering 11, 12, 106B, 106C, 106D, 109, Chemical Engineering M105A, M105D, 199, Civil Engineering 15, 106A, 108, M109A, 199, Computer Science 5, 10C, 10F, 11, 12, 13, 30, 99, 199, Electrical Engineering 100, 100L, 101, 102, 103, 199, Materials Science and Engineering 14, 15, 199, Mechanical, Aerospace, and Nuclear Engineering 94, 102, 103, M105A, M105D, M109A, 199.

Individual departments within the School of Engineering 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 parallel those listed below for the Ph.D. program. You are free, however, 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. No specific courses are required, but the majority of the total formal course requirement and a majority of the graduate course requirement must consist of courses in the School of Engineering. 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 lying 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 quarter, 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

Admission

In addition to the University minimum requirements, the following are required for the M.Engr. degree: (1) five years of responsible full-time professional experience in engineering; (2) some formal study in statistics; (3) the Graduate Management Admission Test (GMAT) or the Aptitude and Advanced Tests of the Graduate Record Examination (GRE) in Engineering, Mathematics, or a related field. A screening interview with the coordinator of the Engineering Executive Program may be required.

The School of Engineering and Applied Science has a supplement to the Application for Admission which may be obtained from the Engineering Executive Program, School of Engineering and Applied Science, 6722 Boelter Hall, UCLA, Los Angeles, CA 90024.

Major Field or Subdiscipline

Engineering management.

Course Requirements

A total of 12 graduate courses are required: Engineering 470A-470D, 471A-471B-471C (half course), 472A-472D (half course), 473A-473B.

Comprehensive Examination Plan

The comprehensive examination, which is offered once a year and is general in scope, is given in written and oral form. Students who fail this examination may be reexamined once.

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 and orientation 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 on the way 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: Earthquake engineering, soil mechanics, structures, water resource systems engineering.

Computer Science Department†: Computer methodology (dynamic systems modeling and optimization, machine intelligence, physical systems), computer network modeling and analysis, computer science theory, computer system architecture, programming languages and systems (software systems).

Electrical Engineering Department: Applied plasma physics and fusion engineering, circuits, communications and telecommunications engineering, control systems, electromagnetics, operations research, quantum electronics, solid-state electronics.

Materials Science and Engineering Department: Ceramics and ceramic processing, mechanical metallurgy and deformation processing, physical metallurgy and metal processing, science of materials.

Mechanical, Aerospace, and Nuclear Engineering Department: Applied dynamic systems control, applied plasma physics and fusion engineering, dynamics, fluid mechanics, heat and mass transfer, manufacturing engineering, nuclear science and engineering, and structural and solid mechanics.

Schoolwide Fields: Applied mathematics**, biocybernetics, man-machine-environment systems.

Schoolwide Program: Bioengineering.

*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.
†Computer science majors may pursue additional relevant minor fields of study offered by the School of Engineering and Applied Science.
**Established minor field only.

Course Requirements

All candidates must fulfill the minimum requirements of the Graduate Division (see "Requirements for Graduate Degrees" in Chapter 3). For further information, contact the individual departments.

Qualifying Examinations

All candidates must fulfill the minimum requirements of the Graduate Division (see "Requirements for Graduate Degrees" in Chapter 3). For further information, contact the individual departments.

Final Oral Examination

All candidates must fulfill the minimum requirements of the Graduate Division (see "Requirements for Graduate Degrees" in Chapter 3). 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 quarters 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 Engineering and Applied Science may subsequently be applied toward master's and/or doctoral degrees.

Chemical Engineering

5405 Boelter Hall, (213) 825-2046, 825-2491

Professors

Traugott H.K. Frederking, Ph.D.
Sheldon K. Friedlander, Ph.D. *(Ralph M. Parsons Professor of Chemical Engineering), Chair*
Eldon L. Knuth, Ph.D.
Ken Nobe, Ph.D.
Lawrence B. Robinson, Ph.D., *Associate Dean*
William D. Van Vorst, Ph.D.
A.R. Frank Wazzan, Ph.D., *Acting Dean*
F. Eugene Yates, M.D. *(Crump Professor of Medical Engineering)*

Associate Professors

Owen I. Smith, Ph.D.
Vincent L. Vilker, Ph.D.

Assistant Professors

David T. Allen, Ph.D.
Yoram Cohen, Ph.D.
Robert F. Hicks, Ph.D.
Vasilios Manousiouthakis, Ph.D.

Adjunct Professors

Manuel M. Baizer, Ph.D.
W. Kenneth Davis, M.S.
C. Pierre Zaleski, Ph.D.

Adjunct 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, complex mixture engineering and catalysis, electrochemistry and corrosion, combustion science, spectroscopy of complex systems, cryogenics and low-temperature processes, biochemical and biomedical engineering, computer-aided design, 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. Faculty members in the department are active in the Crump Institute for Medical Engineering and the National Center for Intermedia Transport Research, sponsored at UCLA by the Environmental Protection Agency and the Center for Engineering and Systems Analysis for the Control of Toxics.

The undergraduate curriculum leads to a B.S. in Chemical Engineering and is accredited by ABET and AIChE. 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 chemical engineering curriculum is to provide a high quality, professionally oriented education in modern chemical engineering. Balance is sought between design and science.

The Major

Course requirements are as follows (186 minimum units required):

(1) Six core courses: Chemical Engineering M105A, M105D, Civil Engineering 108, Electrical Engineering 100, 103, Mechanical, Aerospace, and Nuclear Engineering 103.

(2) Chemical Engineering 137, 137A, 137B, 137C, 137D, 137E (satisfies the engineering economics requirement), 137F, 138; 139A, 139B (satisfies the laboratory requirement); M192A (satisfies the mathematics requirement); Chemistry 113A, 114.

(3) Two elective courses from Chemical Engineering 130A, 138A, 138B, 138C, 138E (other courses in engineering, mathematics, and the sciences may be selected in consultation with your adviser), and one upper division chemistry elective course (except Chemistry 110A) selected in consultation with your adviser.

(4) English 3: Chemistry 11A, 11B/11BL, 11C/11CL, 21, 23, 25 (satisfies the life science requirement); Computer Science 10C or 10F; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A, 8B, 8C, 8D.

(5) Six courses from the humanities, social sciences, and/or fine arts approved list (at least three must be upper division; at least three — with two upper division — must be in the same academic department or otherwise reflect coherence with respect to subject matter; and one must satisfy the engineering and science in society requirement).

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.

Upper Division Courses

M105A. Introduction to Engineering Thermodynamics. (Formerly numbered Engineering 105A.) (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 the analysis and design of closed and open systems. Mr. Knuth, Mr. Robinson, Mr. Van Vorst (F,W,Sp)

M105D. Transport Phenomena. (Formerly numbered Engineering 105D.) (Same as Mechanical, Aerospace, and Nuclear Engineering M105D.) 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. Mr. Vilker (F,W,Sp)

130A. Introduction to Statistical Thermodynamics. (Formerly numbered Engineering 130A). Prerequisite: course M105A. Calculations of expected values and variances of thermodynamic functions for perfect monatomic gas, Einstein monatomic crystal, photon gas, electron gas in a metal, perfect absorbed gas, perfect diatomic gas, and Debye monatomic crystal. Calculations of gross emission rates from surfaces. Mr. Knuth (F)

137. Introduction to Chemical Engineering. (Formerly numbered Engineering 137.) Prerequisites: Mathematics 32B (may be taken concurrently), Chemistry 11C/11CL, Physics 8B. Introduction to the analysis and design of industrial chemical processes. Material and energy balances. Mr. Allen (F)

137A. Chemical Engineering Thermodynamics. (Formerly numbered Engineering 137A). Prerequisite: course 137. Thermodynamic properties of pure substances and solutions. Phase equilibrium. Chemical reaction equilibrium. Mr. Nobe (W)

137B. Chemical Engineering Diffusional Processes. (Formerly numbered Engineering 137B.) Prerequisites: courses M105D, 137, 137A. Brownian motion, fluxes according to irreversible thermodynamics; one-dimensional theory: membrane transport, facilitated transport; convective diffusion, concentration boundary layers, turbulent diffusion. The fundamentals illustrated by applications to separation processes, gas cleaning, and blood oxygenation. Mr. Allen, Mr. Friedlander (Sp)

137C. Chemical Engineering Separation Operations. (Formerly numbered Engineering 137C.) Prerequisites: courses M105D, 137, 137A. Application of the principles of heat, mass, and momentum transport to the design and operation of separation processes such as distillation, gas absorption, filtration, and reverse osmosis. Mr. Van Vorst (Sp)

137D. Chemical Engineering Kinetics. (Formerly numbered Engineering 137D.) Prerequisites: courses M105D, 137, 137A, 137B. Fundamentals of chemical kinetics and catalysis. Introduction to the analysis and design of homogeneous and heterogeneous chemical reactors. Mr. Smith (F)

137E. Chemical Process Economics and Synthesis. (Formerly numbered Engineering 137E.) Prerequisites: courses 137C, 137D, 139A, 139B (latter may be taken concurrently). Integration of chemical engineering fundamentals such as transport phenomena, thermodynamics, separation operations, and reaction engineering and simple economic principles for the purpose of designing chemical processes and evaluating alternatives. Mr. Van Vorst (W)

137F. Chemical Process Computer-Aided Design and Analysis. Prerequisites: courses 137C, 137D, 137E, Computer Science 10F. An introduction to the application of some of the mathematical and computing methods to chemical engineering design problems; the use of simulation programs as an automated method of performing steady state material and energy balance calculations. Mr. Cohen, Mr. Friedlander (Sp)

138. Chemical Engineering Process Dynamics and Control. (Formerly numbered Engineering 138.) Prerequisites: courses 137B, 137C, 137D. 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)

138A. Introduction to Cryogenics and Low-Temperature Processing. (Formerly numbered Engineering 138A.) Prerequisite: course M105A. Liquefaction of gases, cooling to cryotemperatures, LNG processes, liquid hydrogen, and liquid He cryosystems for superfluids and applied superconductivity. Mr. Frederking (W)

138B. Chemical Engineering Polymer Processes. (Formerly numbered Engineering 138B.) Prerequisites: Mechanical, Aerospace, and Nuclear Engineering 103 and Chemistry 21, or senior standing in engineering or physical science. 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 (F)

138C. Chemical Engineering Pollution Technology. Prerequisites: courses 137C, 137D, or equivalent. Integration of chemical engineering fundamentals such as transport phenomena and chemical kinetics with environmental pollution concerns for the purpose of designing control devices and of analyzing the fate of pollutants in the environment. Mr. Cohen, Mr. Friedlander, Mr. Vilker (W)

138E. Fundamentals of Corrosion. (Formerly numbered Engineering 138E.) Prerequisites: courses M105A, and 137A or Materials Science and Engineering 141. The fundamentals of electrochemistry pertinent to metallic corrosion. Primary emphasis on the fundamental approach in the consideration of complex corrosion processes. Specific topics include pitting, crevice corrosion, stress corrosion, hydrogen embrittlement, and corrosion control. Mr. Nobe (Sp)

139A. Introductory Chemical Engineering Laboratory. (Formerly numbered 139AC.) Laboratory, eight hours. Prerequisites: courses M105A, M105D, 137, 137A, and Mechanical, Aerospace, and Nuclear Engineering 103, or consent of instructor. Basic introductory laboratory experiments illustrating applications of the principles of thermodynamics, chemical kinetics, and transport phenomena to practical systems. Experiments include examples of heat transfer, fluid flow, chemical thermodynamics, and homogeneous chemical kinetics. (F)

139B. Chemical Engineering Laboratory. (Formerly numbered 139BC.) Laboratory, eight hours. Prerequisites: courses 137B, 137C, and 139A, or consent of instructor. Course consists of four experiments, each of two weeks duration. After each experiment, students prepare a detailed report that includes sections on background material, theory, experimental procedures, experimental results, scale-up and design considerations, and error analysis. (W)

M192A. Mathematics of Engineering. (Formerly numbered Engineering 192A.) (Same as Mechanical, Aerospace, and Nuclear Engineering 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. Series solution to linear second-order ordinary differential equations. Special functions and introduction to boundary value problems. Mr. Robinson (F,W,Sp)

199. Special Studies (2 to 8 units). Prerequisites: senior standing, consent of instructor. Individual investigation of a 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

230A. Advanced Engineering Thermodynamics. Prerequisites: courses 130A, 137A, or equivalent. Phenomenological and statistical thermodynamics of chemical and physical systems with engineering applications. Presentation of the role of atomic and molecular spectra and intermolecular forces in the interpretation of thermodynamic properties of gases, liquids, solids, and plasmas. Mr. Robinson (F)

230B. Nonequilibrium Thermodynamics. Prerequisite: course 230A. Interpretation of nonequilibrium phenomena in terms of the fourth law of thermodynamics, namely (1) linear interdependence of fluxes and driving forces and (2) Onsager reciprocal relations. Boltzmann transport equation; diffusion; electrical and heat currents; numerical calculation of parameters. Mr. Robinson

230C. Cryogenics. Prerequisite: course 137A. The study of basic phenomena in low-temperature systems, including the third law, various cooling methods, and superfluid systems; Meissner state, type I and type II systems; applied superconductivity cryogenics. Mr. Frederking

230D. Thermodynamics of Phase Transitions. Prerequisite: course 230A or equivalent. Phase stability criteria and separation of phases. Molecular thermodynamic treatment of multicomponent systems with chemical engineering applications. Solubility of gases and solids in liquids. Phase equilibrium properties of fluid mixtures. Mr. Robinson

237A. Reaction Kinetics. Prerequisites: courses 130A, 137C, 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. Knuth, Mr. Smith

237B. Molecular Dynamics. Prerequisite: course 130A or 137C. 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. Knuth (W)

237E. Combustion Processes. Prerequisite: course 137C 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. Knuth, Mr. Smith (Sp)

238. Advanced Mass Transfer. Prerequisite: course M105D, 137E, or consent of instructor. 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. Cohen, Mr. Friedlander (F)

238A. Chemical Reaction Engineering. Prerequisites: courses 137B, 137C, 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. Allen (W)

238C. Electrochemical Engineering. Prerequisite: one year of physical chemistry or equivalent. 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)

238D. Biochemical Engineering. Prerequisites: courses 137C and 137D, or consent of instructor. Theoretical models and experimental techniques for describing the thermodynamics and transport behavior of solutions of biological macromolecules. Nonideal solution behavior. Applications to mass transfer problems in natural and man-made systems. Elementary theory of biochemical reactions.
Mr. Vilker

239AA-239AZ. Special Topics in Chemical Engineering (2 to 4 units each). Prerequisites: consent of instructor, additional prerequisites for each offering as announced in advance by the 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. (F,W,Sp)

239CA-239CZ. Seminar: Current Topics in Energy Utilization. Prerequisite: consent of instructor. Review of current literature in an area of energy utilization in which the instructor has developed special proficiency as a consequence of research interests. Students report on selected topics. (F,W,Sp)

239EA-239EZ. Seminars in Chemical Engineering (2 to 4 units each). Prerequisites: consent of instructor, additional prerequisites for each offering as announced in advance by the department. Lectures, discussions, student presentations, and projects in areas of current interest. May be repeated for credit. S/U grading. (F,W,Sp)

240. Fundamentals of Aerosol Technology. Prerequisite: course 137B or equivalent. 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.
Mr. Friedlander (W)

250. Computer-Aided Chemical Process Design. Prerequisite: course 137E or consent of instructor. The 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. (F)

260. Non-Newtonian Fluid Mechanics. Prerequisite: prior course in fluid mechanics such as Mechanical, Aerospace, and Nuclear Engineering 150A or consent of instructor. 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

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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 the 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

4531 Boelter Hall, (213) 825-1346

Professors
Stanley B. Dong, Ph.D.
John A. Dracup, Ph.D.
Michael E. Fourney, Ph.D.
Gary C. Hart, Ph.D.
Poul V. Lade, Ph.D.
Chung Yen Liu, Ph.D.
Rokuro Muki, Ph.D.
Richard B. Nelson, Sc.D.
Richard L. Perrine, Ph.D.
Moshe F. Rubinstein, Ph.D.
Lucien A. Schmit, Jr., M.S.
Lawrence G. Selna, Ph.D.
Michael K. Stenstrom, Ph.D.
William W-G. Yeh, Ph.D., *Chair*
C. Martin Duke, M.S., *Emeritus*
Tung Hua Lin, D.Sc., *Emeritus*

Associate Professors
Lewis P. Felton, Ph.D.
Sanford B. Roberts, Ph.D.

Assistant Professor
Johannes B. Neethling, Ph.D.

Senior Lecturer
George J. Tauxe, M.S., *Emeritus*

Adjunct Professors
Robert E. Englekirk, Ph.D.
Y. Marvin Ito, Ph.D.
George E. Warren, Ph.D.

Scope and Objectives

The civil engineering programs at UCLA include structural engineering and design, 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, soil mechanics, 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 a number of areas, including structures, structural mechanics, earthquake engineering, mechanics of solids, soil mechanics, environmental engineering, and water resource systems 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 civil engineering profession or for graduate civil engineering schools in the United States.

The Major

Course requirements are as follows (187 minimum units required):

(1) Seven core courses: Chemical Engineering M105A or Mechanical, Aerospace, and Nuclear Engineering M105A, Civil Engineering 108, Electrical Engineering 100, 103, Materials Science and Engineering 14, Mechanical, Aerospace, and Nuclear Engineering 102, 103.

(2) Civil Engineering 106A, 165A, 165B or 166, 184B, 184D, 185A, 186; one mathematics course from Mechanical, Aerospace, and Nuclear Engineering 191A, M192A (or Chemical Engineering M192A), 192B, 192C, 193A, 193B.

(3) Twenty-eight elective units, to be selected from the courses listed below, which must include at least 13 design units and eight units of laboratory. At least two four-unit design courses are required (Civil Engineering 167A and 167B are recommended for students specializing in structures; Civil Engineering 167B and 185B are recommended for students specializing in geotechnical engineering or water resources and environmental engineering):

Engineering Mechanics: Civil Engineering 157B, 160, 166 (or Mechanical, Aerospace, and Nuclear Engineering 166A), Mechanical, Aerospace, and Nuclear Engineering 156A, 158A.

Geotechnical Engineering: Civil Engineering 185B, 185L, Earth and Space Sciences 100, M139.

Structures: Civil Engineering 165B, 165C (for structural analysis); Civil Engineering M169A, 169L (for structural dynamics); Civil Engineering 165L, 167A, 167B, 167C, 167L, 167X (for structural design).

Systems Analysis: Civil Engineering 174A, Engineering 176A.

Water Resources and Environmental Engineering: Civil Engineering M134A, 181A, 184A, 184E.

(4) English 3; Chemistry 11A, 11B/11BL; Civil Engineering 15; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A/8AL, 8B/8BL, 8C, 8D; one life science elective course.

(5) Six courses from the humanities, social sciences, and/or fine arts approved list (at least three must be upper division; at least three — with two upper division — must be in the same academic department or otherwise reflect coherence with respect to subject matter).

(6) Three free elective courses, one of which must satisfy the engineering and science in society requirement.

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 Course

15. Introduction to Programming. Lecture, four hours; laboratory, two hours. Introduction to programming using structured FORTRAN. Selected topics in programming, with emphasis on numerical techniques as applied to engineering problems. Mr. Dong, Mr. Stenstrom (F,W,Sp)

Upper Division Courses

106A. Principles of Engineering Economy. (Formerly numbered Engineering 106A.) Prerequisite: upper division standing. Economic analysis of engineering projects; value systems; economic decisions on capital investment and choice of engineering alternatives; new projects, replacement and abandonment policies; risky decisions including make/buy policies and research investment; corporate financial practices and accounting. Mr. Dracup (F,W,Sp)

108. Introduction to Mechanics of Deformable Solids. (Formerly numbered Engineering 108.) Lecture, three hours; recitation, two hours. Prerequisite or corequisite: Mathematics 33A. Recommended: Mechanical, Aerospace, and Nuclear Engineering 102. Review of equilibrium principles. Concepts of stress and strain. Material constitution (stress-strain relations). Energy in deformable bodies. Structural applications to trusses, beams, shafts, columns, and pressure vessels. Mr. Nelson (F,W,Sp)

M109A. Engineering and Policy: Resources and Risk. (Same as Mechanical, Aerospace, and Nuclear Engineering M109A.) Lecture, two hours; recitation, two hours. Prerequisite: sophomore or higher standing in engineering. The philosophical, sociological, and institutional implications of engineering-based risk and decision making. Emphasis on opportunities for the useful development of resources, inherent risks, and the responsibilities of engineers in the decision process. Emphasis on thoughtful student discussion. Mr. Perrine (W)

M134A. New Energy Technology: Resources, Conversion, Constraints. (Formerly numbered 134A.) (Same as Mechanical, Aerospace, and Nuclear Engineering M134A.) Prerequisite: Chemical Engineering M105A or Mechanical, Aerospace, and Nuclear Engineering M105A or equivalent in physics or chemistry or consent of instructor. Energy resources: fossil fuels, nuclear fuels, hydro, solar, wind, geothermal, and biomass sources. Conversion methods for power production and other energy uses. Consideration of thermodynamic, economic, and environmental constraints. Mr. Perrine (F)

157B. Experimental Fracture Mechanics. (Formerly numbered Engineering 157B.) Lecture, two hours; laboratory, four hours. Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 157 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. Fourney (W)

160. Introduction to Biostructural Mechanics. (Formerly numbered Engineering 160.) Prerequisite: course 108 or equivalent. An introduction to biostructural mechanics of the human musculoskeletal system. Structural characteristics and behavior of skeletal members. Response to mechanical trauma. Elastic and viscoelastic properties of hard and soft tissues. Mathematical modeling. Design characteristics of hip prostheses and anthropometric dummies. Mr. Roberts (Sp)

165A. Elementary Structural Analysis. (Formerly numbered Engineering 165A.) Prerequisite: course 108. Equilibrium of structures; deformation analysis of structures by differential equation method, moment-area method, and the principle of virtual work; influence lines; analysis of statically determinate and indeterminate structures such as beams, frames, arches, and trusses; introduction to slope-deflection equations. Mr. Schmit (F,Sp)

165B. Intermediate Structural Analysis. (Formerly numbered Engineering 165B.) Prerequisite: course 165A. Classical force, displacement methods of structural analysis; three moment equation, slope-deflection equations, moment distribution; virtual work, minimum potential, complementary potential theorems; Castigliano's theorems, generalized displacements, forces; Rayleigh-Ritz method; introduction to matrix methods; stiffness, flexibility matrices for bars, beams. Mr. Nelson (F,W)

165C. Computer Analysis of Structures. (Formerly numbered Engineering 165C.) Prerequisite: course 165A. Development of algorithms and FORTRAN coding for matrix manipulation, inversion; solution of the linear algebraic equations, eigenvalue problems; structural applications; matrix displacement method for planar trusses, frames, direct assembly of system stiffness; matrix force method for planar frames. Mr. Dong (Sp)

165L. Structural Design and Testing Laboratory. (Formerly numbered Engineering 165L.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 15 or equivalent, 165A. 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)

166. Elementary Structural Mechanics. (Formerly numbered M166.) 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. Roberts (W)

166L. Experimental Structural Mechanics. Lecture, three hours; laboratory, two hours. Prerequisite: course 166 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. Fourney (F)

167A. Design of Steel Structures. (Formerly numbered Engineering 167A.) Lecture, three hours; recitation, three hours. Prerequisite: course 165A. Allowable stress design of tension members, compression members, beams, beam columns, and tension splices according to AISC specifications for buildings. (F)

167B. Design of Reinforced Concrete Structures. (Formerly numbered Engineering 167B.) Lecture, three hours; recitation, three hours. Prerequisite: course 165A. Design of reinforced concrete buildings. Reinforced concrete beams, columns, and slabs. Working stress and ultimate strength methods of analysis. Determination of loads and design constraints. Introduction to reinforced concrete structural systems. Mr. Selna (W)

167C. Design of Prestressed Concrete Structures. (Formerly numbered Engineering 167C.) Prerequisite: course 165A. 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)

167L. Reinforced Concrete Structural Laboratory. (Formerly numbered Engineering 167L.) Laboratory, eight hours. Prerequisites: course 167B, consent of instructor. Experimental verification of strength design methods used for reinforced concrete elements. Full- or near full-scale slab, beam, column, and joint specimens tested to failure. Mr. Selna (Sp)

167X. Reinforced Concrete Construction Laboratory (2 units). (Formerly numbered Engineering 167X.) Laboratory, four hours. Prerequisite: junior standing. Design and fabrication methods used for construction of reinforced concrete structural elements. Full- or near full-scale slab, beam, column, and joint elements formed, fabricated, and cast in the laboratory. Mr. Selna (F)

M169A. Introduction to Mechanical Vibrations. (Formerly numbered Engineering 169A.) (Same as Mechanical, Aerospace, and Nuclear Engineering M169A.) Prerequisites: course 108, Mechanical, Aerospace, and Nuclear Engineering 102. Recommended: Electrical Engineering 102. Fundamentals of vibration theory and applications. Free, forced, and transient vibration of one and two degrees of freedom systems, including damping and nonlinear behavior. Normal modes, coupling, and normal coordinates. Elements of vibration and wave propagation in continuous systems. Mr. Hart (F)

169L. Mechanical Vibrations Laboratory (2 units). (Formerly numbered Engineering 169L.) Corequisite: course M169A. 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. (F)

174A. Introduction to Elements of Decision Making. (Formerly numbered Engineering 174A.) Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 193A or equivalent mathematics course. Elements of decision making and the 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.
Mr. Rubinstein (F)

181A. Air Pollution Control. (Formerly numbered Engineering 181A.) Prerequisite: senior standing or consent of instructor. Sources of air pollutants and their atmospheric transport, dispersion, and photochemical reactions. Design and operational basis for stationary and mobile source control systems. An overview of current regulatory trends.
Mr. Liu, Mr. Perrine (W)

181B. Waste and Hazardous Waste Management. Prerequisite: senior standing 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. Perrine (W)

184A. Engineering Hydrology. (Formerly numbered Engineering 184A.) Prerequisite: senior standing 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, Mr. Yeh (F)

184B. Introduction to Water Resources Engineering. (Formerly numbered Engineering 184B.) Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 103 or consent of instructor. Principles of hydraulics, the 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. Yeh (W)

184D. Water Quality Control Systems. (Formerly numbered Engineering 184D.) Prerequisites: Mechanical, Aerospace, and Nuclear Engineering 103 and upper division standing in engineering, or consent of instructor. Biological, chemical, and physical bases of water quality and pollution; potability and chemical aspects of treatment and reclamation; analysis and design of water and wastewater treatment systems; field trip. Mr. Stenstrom (F)

184E. Water Quality Control Laboratory. (Formerly numbered Engineering 184E.) Laboratory, eight hours. Prerequisites: course 184D (may be taken concurrently), Chemistry 11A, 11B. Basic laboratory techniques and practice for the characterization and analysis of waters and wastewaters. Selected experiments include measurement of biochemical oxygen demand, suspended solids, dissolved oxygen hardness, and other parameters used in water quality control. Mr. Stenstrom (F)

185A. Principles of Soil Mechanics. (Formerly numbered Engineering 185A.) Prerequisite: course 108. Recommended: Earth and Space Sciences 1. 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)

185B. Design of Foundations and Earth Structures. (Formerly numbered Engineering 185B.) (Not the same as course 185B prior to Winter Quarter 1983.) Prerequisite: course 185A. 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)

185L. Soil Mechanics Laboratory (2 units). (Formerly numbered Engineering 185L.) Laboratory, four hours. Prerequisite: course 185A or consent of instructor. Laboratory experiments to be performed by the students to get basic data required for assigned design problems. Soil classification, Atterberg limits, permeability, compaction, shear strength, and specific gravity determination. Design problems, report writing. Mr. Lade (Sp)

186. Civil Engineering Projects. (Formerly numbered Engineering 186.) Lecture, two hours; recitation, four hours. Prerequisites: courses 167A or 167B or 167C, and 184B, 185A. Integration of civil engineering disciplines for design of bridges or other projects. Stream flow studies, stream bed transport, and scour. Foundation design of piers, abutments, and approach structures. Structural concepts, loading, analysis, member selection, and detailing of abutments, piers, and superstructure.
Mr. Selna (W)

M192F. 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. Fleury

199. Special Studies (2 to 8 units). Prerequisites: senior standing, consent of instructor. Individual investigation of a 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

256B. Elasticity. (Formerly numbered Mechanics and Structures 256B.) Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 256A or consent of instructor. Formulation of elastostatic problems; general, plane strain, plane stress. Reciprocal theorems and variational theorems. Airy's stress function and Papkovich-Neuber solution. Fundamental singular solutions, stress concentration, thermal stresses, elastic contact, load transfer, St. Venan's principle and applications. Mr. Muki (W)

264A. Theory of Plates and Shells. (Formerly numbered Mechanics and Structures 264A.) Prerequisite: course 166 or Mechanical, Aerospace, and Nuclear Engineering 158A or consent of instructor. 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. Roberts (W)

264B. Mechanics of Composite Material Structures. Prerequisites: courses 264A or equivalent and 166 (or an introductory course on linear elasticity or continuum mechanics or consent of instructor). Review of analysis of stress and strain. Anisotropic stress-strain temperature relations. Analysis of laminated anisotropic plates and shells based on classical and refined theories. Elastodynamic theory of vibrations and waves in laminated anisotropic plates and cylinders. Analysis of edge effects, joints, and fracture. Failure theories and fatigue for composite materials. Mr. Dong (Sp)

265A. Advanced Structural Analysis. (Formerly numbered Mechanics and Structures 265A.) Prerequisite: course 165B. Review of elasticity theory; theorem on virtual work, stationary value of potential and complementary potential; Castigliano, Maxwell-Betti theorems; stiffness, flexibility matrices for truss, beam elements; matrix force and displacement analysis of trusses, frames; introduction to finite element methods. Mr. Nelson (F)

265B. Finite Element Analysis of Structures. (Formerly numbered Mechanics and Structures 265B.) Prerequisites: courses 166 and 265A, 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. Dong (W)

265C. Nonlinear Structural Analysis. (Formerly numbered Mechanics and Structures 265C.) Prerequisite: course 265B 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)

265D. 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 quarter to quarter. Mr. Muki (F)

266A. Stability of Structures I. (Formerly numbered Mechanics and Structures 266A.) Prerequisites: courses 165B, 166, 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. Schmit (Sp)

M267A. Optimum Structural Design. (Formerly numbered 267A.) (Same as Mechanical, Aerospace, and Nuclear Engineering M267A.) Prerequisite: course 265A 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, Mr. Schmit (W)

267C. Advanced Reinforced Concrete Design. (Formerly numbered Mechanics and Structures 267C.) Prerequisite: course 167B. Ultimate strength and seismic design considerations. Concrete mechanical properties. Columns: stability, biaxial bending. Slab design. Slab yield line theory. Footings. Joint design. Bracing systems: diaphragms, trusses, and shear walls. Braced and unbraced frame design for gravity, wind, and earthquake loads. Mr. Selna (Sp)

267E. Structural Loads and Safety for Civil Structures. (Formerly numbered Mechanics and Structures 267E.) Prerequisites: courses 167A or 167B or 167C, and M169A (may be taken concurrently). Concept of structural safety. Factors of safety and quantification of loads in building codes. Probability of failure and quantification of loads in probabilistic approaches to structural safety. Relationships between factor of safety and probability of failure. Mr. Hart (F, odd years)

267S. Advanced Steel Design. (Formerly numbered Mechanics and Structures 267S.) Prerequisite: course 167A. Working and ultimate load methods. Emphasis on seismic design. Brittle fracture, fatigue, and local buckling. Compression members. Element design for complex loading, including torsion. Braced and unbraced frames. Drift requirements. Steel frame design for gravity, wind, and earthquake loads. (W)

268A. Experimental Structural Analysis. (Formerly numbered Mechanics and Structures 268A.) Prerequisite: consent of instructor. Study of modern techniques in experimental mechanics, including dimensional analysis, measurement theory, and measurement techniques. Emphasis on techniques of modern optics (e.g., holography). Moire analysis, photoelasticity and speckle interferometry. Mr. Fourney (Sp)

M269A. Dynamics of Structures. (Same as Mechanical, Aerospace, and Nuclear Engineering M269A.) Prerequisite: course M169A. 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. Dong (F)

M269C. Introduction to Probabilistic Dynamics. (Same as Mechanical, Aerospace, and Nuclear Engineering M269C.) Prerequisite: course M169A. 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)

274J. Multiattribute Decision Making with Conflicting Objectives. (Formerly numbered Engineering Systems 274J.) Prerequisite: course 174A or Computer Science 274A or equivalent. The structuring of models for multiattribute decision problems. The theory of quantifying preferences over multiple objectives. Multiattribute utility theory. The structuring of models for conditional strategies under conflict situations. The theory of metagames and metarationality. Mr. Pearl, Mr. Rubinstein (W)

274K. Perspectives of Systems Representation. (Formerly numbered Engineering Systems 274K.) Prerequisite: course 274J 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)

281. Geohydrochemical Engineering. Prerequisite: graduate standing. Recommended: course 284B. The science and engineering underlying movement and fate of chemicals within the geospheres of the environment. Models for transport to, within, and from groundwater and their application. Mr. Liu, Mr. Perrine (Sp)

284A. Surface Water Hydrology. (Formerly numbered Engineering Systems 284A.) Prerequisite: course 184A or consent of instructor. In-depth study of the surface water components of the hydrologic cycle. Instantaneous unit hydrograph, dynamic wave equations, rainfall-runoff models using system investigation and physical hydrology. Stochastic hydrology: time-series analysis, Markovian streamflow generating models, and generation of multivariate synthetic streamflows. Applications. Mr. Dracup, Mr. Yeh (W)

284B. Groundwater Hydrology. (Formerly numbered Engineering Systems 284B.) Prerequisite: course 184A or consent of instructor. Theory of the 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. Seawater intrusion. Numerical methods. Applications. Mr. Dracup, Mr. Yeh (W)

284C. Water Resources Systems Engineering. (Formerly numbered Engineering Systems 284C.) Prerequisite: course 184B. Application of mathematical programming techniques to water resources systems. Topics include reservoir regulation, optimal timing, sequencing and sizing of water resources projects, and real-time conjunctive operations of ground water and surface water resource systems. Emphasis on the management of water quality. Mr. Dracup, Mr. Yeh (Sp)

284F. Selected Topics in Water Resources (2 units). (Formerly numbered Engineering Systems 284F.) Prerequisites: graduate standing, consent of instructor. Review of recent research and development in the management of water resources. Water and hydroelectric supply systems. Water quality management. Water law and institutions. Economic planning and optimization of water resources development. May be repeated once for credit. Mr. Dracup, Mr. Stenstrom (F)

284G. Engineering Economics of Water and Related Natural Resources. (Formerly numbered Engineering Systems 284G.) Recommended prerequisites: one or more courses from Economics 1, 2, 100, 101A, and 101B, or consent of instructor. Economic theory and applications in the management of water and related natural resources; application of price theory to water resource management, electric power supply, petroleum and natural gas management, and renewable resources; benefit-cost analysis with applications to water resources planning. Mr. Dracup (F)

284H. Mathematical Models for Water Quality Management. (Formerly numbered Engineering Systems 284H.) Prerequisite: course 184D or consent of instructor. Development of mathematical models for water quality control systems. Emphasis on numerical techniques to solve the nonlinear partial differential equations arising out of water quality and chemical engineering research. Mr. Stenstrom (W)

284J. Aquatic Chemistry. Lecture three hours; laboratory, two hours. Prerequisites: course 184D, Chemistry 11B, Mathematics 33B. The dilute aqueous solution chemistry of acid/base reactions, complex formation, precipitation and dissolution reactions, and oxidation/reduction reactions, as applied to water and wastewater treatment processes as well as natural and polluted waters. Laboratory experiment. Mr. Neethling (F)

284K. Advanced Water Quality Control Systems I. (Formerly numbered 284D.) Prerequisites: courses 184D and 284J (latter may be taken concurrently), or consent of instructor. Physical, chemical, and biological basis for design of water quality control systems. Properties of water, water quality standards, reactions and stoichiometry. Field trip. Mr. Neethling, Mr. Stenstrom (W)

284L. Advanced Water Quality Control Systems II. Prerequisite: course 284K. Physical, chemical, and biological basis for design of water quality control systems. Principles and design of conventional and advanced water and wastewater treatment systems. Field trip. Mr. Neethling, Mr. Stenstrom (Sp)

284M. Membrane Separations in Aquatic Systems. Prerequisite: course 284J. 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)

285A. Shear Strength of Soil and Stability of Slopes. (Formerly numbered Mechanics and Structures 285A.) Prerequisite: course 185A. 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)

285B. Foundation Engineering. (Formerly numbered Mechanics and Structures 285B.) Prerequisites: courses 185A, 285A. 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. Oner (W)

285C. Soil Dynamics. (Formerly numbered Mechanics and Structures 285C.) Prerequisites: courses 185A, 285A. Design of foundation for vibrating equipment. Strength and stress-strain relations for soil under cyclic loading conditions. Fundamentals of earthquakes as applied to seismic response of earth structures and foundations. Design of embankments, retaining walls, and foundations for earthquake loading. Mr. Lade (Sp)

285D. Earth Pressures and Earth Retaining Structures. (Formerly numbered Mechanics and Structures 285D.) Prerequisites: course 185A, graduate standing. The basic concepts of the theory of earth pressures behind retaining structures, with special application to the design of retaining walls, bulkheads, and excavation bracing; the effects of flexibility of bulkheads, creep in soils, and construction techniques. Mr. Lade (W)

285E. Seminar on Advanced Topics in Soil Mechanics. (Formerly numbered Mechanics and Structures 285E.) Prerequisites: graduate standing in engineering, consent of instructor. Topics may vary each quarter 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

285L. Advanced Soil Mechanics Laboratory. (Formerly numbered Mechanics and Structures 285L.) Lecture, one hour; laboratory, six hours. Prerequisites: courses 185A, 185B, 285A, 285B. 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)

286A. Earthquake Engineering. (Formerly numbered Mechanics and Structures 286A.) Prerequisite: course M169A or 265A or 285A or Mechanical, Aerospace, and Nuclear Engineering 256A. Engineering seismology: strong earthquake motion, microtremors, wave velocity and damping, induced vibrations, spectral analysis. Risk of earthquakes and fault breaks. Site evaluation. Structure-earth system response. Introduction to earthquake resistive design of buildings, bridges, and dams. Theory and field experiments. Mr. Selna (W)

286B. Structural Response to Ground Motions. (Formerly numbered Mechanics and Structures 286B.) Prerequisite: course M269A or consent of instructor. 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 evalution of contemporary design standards. Limitations due to idealizations. (Sp)

289AA-289ZZ. Seminar: Current Topics in Civil Engineering (2 to 4 units). (Formerly numbered Mechanics and Structures 289AA-289ZZ.) 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. Mr. Nelson (Sp)

M292. Asymptotic Methods. (Formerly numbered M292A.) (Same as Mathematics M274A.) Lecture, three hours. Prerequisites: Chemical Engineering M192A or Mechanical, Aerospace, and Nuclear Engineering M192A, Mathematics 132, or equivalent. The fundamental mathematics of asymptotic analysis, asymptotic expansions of Fourier integrals, method of stationary phase. Watson's lemma, method of steepest descent, uniform asymptotic expansions, elementary perturbation problems. Mr. Muki (F)

298. Seminar in 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. A teaching apprenticeship under the 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. Nelson (F,W,Sp)

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 the 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

3731D Boelter Hall, (213) 825-6396

Professors

Masanao Aoki, PH.D.
Algirdas A. Avizienis, Ph.D.
Daniel M. Berry, Ph.D.
Bertram Bussell, Ph.D.
David G. Cantor, 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. Ercegovac, Ph.D.
Gerald Estrin, Ph.D., *Chair*
Thelma Estrin, Ph.D., *in Residence, Assistant Dean*
Mario Gerla, Ph.D.
Sheila A. Greibach, Ph.D.
Walter J. Karplus, Ph.D.
Leonard Kleinrock, Ph.D.
Allen Klinger, Ph.D.
David F. Martin, Ph.D.
Lawrence P. McNamee, Ph.D.
Michel A. Melkanoff, Ph.D.
Richard R. Muntz, Ph.D.
Judea Pearl, Ph.D.
Gerald J. Popek, Ph.D.
Jacques J. Vidal, Ph.D.
Chand R. Viswanathan, Ph.D.
Thomas A. Rogers, Ph.D., *Emeritus*

Associate Professors

D. Stott Parker, Jr., Ph.D.
David A. Rennels, Ph.D.

Assistant Professors

Michael G. Dyer, Ph.D.
Margot Flowers, Ph.D.
Eliezer M. Gafni, Ph.D.
David R. Jefferson, Ph.D.
Richard E. Korf, Ph.D.
Josef Skrzypek, Ph.D.
Yuval Tamir, Ph.D.

Senior Lecturer

Leon Levine, M.S.

Adjunct Professors

Barry W. Boehm, Ph.D.
Edward L. Glaser, A.B.

Adjunct Associate Professor

Tomas Lang, Ph.D.

Adjunct Assistant Professor

Terrence E. Gray, Ph.D.

Visiting Lecturers

David G. Kay, M.S., J.D.
Thomas M. Simundich, Ph.D.
Vance C. Tyree, M.S., *Senior*

Scope and Objectives

Computer science is concerned with computer-related information processing, systems, and applications. 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, software systems, and scientific computing.

The undergraduate and graduate studies and research projects in computer science are supported by extensive computing resources. The Center for Experimental Computer Science (CECS) is comprised of nearly a dozen laboratories specializing in areas such as computer communications, VLSI design, 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 through the computer science and engineering program.

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. The Graduate School of Management and the Computer Science Department offer 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 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, 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 (188 minimum units required):

(1) Five core courses: Computer Science 11, 12, 13, 30, Electrical Engineering 103.

(2) Computer Science 130, 131, 141, 151A, 151B, 181, Electrical Engineering 111A, 115A, 115B, 115C; eight laboratory units (Computer Science 152A, 152B, 171L, and Electrical Engineering 100L); Civil Engineering 106A (satisfies the engineering economics requirement); Chemical Engineering M192A or Mechanical, Aerospace, and Nuclear Engineering M192A; one course in probability and statistics selected from Mathematics 152A, Electrical Engineering 131A, or Computer Science 112.

(3) Three elective courses from Computer Science 111 through 199 or Electrical Engineering 116, 121A, or 123A.

(4) English 3; Mathematics 31A, 31B, 32A, 32B, 33A, 33B, 61; Physics 8A/8AL, 8B/8BL, 8C/8CL, 8D/8DL; one life science course.

(5) Seven courses from the humanities, social sciences, and/or fine arts approved list (at least three must be upper division; at least three — with two upper division — must be in the same academic department or otherwise reflect coherence with respect to subject matter; and one must satisfy the engineering and science in society requirement).

(6) Three 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 quarter in graduate residence at UCLA. This requirement is satisfied by mastering the contents of six undergraduate courses in computer science or related subjects selected from the following two groups:

Group 1 (four required courses or equivalent): Computer Science 141, 151A, 151B, 181.

Group 2 (two required courses or equivalent): Computer Science 111, 112, 130 or 131 or 132, 161 or 163, 171 or 174, 172 or 173 or 270A.

Competence in any or all courses may be demonstrated in one of three ways:

(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, students must complete Computer Science 201 with a grade of Satisfactory.

M.B.A./M.S.-Computer Science

The Department of Computer Science in the School of Engineering and Applied Science and the 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 all application materials from the M.B.A. Admissions Office, Graduate School of Management.

Lower Division Courses

5. Computer Literacy and Appreciation. Lecture, three hours; laboratory, one hour. An introduction to computers for students without prior experience. Survey of computer technology, computer applications, and how machines represent and process information. The development, power, limitations, and social impact of modern computer systems. Mr. Bussell

10C. Introduction to Programming. (Formerly numbered Engineering 10C.) Lecture, four hours; recitation, two hours. Recommended for mathematics/computer science and engineering majors (emphasis on numerical problems). Open to graduate students on S/U grading basis only. Not open to students with credit for course 10F or former course 10S. Exposure to computer organization and capabilities. Basic principles of programming (using PASCAL as the example language): algorithmic, procedural problem solving. Program design and development. Control structures and data structures. Human factors in programming and program design.
Mr. Levine (F,W,Sp)

10F. Introduction to Programming/FORTRAN. (Formerly numbered Engineering 10F.) Lecture, four hours; recitation, two hours. Recommended for Chemical Engineering, Electrical Engineering, and Mechanical, Aerospace, and Nuclear Engineering Department majors (emphasis on numerical problems). Open to graduate students on S/U grading basis only. Not open to students with credit for course 10C or former course 10S. Description and use of FORTRAN programming language. Selected topics in programming techniques. Programming and running of several numeric problems.

11. Introduction to Computer Science I. Lecture, four hours; recitation, two hours. Limited to computer science and engineering majors. Open to graduate students on S/U grading basis only. Not open to students with credit for course 10C, 10F, former course 10S, or Program in Computing 10. Human factors in programming and program design. Exposure to computer organization and capabilities, data representation, professional ethics. Principles of programming (using PASCAL as the example language): algorithm design and procedural abstraction. Program design and development. Control structures and data structures. Mr. Martin (F)

12. Introduction to Computer Science II. Lecture, four hours; recitation, two hours. Prerequisite: course 11 or consent of instructor. Limited to computer science and engineering majors. Open to graduate students on S/U grading basis only. Internal data structures (e.g., lists, trees, queues) and associated algorithms, described by function and implementation, with examples in a very high-level language and an algorithmic language respectively (e.g., LISP and C). Sorting, searching, algorithm analysis, models of computation. Mr. Martin (W)

13. Introduction to Computer Science III. Lecture, four hours; recitation, two hours. Prerequisite: course 12 or consent of instructor. Limited to computer science and engineering majors. Open to graduate students on S/U grading basis only. Design and development of programs solving problems of intermediate complexity drawn from various disciplines, using high-level languages such as LISP and C. Software engineering, data abstraction, human-machine interface, external data structures. Survey of current topics in computer science. Mr. Martin (Sp)

30. Introduction to Computer Operating Systems. Lecture, four hours; laboratory, two hours. Prerequisite: course 20. Open to graduate students on S/U grading basis only. Introductory course on functions, design principles, and use of modern computer systems. Overview of batch and time-sharing systems. Functional description of assemblers, compilers, linkage editors, loaders. Job control language, overlays, file structures, buffering, protection. Assignments include problems on the computer and the design of simple O/S functions.
Mr. McNamee, Mr. Muntz (F,Sp)

99. Individual Programming Projects (2 to 4 units). Prerequisite: course 10C or consent of instructor. Intended for students wishing to learn individually new programming languages and for students wishing to make up deficiencies so as to bring them to the level of course 20. Students design, check-out, and run programs in various programming languages. Mr. Melkanoff

Upper Division Courses

111. Systems Programming. Lecture, four hours; laboratory, two hours. Prerequisites: courses 30, 141. Introduction to the design and performance evaluations of modern operating systems. Mapping and binding of addresses. The organization of multiprogramming and multiprocessing systems; interrupts, process model, and interlocks. Resource allocation models and the problem of deadlocks. Job control and system management.
Mr. Gerla, Mr. Muntz (F,Sp)

112. Computer System Modeling Fundamentals. Prerequisite: upper division standing. Basic tools necessary for performance evaluation and design of distributed computer systems, including such topics as sets, combinatorics, generating functions, probability theory, transforms, Markov chains, baby queueing theory, counting and graphs, network flow theory. Presentation of this set of tools in a fashion that is rich with examples from the computer systems field.
Mr. Kleinrock (F,Sp)

130. Software Engineering. Lecture, four hours; laboratory, two hours. Prerequisite: course 20. Structured programming, program proving, modularity, abstract data types, composite design, program testing, team programming. Mr. Berry (Sp)

131. Programming Languages. Lecture, four hours; recitation, two hours. Prerequisite: course 13 or former course 20. Study, comparison, and evaluation of programming languages, in particular ALGOL 60, ALGOL 68, PL/1, FORTRAN, and COBOL, the compiled languages which serve as the bases for most commercially available compiled languages in use today. Additional topics as set by instructor.
Mr. Berry (F,W,Sp)

132. Compiler Construction. Lecture, four hours; recitation, two hours. Prerequisites: courses 131, 141, 181. Compiler structure; lexical and syntactic analysis; semantic analysis and code generation; theory of parsing. Mr. Martin (Sp)

141. Basic Methods of Data Organization. Lecture, four hours; recitation, two hours. Prerequisite: course 13 or former course 20. 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. Topics include sorting-searching, algorithmic analysis, graph theory, concepts underlying file management. Mr. Gerla, Mr. Klinger (F,W,Sp)

151A. Computer Architecture I. Lecture, four hours; recitation, two hours. Prerequisites: course 10C or 11, Physics 8C. Introduction to digital systems. Specification and implementation of combinational and sequential systems. SSI/MSI/LSI standard modules and their use in digital systems. Specification and implementation of algorithmic systems. Modules for the data and control sections. Hardwired and microprogrammed approaches. Arithmetic algorithms and their implementation.
Mr. Ercegovac, Mr. Rennels (F,W,Sp)

151B. Computer System Architecture II (Intermediate). Lecture, four hours; recitation, two hours. Prerequisite: course 151A. Corequisite for mathematics/computer science majors and engineering undergraduates specializing in computer science and engineering: course 152B. Formal description of machine organization. Effects on machine organization of instruction sets and formats; addressing structures; memory organization and management; control sequence generator; I/O processing and interrupts; reliability aspects.
Mr. Bussell, Mr. Ercegovac (F,W,Sp)

151C. Design of Digital Systems. Prerequisites: courses 151A, 151B, 152A. Design of complex digital systems using hierarchial 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, Mr. Lang (Sp)

152A. Introductory Digital Circuits Laboratory (2 units). Prerequisite: course 10C. Corequisite: course 151A. Familiarization with design and interconnection of logic circuits and networks through implementation and debugging procedures, including experience with printed circuit design.
Mr. Bussell, Mr. Rennels (F,W,Sp)

152B. Digital Systems Laboratory (2 units). Corequisite: course 151B. A computer-based laboratory which probes computer architecture through construction simulation and measurement of digital subsystems. Mr. Bussell, Mr. Rennels (F,W,Sp)

161. Fundamentals of Artificial Intelligence. Lecture, four hours; laboratory, two hours. Prerequisites: courses 130 or 131, and 141, consent of instructor. Introduction to artificial intelligence. Knowledge representation, functional and logic programming, machine learning, survey of topics in robot microworlds, vision, automatic programming, expert systems, and cognitive modeling. Mr. Dyer, Ms. Flowers (Sp)

163. Introduction to Natural Language Processing. Lecture, four hours; laboratory, two hours. Prerequisites: courses 130 or 131, and 141, 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, Ms. Flowers (W)

168. Computer Vision. Prerequisites: courses 161, 170 or Electrical Engineering 102, 171, 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. The 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 the feature descriptions.
Mr. Skrzypek (Sp)

168L. Computer Vision Laboratory (2 to 4 units). Laboratory, four 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. Skrzypek (W)

170. Basic Methodologies for Computer Modeling and Analysis of Dynamic Systems. Prerequisites: Mathematics 33A, 33B. An introduction to computer-oriented techniques for modeling and analysis of systems which evolve with time, with emphasis on examples from social and life sciences. Linearity, impulse responses, stability, state variables, algorithms for filtering and control. Mr. Aoki (W)

C170L. Biocybernetics Research Laboratory (2 to 4 units). Lecture, one or two hours; laboratory, two to four hours; recitation, one to two hours. Prerequisites: course M196B, consent of instructor. Interdisciplinary experimental laboratory techniques. Care, use, and design of laboratory instrumentation. Specialized research hardware, software, and computers. Laboratory automation. Comprehensive experiment design, including simulation. Radioactive isotope use and safety. Experimental animals, controls, and kinetic stimulus-response experiments. Concurrently scheduled with course C270L. Mr. DiStefano (F,W,Sp)

171. Real-Time Computer Systems. Prerequisite: senior standing or consent of instructor. A survey of fundamentals, with emphasis on hardware and systems concepts. Adapting digital computers to interfaces, including multiprogramming, interrupt, and time-sharing considerations. Digital communication, remote consoles, sampling, quantizing, multiplexing, analog-digital conversation, and data reconstruction.
Mr. Karplus, Mr. Levine (F,W,Sp)

171L. Real-Time Systems Laboratory (2 to 4 units). Laboratory, four to eight hours. Prerequisites: senior standing, consent of instructor. Recommended: courses 171 (may be taken concurrently), 152A. 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 (F,W,Sp)

172. Simulation and Models. Prerequisite: course 20. Model formulation and programming for discrete event systems in simulation languages (e.g., GPSS, SIMSCRIPT). The simulation data base and considerations for language development. Statistical considerations: design of experiments, random number generation, analysis of model results. Computer exercises. Mr. Karplus, Mr. McNamee (F)

173. Random Data Analysis and Measurement Procedures. Prerequisite: Electrical Engineering 102. 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, three hours; laboratory, one hour. Prerequisites: courses 131, 141, and 171, or consent of instructor. Hardware and software elements of computer graphics systems, including problems of intelligent terminals, communications, and graphics languages. Application areas and cost effective uses of interactive graphics. Design and development of interactive graphics programs to solve representative problems in various application areas. Mr. Vidal (F,Sp)

181. Introduction to Formal Languages and Automata Theory. Lecture, four hours; recitation, two hours. Prerequisite: senior standing or consent of instructor. Grammars, automata, and languages. Finite-state languages and finite-state automata. Context-free languages and pushdown store automata. Unrestricted rewriting system (i.e., languages and Turing machines). Introduction to computability and decision problems. Ms. Greibach (F,W,Sp)

183. Discrete Systems and Automata. Prerequisite: two quarters of lower division mathematics or comparable experience with mathematical ideas, such as in linguistics or basic courses in logic or computer programming. An introductory course emphasizing finite-state systems: graphs, machines, languages, regular expressions, coding, computing; memory, system identification, diagnosis; design considerations. Mr. Carlyle

196A. Introduction to Bioengineering and Cybernetics (2 units). (Formerly numbered Engineering 196A.) Prerequisite: calculus. Strongly recommended for students with a 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 (F)

M196B. Modeling and Simulation of Biological Systems. (Formerly numbered Engineering M196B.) (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 science and medical students are encouraged to enroll.
Mr. DiStefano (F,Sp)

199. Special Studies (2 to 8 units). Prerequisites: upper division standing, consent of instructor. Individual investigation of a 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. Computer Science Seminar (2 units). Prerequisite: graduate standing in computer science. Lectures on current research topics in computer science. May be repeated for credit. 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

212A. Queueing Systems Theory. Prerequisites: course 112 and Electrical Engineering 131A, or consent of instructor. Resource sharing issues and the theory of queueing (waiting-line) systems. Review of Markov chains and baby queueing theory. Method of stages. $M/E_r/1$. $E_r/M/1$. Bulk arrival and bulk service systems. Series-parallel stages. Fundamentals of open and closed queueing networks. Intermediate queueing theory: M/G/1; G/M/m. Collective marks. Advanced queueing theory: G/G/1; Lindley's 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 (W)

214. Data Transmission in Computer Communications. Prerequisites: course 112, graduate standing in computer science. Discrete data streams, formats, rates, transductions; digitial 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; the 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 (F,Sp)

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 (W,Sp)

218A. Network Protocol and Processor Design. Prerequisite: course 112. Recommended: course 215. Computer network architecture review. Protocol levels: subnet, network access, transport, application. Protocol specification and verification. Network processor architectures (single processor; multiprocessor). Task partitioning. Performance models (throughout, delay, reliability). 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 the 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. Mr. Melkanoff (W)

M222. Control and Coordination in Economics. (Formerly numbered System Science M222G.) (Same as Economics M240.) Prerequisites: graduate standing in economics or engineering, 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

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. Mr. Melkanoff (Sp)

231B. Advanced Topics in Computer Language Design. Prerequisites: courses 132, 141, 181, 232A, 232B. Treatment of current topics in computer language, including design goals of modern languages, levels of abstraction, methodologies for standardization, and proposals for new problem-oriented and extensible languages. Enrollment limited to allow individual application of language design principles.
(W)

232A. Operational Semantics of Programming Languages. Prerequisites: courses 131, 181 (may be taken concurrently). Interpreter models of programming language semantics: information structure models, Vienna definition language, lambda calculus, LISP definition, interpreter equivalence and correctness. Mr. Berry (F)

232B. Semantics of Programming Languages. Prerequisite: course 181 or equivalent or consent of instructor. Syntax-directed semantics of context-free languages. Knuthian semantic systems (K-systems) and their mathematical formulation. K-system formulation of programming language semantics; translational and denotational semantics. Properties of K-systems; equivalence of K-systems. Applications of current research interest. Mr. Martin (F)

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 (Sp)

234C. High-Level Language Computer Architecture. Prerequisites: courses 131, and 232A or 232B. A study of machine architectures to facilitate direct or nearly direct execution of high-level languages: ALGOL-like machines, including Burroughs B6700, microprogramming and microprogrammable machines, measurements and their use in architecture design. Mr. Berry

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 the instructor has developed special proficiency as a consequence of research interests. May be repeated for credit with topic change.

241AL. Data Management Systems (6 units). (Formerly numbered 241A.) Lecture, four hours; laboratory, two hours. Prerequisites: courses 131, 141, or equivalent. File management in programming languages, storage devices, and operating systems. Secondary index organizations. Data base systems architecture, design, and models (network, hierarchic, and relational). Logical and physical structures. Query languages. Commercial data base systems. Data base design, performance, security, and integrity. Mr. Cardenas, Mr. Muntz, Mr. Popek (F,W,Sp)

241B. Data Base, Software, and Information Systems. Prerequisites: course 131 or Management 113B, course 241AL, or equivalent. Data base systems technology. Application program development technology. Information system development cycle and methodology. Systems analysis. Feasibility and cost/effectiveness studies. Software architecture, management, costing. Automated program and data base generation. Problem statement languages. Various topics at instructor's discretion, emphasizing data base technology. Mr. Cardenas (W)

242A. Privacy and Security in Computer Information Systems. Prerequisite: course 111 or consent of instructor. Analysis of the technical difficulties of producing secure computer information systems that provide guaranteed controlled sharing, with emphasis on software models and design. Examination and critique of current systems and practices. Possible certifiability of such systems. Relevant social issues.
Mr. Popek

243A. Relational Data Bases. Prerequisites: courses 131, 141. The relational model of data: definition and operations; relational languages. Relational data bases: experimental and commercial; design methodology. Mr. Parker (W)

243B. Abstract Data Types and Program Specification. Prerequisites: courses 141, 181. The 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 the 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. Prerequisites: courses 111, 151A, 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. Ercegovac, Mr. Rennels (F,W)

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 (W)

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 (W)

253B. Advanced Topics in Fault-Tolerant Computing. Prerequisite: course 253A. Analysis and discussion of the modeling, design, and evaluation of fault-tolerant computer systems. Emphasis on current research results and new systems in the stages of design and development. May be repeated for credit with topic change. Mr. Avizienis, Mr. Rennels (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 (F)

255A. Distributed Processing and Distributed Data Base System. (Formerly numbered 255B.) Prerequisite: course 241AL or 251A. Interprocess communications, bus structures. Task partitioning and allocation, precedence relationship, response time models, microprocessor-based distributed processing system, system reconfiguration, error recovery. File allocation, directory design, deadlock, synchronization, commit protocols, query optimization, data translation. Examples, design, and trade-offs.
Mr. Chu (W)

256A. Interactive Computer Graphics. Prerequisite: course 174 or equivalent. Current topics in interactive computer graphics system design, development, and applications. Mr. Bussell (Sp)

257A. Computer System Design: Comparative Architecture and Synthesis Methods. Prerequisite: course 252A. Advanced topics in computer system architecture. Important properties of computer systems and methods for modeling, evaluating, and synthesizing them. Mr. Estrin (W)

M258A. LSI in Computer System Design. (Formerly numbered M258A-M258B-M258C.) (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. Avizienis, Mr. Viswanathan (F,W)

M258B-M258C. LSI in Computer System Design. (Formerly numbered M258A-M258B-M258C.) (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. Avizienis, Mr. Viswanathan
(W, M258B; Sp, M258C)

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 the instructor has developed special proficiency as a consequence of research interests. Students report on selected topics. May be repeated for credit with topic change.

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, Ms. Flowers (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 remindings and thematic abstraction.
Mr. Dyer, Ms. Flowers (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, Ms. Flowers (F,W)

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, KRL, ACTORS, etc.) and artificial intelligence features (e.g., nonmonotonic logics, data-dependencies for truth maintenance, meta-rules, semantic networks, frame-based systems). Mr. Dyer, Ms. Flowers (W or Sp)

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, Ms. Flowers (W or Sp)

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 the 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,Sp)

270B. Analytical and Computational Methods for Modeling and Optimization of Dynamic Systems. Prerequisite: course 170 or equivalent. Recommended: intermediate-level knowledge of linear algebra. Development of analytical and computer-aided analysis and design tools for modeling, decision analysis, and optimization of dynamic systems. Linear and nonlinear system methods, model selection and simplification, sensitivity analysis, least squares and Kalman filtering, and optimal control algorithms.
Mr. Aoki, Mr. DiStefano (W)

M270C. Modeling Methodology for Biomedical Systems. (Formerly numbered M296A.) (Same as Medicine M270C.) Prerequisite: course 270B or Electrical Engineering 142 or Mathematics 115A or Mechanical, Aerospace, and Nuclear Engineering 171C or equivalent. Foundations of multicompartmental, noncompartmental, and dynamic system modeling methods. Special emphasis on their applications and limitations in the biomedical sciences and other limited data environments. Models for experiment design, data analysis, basic studies of mechanism, and control (therapy) of biomedical processes. Model parameter estimation algorithms. Mr. DiStefano (F)

M270D. Optimal Experiment Design and Control for Biological and Other Dynamic Systems. (Formerly numbered M296B.) (Same as Biomathematics M270 and Medicine M270D.) Prerequisites: courses 270B and M270C, or consent of instructor. Theory and algorithms for designing optimal experiments for quantifying or optimal inputs for controlling dynamic systems in engineering and life sciences. Optimal sampling schedules for parameter estimation. Control optimization and variations for designing optimal test-inputs. Algorithms, software, and applications in medicine and engineering. Mr. DiStefano (W)

M270E. Advanced Topics and Research in Biocybernetics. (Formerly numbered M296C.) (Same as Medicine M270E.) Prerequisite: course M270C or consent of instructor. Recommended: course M270D. Research techniques and experience on special topics involving models, modeling methods, or experiments in the biological and medical sciences. Review and critique of the literature. Research problem formulation. Solution methods. Individual student projects. M.S. and Ph.D. thesis preparation.
Mr. DiStefano (Sp)

C270L. Biocybernetics Research Laboratory (2 to 4 units). Lecture, one to two hours; laboratory, four to eight hours; recitation, one to two hours. Prerequisites: course M196B, consent of instructor. Interdisciplinary experimental laboratory techniques. Care, use, and design of laboratory instrumentation. Specialized research hardware, software, and computers. Laboratory automation. Comprehensive experiment design, including simulation. Radioactive isotope use and safety. Experimental animals, controls, and kinetic stimulus-response experiments. Concurrently scheduled with course C170L.
Mr. DiStefano (F,W,Sp)

271A. Computer Methodology: Continuous Systems Simulation. Prerequisites: course 171, Electrical Engineering 103. The organization, operation, and areas of application of analog-digital computer systems. Error analysis, numerical analysis aspects, digital simulation languages for continuous systems characterized by ordinary differential equations.
Mr. Karplus, Mr. Levine (W)

271B. Computer Methodology: Distributed Parameter Systems. Prerequisite: Electrical Engineering 103. A survey of the mathematical formulation and computer solution of engineering field problems governed by partial differential equations. Emphasis on digital simulation methods, including finite difference approximations, Monte Carlo methods, and the use of modern problem-oriented languages.
Mr. Karplus, Mr. Vidal (F)

271C. Seminar in Advanced Simulation Methods (2 units). Prerequisite: course 271A or equivalent. Discussion of advanced topics in the 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 quarter. May be repeated for credit. S/U grading. Mr. Karplus (F,W,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 (W)

274A. Problem Solving and Decision Making. (Formerly numbered M274A.) Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 193A or equivalent. Formal models of problem structures. Heuristic techniques for mechanized problem solving. Foundations of quantitative coding of qualitative information. Theories of subjective probabilities and utility. Relation between artificial intelligence and decision analysis. Information processing models of human decision making and problem-solving behavior.
Mr. Pearl (F)

274B. Knowledge-Based Systems. (Formerly numbered M274B.) Prerequisite: course 274A or 277A or consent of instructor. 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 (W)

274C. Computer Methods of Data Analysis and Model Formation. (Formerly numbered M274C.) Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 193A or Electrical Engineering 131A or equivalent or consent of instructor. Techniques of using computers to interpret, summarize, and form theories of empirical observations. Mathematical analyses of trade-offs between the computational complexity, storage requirements, and precision of computerized models. Mr. Pearl

274Z. Current Topics in Cognitive Systems. (Formerly numbered M274Z.) Prerequisites: consent of instructor, additional prerequisites for each offering as announced in advance by the 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)

275A. Information Processes in Nervous Systems. Prerequisite: consent of instructor. Conceptual discussion of acquisition and transfer of information in the nervous system and of the role of computers in the analysis and interpretation of neurophysiological data. Mr. Vidal (W)

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

277A. Heuristic Programming and Artificial Intelligence. Prerequisite: course 131 or 181 or consent of instructor. Principles underlying the use of computers to perform tasks generally agreed to require some intelligence. Development of an understanding of current research regarding the possibilities and limitations of existing experiments in automating intelligent behavior. Mr. Klinger, Mr. Pearl (F)

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 the instructor has developed special proficiency as a consequence of research interests. Students report on selected topics. May be repeated for credit with topic change.

280A-280ZZ. Algorithms. Prerequisites: consent of instructor, additional prerequisites for each offering as announced in advance by the department. Selections from design, analysis, optimization, and implementation of algorithms; computational complexity and the general theory of algorithms; algorithms for particular application areas. Subtitles of some current sections: Principles of Design and Analysis (280A); Graphs and Networks (280G). May be repeated for credit with consent of instructor and with topic change. Ms. Greibach (Sp)

281A. Computability and Complexity. Prerequisite: course 181 or compatible background. Concepts fundamental to the 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 (F)

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 the 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 (F)

288S. Seminar in 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 the instructor has developed special proficiency as a consequence of research interests. Students report on selected topics.

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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. Avizienis (F,W,Sp)

497D-497E. Field Projects in Computer Science. Prerequisite: consent of instructor. Students are divided into teams led by the 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 the 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. Petition forms to request enrollment may be obtained from the Assistant Dean, Graduate Studies. 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. Petition forms to request enrollment may be obtained from the Assistant Dean, Graduate Studies. S/U grading.

597C. Preparation for Ph.D. Oral Qualifying Examination (2 to 16 units). Prerequisites: graduate standing in computer science, consent of instructor. Petition forms to request enrollment may be obtained from the Assistant Dean, Graduate Studies. 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. Petition forms to request enrollment may be obtained from the Assistant Dean, Graduate Studies. 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 the 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

7732 Boelter Hall, (213) 825-2647

Professors

Nicolaos G. Alexopoulos, Ph.D.
Frederick G. Allen, Ph.D., *Chair*
A.V. Balakrishnan, Ph.D.
Francis F. Chen, Ph.D.
Robert S. Elliott, Ph.D.
Harold R. Fetterman, Ph.D.
A. Theodore Forrester, Ph.D.
Stephen E. Jacobsen, Ph.D.
Nhan Levan, Ph.D.
Neville C. Luhmann, Jr., Ph.D.
Jimmy K. Omura, Ph.D.
H. J. Orchard, M.Sc.
Izhak Rubin, Ph.D.
Frederick W. Schott, Ph.D.
Oscar M. Stafsudd, Jr., Ph.D.
Gabor C. Temes, Ph.D.
Chand R. Viswanathan, Ph.D.
Kang-Lung Wang, Ph.D.
Paul K.C. Wang, Ph.D.
Donald M. Wiberg, Ph.D.
Alan N. Willson, Jr., Ph.D.
Kung Yao, Ph.D., *Assistant Dean*
Cavour W. Yeh, Ph.D.
Louis L. Grandi, M.S., *Emeritus*
William D. Hershberger, Ph.D., *Emeritus*
Ellis F. King, M.S., *Emeritus*

Associate Professors

Kenneth W. Martin, Ph.D.
Richard E. Mortensen, Ph.D.
Dee-Son Pan, Ph.D.
Jack Willis, B.Sc.

Assistant Professors

Asad A. Abidi, Ph.D.
Richard L. Baker, Ph.D.
Henry Samueli, Ph.D.
Denham S. Ward, M.D., Ph.D.

Adjunct and Visiting Professors
Ezio Biglieri, Dr.Eng., *Visiting*
Paul T. Greiling, Ph.D., *Adjunct*
William A. Peebles, Ph.D., *Adjunct*

Adjunct Associate Professors
James B. Forsythe, Ph.D.
Kenneth W. Iliff, Ph.D.
Chandrashekhar J. Joshi, Ph.D.
Siegfried G. Knorr, Ph.D.
George J. Ruzicka, Ph.D.
Joel N. Schulman, Ph.D.

Adjunct Assistant Professor
Mohammed Hamami, Ph.D.

Visiting Lecturers
Hassan Babaie, Ph.D.
Dariush Divsalar, Ph.D.
Paul T. Greiling, Ph.D.
Richard J. Hillestad, Ph.D.
Ziauddin Khawza, Ph.D.
Eugene H. Kopp, Ph.D.
Simon M. Law, M.S.
Donald C. Mayer, Ph.D.
Farid Mesghali, Ph.D.
Bernard Sklar, Ph.D
Vance C. Tyree, M.S., *Senior*
Mostafa R. Yazdy, Ph.D.
Mehrdad Zomorrodi, Ph.D.

Scope and Objectives

The Electrical Engineering Department emphasizes teaching and research in a variety of fields ranging from telecommunications and fiber optics to solid-state devices, circuits, materials growth, quantum electronics, antenna design, electromagnetics, digital systems, plasma diagnostics, and millimeter wave technology. In each of these fields, the department has state-of-the-art research programs exploring exciting new developments and is organized into nine major fields of study. 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, microwaves and millimeter waves, fiber optics, lasers and quantum electronics, and applied plasma physics. The department is also associated with the Center for High-Frequency and High-Speed Electronics, the Center for Plasma Physics and Fusion Engineering, and the Crump Institute for Medical Engineering, three research centers at UCLA.

Bachelor of Science in Electrical Engineering

The electrical engineering curriculum gives an excellent background for either graduate study or employment. The two main objectives are (1) to provide a deep and fundamental education in electrical engineering as well as in basic sciences and mathematics and (2) to provide specialized education in one branch of the electrical engineering field so that the student develops expertise in that branch.

The Major

Course requirements are as follows (188 minimum units required):

(1) Six core courses: Electrical Engineering 101, 102, 103, Materials Science and Engineering 14, Mechanical, Aerospace, and Nuclear Engineering 102, and one course from Civil Engineering 108, Mechanical, Aerospace, and Nuclear Engineering 103, M105A (or Chemical Engineering M105A).

(2) Electrical Engineering 111A, 111B, 115A, 121A, 161, and one course from 112, 115B, 141, 162A, 163A; four two-unit courses selected from the laboratory courses offered by the Electrical Engineering Department, Computer Science 152B and, by petition only, Electrical Engineering 199; Civil Engineering 106A (satisfies the engineering economics requirement); Mechanical, Aerospace, and Nuclear Engineering 191A or Mathematics 132 (satisfies the mathematics requirement).

(3) Any six major field elective courses (24 units) selected from those offered by the Electrical Engineering Department. With approval of the adviser, up to three may be selected from courses related to electrical engineering in the Computer Science Department.

(4) English 3; Chemistry 11A, 11B/11BL; Computer Science 10C or 10F; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A, 8B/8BL, 8C/8CL, 8D/8DL; one life science elective course.

(5) Six courses from the humanities, social sciences, and/or fine arts approved list (at least three must be upper division; at least three — with two upper division — must be in the same academic department or otherwise reflect coherence with respect to subject matter; and one must satisfy the engineering and science in society requirement).

(6) Three free elective courses from any department, selected by the student in consultation with the adviser to supplement and strengthen the major field electives.

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.

Upper Division Courses

100. Electrical and Electronic Circuits. (Formerly numbered Engineering 100.) Lecture, four hours; recitation, one hour. Prerequisites: Mathematics 31A, 31B, 32A, 33A, 33B, Physics 8C. Electrical quantities, circuit principles, signal wave-forms, AC circuits, semiconductor devices, small signal models, amplifiers, electrical and electronic instruments.
Mr. Luhmann (F,W,Sp)

100L. Circuit Analysis Laboratory (2 units). (Formerly numbered Engineering 100L.) Laboratory, four hours. Prerequisite or corequisite: course 100 or 111A. Experiments with circuits containing linear and nonlinear devices; transient and steady state behavior of circuits. Mr. Luhmann (F,W,Sp)

101. Engineering Electromagnetics. (Formerly numbered 100B.) Lecture, four hours; recitation, one hour. Prerequisites: Physics 8C, Mathematics 32A and 32B, or 33A and 33B. Electromagnetic field concepts; Maxwell's equations; static and quasi-static fields; field energy; energy flow and the Poynting vector; electromechanical interactions; waves in unbounded media and on two-wire transmission lines; reflection and refraction; lossy media; skin effect; analogs to electromagnetic fields.
Mr. Alexopoulos (F,W,Sp)

102. Systems and Signals. (Formerly numbered 121C.) Lecture, three hours; recitation, two hours. Prerequisites: Mathematics 32A, 32B, 33A and 33B or 31C and 32C, Physics 8A, 8B, 8C. Recommended: course 100 or Mechanical, Aerospace, and Nuclear Engineering 102 or Physics 8D. Introductory course with illustrations from physical and life sciences. Input-output descriptions of systems, linearity; impulse and frequency responses, Fourier methods; transforms, analysis of signals. Introduction to digital filtering and fast Fourier transform. Computational aspects of system modeling and identification.
Mr. Levan (F,W,Sp)

103. Applied Numerical Computing. (Formerly numbered 124A.) Lecture, three hours; recitation, two hours. Prerequisites: Computer Science 10C, Mathematics 33A, 33B, or equivalent. An introduction to numerical computing techniques: matrix computations, root finding, solutions of initial and boundary value problems of ordinary differential equations, interpolation and approximation.
Mr. Jacobsen, Mr. Wiberg (F,W,Sp)

111A. Basic Circuit Theory I. (Formerly numbered 110A.) Lecture, four hours; recitation, one hour. Prerequisites: Physics 8C, 8D (may be taken concurrently). The zero-input, zero-state, transient, steady state, and complete response of first-order and second-order circuits. Linear time-invariant networks: step response, impulse response, convolution integral. Sinusoidal steady state analysis. Coupling elements and coupled circuits. The Laplace transform.
Mr. Willson (F,W,Sp)

111B. Basic Circuit Theory II. (Formerly numbered 110B.) Lecture, four hours; recitation, one hour. Prerequisite: course 111A. Elementary graph theory, general methods of analyzing electric circuits. Introduction to state equations, natural frequencies. Properties of network functions. Network theorems. Methods of characterizing two-port networks.
Mr. Orchard (F,W,Sp)

112. Passive Network Synthesis. (Formerly numbered 110C.) Lecture, four hours; recitation, one hour. Prerequisite: course 111B or equivalent. Properties of positive real functions and tests for positive realness. Synthesis of one- and two-port RLC and two-element kind networks. Mr. Temes (F)

113. Digital Signal Processing. (Formerly numbered 210E.) Prerequisite: course 111B. Relationship between continuous-time and discrete-time signals. The z-transform. The discrete Fourier transform. The fast Fourier transform. State equations for discrete-time systems. Network structures for digital filtering. Introduction to digital filter design techniques. Mr. Temes, Mr. Willson (F)

115A. Electronics I. (Formerly numbered 116A.) Lecture, four hours; recitation, one hour. Prerequisite: course 111A. 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, Mr. Green (F,W,Sp)

115AL. Electronics I Laboratory (2 units). (Formerly numbered 116L.) Prerequisite: course 100L. 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. Martin (F,W,Sp)

115B. Electronics II. (Formerly numbered 116B.) Lecture, four hours; recitation, one hour. 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. Martin (F,W,Sp)

115BL. Electronics II Laboratory (2 units). (Formerly numbered 116M.) Laboratory, four 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. Willis (F,W,Sp)

115C. Digital Integrated Circuits. (Formerly numbered 116C.) Lecture, four hours; recitation, one hour. Prerequisites: courses 115A, 115B, Computer Science 151A. Modern logic families (TTL, I^2L, ECL, NMOS, CMOS), IC layout, MSI digital circuits (flip-flops, registers, counters, PLAs, etc.), digital machine realization techniques, VLSI memories, A/Ds, VLSI systems (time permitting). Laboratory experiments in switching circuits. Mr. Martin (F,W,Sp)

115CL. Pulse and Digital Methods Laboratory (2 units). (Formerly numbered 116N.) Laboratory, four hours. Corequisite: course 115C. Digital circuits laboratory, with three different logic families characterized (I^2L, TTL, and CMOS). Use of synchronous machine techniques for building simple circuits, culminating in a 4-bit successive approximation A/D converter.
Mr. Martin (F,Sp)

115D. Applied Electronic Circuits. (Formerly numbered 116G.) Prerequisites: courses 115B, 115C, 118. Applications of distributed circuits. Operational amplifier applications and limitations. Power amplifiers. Feedback and stability. Precision analog circuits.
Mr. Abidi (Sp)

115E. Design Laboratory in Microcomputer Hardware and Interfacing. (Formerly numbered 116U.) Lecture, two hours; laboratory, six hours. Prerequisites: Computer Science 151B, 152B. A second-level design laboratory in microcomputer hardware and interfacing. Address, data, and control busses. I/O devices including serial interfaces, parallel interfaces, and timers. Assembly language programming. Advanced concepts such as interrupts, DMA, interprocessor communication, and industrial control applications in major design projects where practical digital systems are designed and realized.
Mr. Martin (Sp)

116. Communication Circuits. (Formerly numbered 116D.) Lecture, four hours; recitation, one hour. Prerequisites: courses 102, 115B. Signals and spectra. Signal distortion in transmission filters, transmission bandwidth requirements. Random signals and noise, linear modulation, exponential modulation circuits and characteristics. Commercial communication systems. Mr. Willis (F)

117. Introduction to Power Electronics. (Formerly numbered 116F.) Lecture, four hours; recitation, one hour. Prerequisite: course 115A. Electrical and thermal characteristics of power semiconductor devices, including diodes, transistors, and thyristors, and their application to power conditioning, conversion, and control. Emphasis on device limitations and design considerations. Examples from power amplifiers (switched and linear), inverters, and DC and AC motor drives. Mr. Schott (F)

118. Integrated Circuit Components and Design. (Formerly numbered 116E.) Lecture, four hours; recitation, one hour. Prerequisites: courses 115B, 121A. 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. Martin, Mr. K. Wang (W)

121A. Principles of Design of Semiconductor Devices. (Formerly numbered 115D.) Lecture, four hours; recitation, one hour. Prerequisite: senior standing in engineering. Semiconductor technology, Schottky barrier, p-n junction, MOS capacitance, transistor fundamentals, drift transistor, high-frequency properties, field effect transistors, integrated electronics, applications and design of devices.
Mr. Viswanathan, Mr. K. Wang (F,W,Sp)

122AL. Semiconductor Devices Laboratory (2 units). (Formerly numbered 115F.) Laboratory, four hours. Prerequisite: course 121A. Design, fabrication, and characterization of junction, field effect, and other semiconductor devices. In particular students perform various processing tasks such as wafer preparation, oxidation, impurity diffusion, metallization, sintering, and photolithography.
Mr. K. Wang (F,Sp)

122BL. Solid-State Electronics Laboratory (2 units). (Formerly numbered 115E.) Laboratory, four hours. Prerequisite: course 124. Experimental measurement of electronic, magnetic, thermal, and optical properties of p- and n-type semiconductors as used in the design of devices. Mr. Allen (W)

123A. Fundamentals of Solid-State I. (Formerly numbered 115A.) Lecture, four hours; recitation, one hour. Prerequisite: junior standing in engineering. Introductory atom concepts, quantum mechanical principles, energy level in complex atoms, quantum statistics, crystal structure, energy levels in solids, band theory. Mr. Fetterman, Mr. Viswanathan (F,Sp)

123B. Fundamentals of Solid-State II. (Formerly numbered 115B.) Lecture, four hours; recitation, one hour. Prerequisite: course 123A. A discussion of the solid-state properties, lattice vibrations, thermal properties, dielectric magnetic, and superconducting properties. Mr. Fetterman, Mr. Stafsudd (W)

124. Semiconductor Physical Electronics. (Formerly numbered 115C.) Lecture, four hours; recitation, one hour. Prerequisite: course 123B. Band structure of semiconductors, homogeneous semiconductors, excess carriers in semiconductors, semiconductor surfaces, optical and thermal properties; application to design of devices. Mr. Allen, Mr. Pan (Sp)

131A. Probability. (Formerly numbered 120A.) Prerequisites: Mathematics 32B, 33B. An introduction to the theory and application of probability, including random variables and vectors, distributions and densities, characteristic functions, limit theorems, preliminary concepts of stochastic processes.
Mr. Mortensen, Mr. Rubin (F,W)

131B. Introduction to Stochastic Processes. (Formerly numbered 120B.) Prerequisites: courses 102, 131A. Introduction to the theory and application of stochastic processes, emphasizing stationary processes — properties and operations, mean-square estimation. Random and pseudorandom generation of processes with application to simulation. Elements of spectral analysis and FFT.
Mr. Mortensen, Mr. Yao (Sp)

132A. Introduction to Communication Systems. (Formerly numbered 130.) Prerequisite: course 102 or equivalent. An introductory course on electronic communication systems. Models, digital and analog signals, random processes, performance measures, and satellite communication systems. Modulation formats, including amplitude modulation (AM) and frequency modulation (FM). Digital communications, including pulse amplitude modulation (PAM), pulse code modulation (PCM), frequency shift keying (FSK), and phase shift keying (PSK).
Mr. Omura (W)

136. Introduction to Optimization Techniques. (Formerly numbered 129A.) Lecture, four hours; recitation, one hour. Prerequisites: course 103, Mathematics 32A, and 33A, or consent of instructor. 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, gradient projection and reduced gradient methods, Lagrangian methods. Students are expected to use the school's microcomputers. Mr. Aoki, Mr. Jacobsen (F)

141. Principles of Feedback Control. (Formerly numbered 122A.) 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. P.K.C. Wang (W)

142. Linear Systems: The State-Space Approach. (Formerly numbered 128A.) Prerequisite: course 102. State-space methods of linear system analysis and design, with application to problems in networks, control, and system modeling. Mr. Wiberg

161. Electromagnetic Waves I. (Formerly numbered 117A.) Lecture, four hours; recitation, one hour. Prerequisite: course 101. Review of transmission line theory; guided waves in enclosed waveguide and on surfaces; Smith chart; excitation of guided waves; phase and group velocity; cavity resonators; concept of Q; perturbation theory; waves in complex media (ferrites, crystals, semiconductors, plasmas).
Mr. Schott, Mr. Yeh (F,Sp)

162A. Antenna Design I. (Formerly numbered 117B.) Lecture, four hours; recitation, one hour. Prerequisite: course 161. Retarded potentials. Actual and equivalent sources. Far-field patterns of dipoles, loops, and helices. Reciprocity, directivity, beamwidth, and sidelobe level of antenna patterns. Design of linear arrays. Schelkunoff unit circle. Design of feeding networks. Array design including mutual coupling. Mr. Elliott (Sp)

162B. Antenna Design II. (Formerly numbered 117X.) Lecture, four hours; recitation, one hour. Prerequisite: course 162A. Radiation patterns of horns, slots, and patch antennas. Equivalent source representations. Synthesis of sum and difference patterns. Dolph-Chebychev excitation. Design of slot arrays with mutual coupling. Design of traveling wave antennas, reflectors, and lenses. Mr. Elliott (F)

163A. Introductory Microwave Circuits. (Formerly numbered 117Y.) Lecture, four hours; recitation, one hour. Prerequisite: course 161. Equivalent mode voltage/current representation of guided waves in arbitrary rectilinear structures. Design of matching obstacles, attenuators, phase shifters, directional couplers, hybrid junctions, isolators, circulators, and microwave filters. Mr. Elliott (W)

163B. Microwave and Millimeter Wave Active Circuits. (Formerly numbered 117D.) Prerequisite: course 161. Analysis of microwave and millimeter wave tubes such as klystrons, TWT, BWO, Magnetrons, and Gyrotrons, and solid-state circuits for IMPATTS, BARITTS, TUNNETS, Gunn effect devices, GaAs FETs, and bipolar transistors.
Mr. Luhmann (W)

163C. Microwave Amplifiers. (Formerly numbered 216D.) Prerequisites: courses 111B, 115B. Microwave transistors, characteristics, and equivalent circuits at microwave frequencies. Two-port networks, activity and stability. Matching network synthesis with lumped and distributed components. Commensurate matching networks. Linear amplifier design. Narrow band, broad band: input-output interactions. Optimum design approach, graphical approximations, syntheses, and optimization.
Mr. Willis (W, odd years)

164AL. Electromagnetics Laboratory (2 units). (Formerly numbered 117L.) Lecture, one hour; laboratory, three hours. Prerequisite: course 161. Experimental design, fabrication, and testing of microwave and millimeter wave sources; coaxial, waveguide, and microstrip transmission systems; detectors and power measuring devices; cavity resonator studies. Mr. Luhmann (W)

164BL. Active Microwave Circuit Design Laboratory (2 units). (Formerly numbered 117M.) Laboratory, four hours. Prerequisite: course 164AL. The application of contemporary analytic design techniques to the development of microwave amplifiers and oscillators incorporating state-of-the-art commercially available microwave transistors (silicon bipolar and GaAs MESFET). Mr. Luhmann (Sp)

165. Modern Optics. (Formerly numbered 117E.) Lecture, four hours; recitation, one hour. Prerequisite: course 161. Two-dimensional transforms. Diffraction methods. Geometrical optics and applications. Gaussian beams. Coherent and incoherent imaging systems. Optical processing methods. Holography and applications. Mr. Alexopoulos (Sp)

172. Introduction to Lasers and Quantum Electronics. (Formerly numbered 113A.) Lecture, four hours; recitation, one hour. Prerequisite: course 101 or equivalent or consent of instructor. Physical principles and applications of lasers and other quantum electronic devices. Interferometers, crystal optics, gain and saturation phenomena, and gas discharges. Mr. Stafsudd (F)

172L. Laser Laboratory (2 units). (Formerly numbered 113L.) 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. Stafsudd (F)

182. Electrical Power Systems. (Formerly numbered 111A.) Lecture, four hours; recitation, one hour. Prerequisite: course 111A (100 for nonelectrical engineering majors). Overall electrical power system requirements; typical systems; one-line diagrams. Per-unit quantities; characteristics of machines, transformers, overhead lines, and cables; steady state analysis of systems. Power limits and stability; fault calculations; relays and relay systems. Mr. Schott (W)

183. Electromechanical Energy Conversion. (Formerly numbered 111B.) Lecture, four hours; recitation, one hour. Prerequisite: course 111A (100 for nonelectrical engineering majors). Energy conversion and power flow in electromechanical interactions; electromechanics of actuators and rotating AC synchronous and induction machines and DC machines. Linear machines. Mr. Schott (Sp)

M185. Plasma Physics. (Formerly numbered M118.) (Same as Physics M122.) 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; Sp)

199. Special Studies (2 to 8 units). Prerequisites: senior standing, consent of instructor. Individual investigation of a selected topic to be arranged with a faculty member. Enrollment request forms available in department office. Only two units may be applied toward the 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 the degree. (F,W,Sp)

Graduate Courses

201S. Electrical Engineering Seminar (2 units). (Formerly numbered 201.) Prerequisite: graduate standing in engineering. Lectures on current research topics in electrical engineering. S/U grading. Mr. Green (F,W,Sp)

M208A. Analytical Methods of Engineering I. (Formerly numbered M291A.) (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 (W)

M208B. Analytical Methods of Engineering II. (Formerly numbered M291B.) (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 (Sp)

210A. Advanced Circuit Theory I. Prerequisites: course 111B, knowledge of linear algebra and complex function theory. State equations for linear circuits. Characterization of n-ports and multiterminal elements. Introduction to and applications of the scattering matrix and related topics. Mr. Orchard (F)

210B. Advanced Circuit Theory II. Prerequisite: course 210A. Analytical techniques for active circuits: return difference, Blackman's formula for an active impedance. Characterization of nonlinear elements. State equations for nonlinear circuits. Stability of nonlinear circuits: Liapunov's direct method. Theory of nonlinear transistor circuits. Mr. Willson (W)

211A. Advanced Network Synthesis. (Formerly numbered 210C.) Prerequisite: course 112. Theory and practical development of lossless ladder networks. Lattice and constant-resistance networks. Loss-phase relations in minimum-phase networks. The Hilbert transform. Allpass functions and networks. Design of linear-phase polynomials. Mr. Orchard (W)

211B. Active, Passive, and Digital Filters. (Formerly numbered 210D.) Prerequisite: course 211A or consent of instructor. Approximation theory. Realization of passive filters. Electromechanical filters. Active filters with lumped and/or distributed elements. Switched and digital filters. Mr. Orchard (Sp)

212. Theory and Design of Digital Filters. (Formerly numbered 210F.) 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. Distributed arithmetic structures. Mr. Willson (W)

215A. Analog Integrated Circuits. (Formerly numbered 216A.) Prerequisite: course 115B. High-speed linear amplifiers: circuit design for optimum high-frequency response. Operational amplifiers, improved input impedance and slew rate, pole-zero compensation, circuit design techniques for optimum SNR. Voltage multipliers, D/A and A/D converters. Mr. Abidi, Mr. Martin (F)

215B. Advanced Digital Integrated Circuits. (Formerly numbered 216B.) Prerequisite: course 115C. Modern logic families (description, analysis, and comparison), MSI digital circuits (flipflops, registers, counters, PLAs, etc.). VLSI memories (ROMs, RAMs, CCDs, bubble memories, EPROMs, EEPROMs) and VLSI systems (microcomputers, PIAs, ACIAs, etc.). Mr. Martin (W)

215C. Advanced Integrated Circuit Design. (Formerly numbered 216C.) Prerequisites: courses 118, 215A, 215B. Integrated circuit and system considerations: optimization and high-frequency effects, yield, reliability. Competing integrated circuit technologies: trade-off in materials and circuit design, special functions, hardware/software trade-off. Integrated circuit design project. Mr. Martin (F)

215D. MOS Analog Integrated Circuit Design. (Formerly numbered 216F.) Prerequisites: courses 112, 121A, 215A. Recommended: course 113. MOS technology and its limitations for analog ICs. MOS devices as analog circuit elements: MOSFET's MOS capacitors and switches. MOS op-amp and comparator design. Switched-capacitor filter design. A/D and D/A converters. Modulators, oscillators, other communication circuits. Applications in signal processing systems. Circuit analysis using computers.

M216A. LSI in Computer System Design. (Formerly numbered M258A.) (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. Viswanathan (F,W)

M216B-M216C. LSI in Computer System Design. (Formerly numbered M258B-M258C.) (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. Viswanathan (W, M216B; Sp, M216C)

219A. Special Topics in Electric Circuit Theory. (Formerly numbered 219D.) Prerequisite: course 210B or 211A or 211B. Advanced treatment of topics selected from reseach areas in electric circuit theory.

221A. Physics of Semiconductor Devices I. (Formerly numbered 215D.) Prerequisite: course 121A. Physical principles and design considerations of junction devices. Mr. Allen, Mr. Viswanathan (F)

221B. Physics of Semiconductor Devices II. (Formerly numbered 215E.) Prerequisite: course 121A. Principles and design considerations of field effect devices and charge-coupled devices. Mr. Viswanathan (Sp)

221C. Microwave Semiconductor Devices. (Formerly numbered 215C.) 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. Fetterman, Mr. K. Wang (W)

223. Solid-State Electronics I. (Formerly numbered 215A.) 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. Pan (F)

224. Solid-State Electronics II. (Formerly numbered 215B.) 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 (W, even years)

229. Seminars on Advanced Topics in Solid-State Electronics. (Formerly numbered 219B.) 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). (Formerly numbered 219X.) 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. (Formerly numbered 230.) Prerequisite: course 131A or equivalent. Not open for credit to students with credit for former System Science 227A. 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. Omura, Mr. Rubin, Mr. Yao (F)

230B. Digital Communication Systems. (Formerly numbered 233.) 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, Mr. Yao (Sp)

230C. Algorithms and Processing in Communication and Radar. (Formerly numbered 234.) 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. (Formerly numbered 227S.) Prerequisite: course 241B or consent of instructor. 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.

231A. Information Theory: Channel and Source Coding. (Formerly numbered 231.) Prerequisite: course 230A. Not open for credit to students with credit for former System Science 227B. 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 the theory of data compression (rate distortion theory).
Mr. Baker, Mr. Omura (W)

231B. Error Control Codes and Cryptography. (Formerly numbered 236.) 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. Omura, Mr. Rubin, Mr. Yao (Sp)

231C. Rate Distortion Theory and Source Coding Techniques. Prerequisites: courses 230A and 231A, or consent of instructor. Sources and distortion measures, the 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. Baker (Sp)

231D. Spread Spectrum Communications. (Formerly numbered 235.) Prerequisite: course 231A. Spread spectrum digital communication systems for antijam and multiple-access applications. Basic design approach, models, and a 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. Baker, Mr. Omura (Sp)

231E. Algebraic Coding Theory. (Formerly numbered 227F.) Prerequisite: course 231A. Fundamentals of linear or parity-check codes and decoding algorithms based on the algebraic theory of finite groups and fields; cyclic codes; Hamming; Reed-Muller, Bose-Chaudhuri-Hocquenghem, and Reed-Solomon codes, and corresponding decoding algorithms.

232A. Stochastic Modeling with Applications to Telecommunication Systems. (Formerly numbered 232.) Prerequisite: course 131A or equivalent. Not open for credit to students with credit for former System Science 200D. Introduction to stochastic processes as applied to the 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, Mr. Yao (F)

232B. Telecommunication Switching and Queueing Systems. (Formerly numbered 237.) Prerequisite: course 232A. Not open for credit to students with credit for former System Science 220A. 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. (Formerly numbered 238.) 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. (Formerly numbered 227T.) 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.

232E. Graphs and Network Flows. (Formerly numbered 220G.) 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 (Sp)

236A. Linear Programming. (Formerly numbered 272A.) Prerequisite: Mathematics 115 or equivalent knowledge of linear algebra. Basic graduate course in linear programming. The simplex method and its variants. Convergence proofs. Duality theory. Geometry of linear programs. Parametric programming. Special structures such as decomposition and upper bounded variables. Complementary pivot theory. Quadratic programming. Mr. Jacobsen (F)

236B. Nonlinear Programming. (Formerly numbered 200B.) 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. (Formerly numbered 272C.) 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, Mr. Mortensen (Sp)

237. Dynamic Programming. (Formerly numbered 273A.) Prerequisite: course 232A. Introduction to the mathematical analysis of sequential decision processes. The finite horizon model in both the deterministic and stochastic cases. The 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. (Formerly numbered 275B.) 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. (Formerly numbered 227EA-227EZ.) 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. (Formerly numbered 272BA-272BZ.) 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. (Formerly numbered 200A.) 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. (Formerly numbered 221.) Prerequisites: courses 141 or equivalent and 240A, or consent of instructor. An 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. (Formerly numbered 222C.) Prerequisite: course 240B. Applications of variational methods. Pontryagin's maximum principle, dynamic programming and nonlinear programming to problems of optimal control theory and practical systems.
Mr. P.K.C. Wang (F,Sp)

241A. Stochastic Processes. (Formerly numbered 200C.) 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.
Mr. Mortensen (F)

241B. Kalman Filtering. (Formerly numbered 227C.) 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. (Formerly numbered 222B.) 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. (Formerly numbered 222A.) Prerequisite: course 240B. Techniques for studying nonlinear control systems, with emphasis on their stability; Liapunov's direct method; input-output stability; Popov's method; linearization.
Mr. P.K.C. Wang (W)

M243. Biological Control Systems. (Formerly numbered M222F.) (Same as Anesthesiology M222.) Prerequisite: course 141 or equivalent. Introduction to the application of control theory to the modeling and analysis of biological control systems, such as the respiratory system, cardiovascular system, and neuromuscular system. Emphasis on solving problems of current interest in biomedicine.
Mr. Ward, Mr. Wiberg

249S. Topics in Control. (Formerly numbered 222EA-222EZ.) 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. (Formerly numbered 217A-217B.) 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. Yeh (F, 260A; W, 260B)

261. Microwave and Millimeter Wave Circuits. (Formerly numbered 217C.) 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 (Sp)

262. Antenna Theory and Design. (Formerly numbered 217E.) 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. Elliott (W)

270. Quantum Electronics I. (Formerly numbered 213A.) Prerequisite: course 123A or consent of instructor. Review of quantum mechanics, approximation methods, interaction of radiation and matter.
Mr. Stafsudd (F)

271. Quantum Electronics II. (Formerly numbered 213B.) Prerequisite: course 270 or consent of instructor. Optical beams and resonators, interaction of light with atoms (including amplification and saturation), properties of lasers (including power output and mode effects).
Mr. Stafsudd (W)

272. Quantum Electronics III. (Formerly numbered 213C.) Prerequisite: course 271 or consent of instructor. Properties of laser oscillators, including transient phenomena, quantum mechanical effects, and behavior of high-gain laser media.
Mr. Stafsudd (Sp)

273. Quantum Electronics IV. (Formerly numbered 213D.) Prerequisite: course 271 or consent of instructor. Quantum electronic systems, modulation, detection, acousto-optics, magneto-optics, nonlinear optics. Raman scattering, Brillouin scattering.
Mr. Stafsudd (Sp)

279S. Quantum Electronics Seminar (2 units). (Formerly numbered 213S.) Prerequisite: course 270 or consent of instructor. A series of lectures and student presentations on topics of current research interest in quantum electronics, modern optics, and laser physics. May be repeated for credit. S/U grading.
Mr. Stafsudd (W,Sp)

285A. Plasma Waves and Instabilities. (Formerly numbered 214A.) Prerequisites: courses 101, and M185 or Physics M122. Wave phenomena in plasmas described by the macroscopic fluid equations. Emphasis on homogeneous plasmas in uniform magnetic fields. Microwave propagation, plasma oscillations, ion acoustic waves, cyclotron waves, hydromagnetic waves, whistlers and helicon waves, and their classification. Illustrative experiments.
Mr. Chen, Mr. Luhmann (W)

285B. Advanced Plasma Waves and Instabilities. (Formerly numbered 214B.) 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. (Formerly numbered M214C.) (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. (Formerly numbered M214D.) (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 the burning plasma. Dynamics, stability, and control. Applications in tokamaks, tandem mirrors, and alternate concepts.
Mr. Chen (W)

M288. Fusion Reactor Technology and Design. (Formerly numbered M214E.) (Same as Mechanical, Aerospace, and Nuclear Engineering M237C.) Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 135 or consent of instructor. Fusion reactors, both magnetic and inertial. Operating conditions, power balance, system Q. Drivers for inertial confinement, magnet systems; blanket and shield design and analysis, induced radioactivity, tritium breeding and processing; radiation damage effects, design of reactors for electricity production or as hybrid systems.
Mr. Chen (Sp)

298. Seminar in 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. A teaching apprenticeship under the 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. Viswanathan (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 the 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 17 on the School of Public Health.

Materials Science and Engineering

6531K Boelter Hall, (213) 825-5534

Professors

Alan J. Ardell, Ph.D., *Chair*
Rointan F. Bunshah, D.Sc.
David L. Douglass, Ph.D.
Bruce S. Dunn, Ph.D.
John H. Lyman, Ph.D.
John D. Mackenzie, Ph.D.
Kanji Ono, Ph.D.
Aly H. Shabaik, Ph.D.
George H. Sines, Ph.D.
Christian N. J. Wagner, Dr.rer.nat.
Alfred S. Yue, Ph.D.
Daniel Rosenthal, Ph.D., *Emeritus*

Associate Professor
William Klement, Jr., Ph.D.

Adjunct Professors
Frederick F. Lange, Ph.D.
Morris A. Steinberg, D.Sc.

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, processing, 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 processing, 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; (3) nondestructive testing, which measures the degree of reliability of a processed part.

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 (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: science of materials, physical metallurgy and metal processing, mechanical metallurgy and deformation processing, and ceramics and ceramic processing.

Bachelor of Science in Materials Engineering

Materials engineering 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 plastics, 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.

Course requirements are as follows:

(1) Six core courses: Chemical Engineering M105A, M105D (or Mechanical, Aerospace, and Nuclear Engineering M105A, M105D), Civil Engineering 108, Electrical Engineering 100, Materials Science and Engineering 14, Mechanical, Aerospace, and Nuclear Engineering 102.

(2) Materials Science and Engineering 140E, 141, 142A, 144A, 145A, 146A, 147A; 142L and 146L, plus four additional laboratory units from 143L, 144L, 145B (one unit of lab credit), 147L; Mechanical, Aerospace, and Nuclear Engineering 191A, M192A or Chemical Engineering M192A (satisfies the mathematics requirement); Civil Engineering 106A (satisfies the engineering economics requirement).

(3) Five elective courses from Civil Engineering 165A, Electrical Engineering 121A, 123A, 123B, 124, Materials Science and Engineering 140D, 143A, 143B, 145B, 146B, 146F, 147B, 147E, 148A, Mechanical, Aerospace, and Nuclear Engineering 136C, 158A (the design content of the elective courses and the elective laboratory must total six units).

(4) English 3; Chemistry 11A, 11B/11BL; Computer Science 10C or 10F; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A, 8B/8BL, 8C/8CL, 8D/8DL (physics labs are optional); one life science elective course.

(5) A minimum of seven courses from the humanities, social sciences, and/or fine arts approved list (at least three must be upper division; at least three — with two upper division — must be in the same academic department or otherwise reflect coherence with respect to subject matter; and one must satisfy the engineering and science in society requirement, which also may be satisfied within the free electives).

(6) Two free elective courses.

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. (Formerly numbered Engineering 14.) 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. Douglass (F,W,Sp)

15. Introduction to Manufacturing Engineering. (Formerly numbered Engineering 15.) Manufacturing processes, materials and design in manufacturing; productivity, competitive aspects of manufacturing, manufacturing planning, production-scheduling, flexible manufacturing systems, economic and social aspects of manufacturing. Mr. Shabaik (F)

Upper Division Courses

M107A. Principles of Biotechnology. (Formerly numbered Engineering M107A.) (Same as Psychology M153.) Prerequisite: upper division standing. The principles of biological science developed in an engineering design context. Emphasis on how physiological, psychological, and sociological factors affect the integration of man into environmental, informational, and managerial systems through engineering design.
Mr. Lyman (F,W,Sp)

140D. Solid-State Electronic Materials. (Formerly numbered Engineering 140D.) Prerequisite: course 14. Principles of nucleation and crystal growth from the melt and vapor. Solute redistribution in the melt; preparation of semiconductor single crystals and thin films. Phase diagrams. Preparation of p-n junctions by the liquid-phase-epitaxy and diffusion techniques. Electrical properties of solar cells. Field trips.
Mr. Yue (W)

140E. Materials Selection and Engineering Design. (Formerly numbered Engineering 140E.) Prerequisites: courses 144A, 146A, 147A. 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. Lyman (Sp)

141. Phase Relations in Solids. (Formerly numbered Engineering 141.) 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. Ardell (F)

142A. Diffusion and Diffusion-Controlled Reactions. (Formerly numbered Engineering 142A.) Prerequisite: course 141. 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. Douglass (F)

142L. Diffusion and Diffusion-Controlled Reactions Laboratory (2 units). (Formerly numbered Engineering 142L.) Corequisite: course 142A. 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. Douglass (F)

143A. Mechanical Behavior of Materials. (Formerly numbered Engineering 143A.) 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. Sines (F,W)

143B. Failure Analysis of Metals. Prerequisite: course 142A or 147A. The 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. Douglass (Sp)

143L. Mechanical Testing Laboratory (2 units). (Formerly numbered Engineering 143L.) Laboratory, four hours. Prerequisite or corequisite: course 143A. Experimental techniques for the measurements of mechanical properties of engineering materials. Elastic constants, tensile, compression and bend testing, fracture toughness, fatigue and creep testing. Mr. Sines (W,Sp)

144A. Polymer Science. (Formerly numbered Engineering 144A.) 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, spring polymers, elastomers, adhesives. Fiber forming polymers, polymer processing technology, plasticiation. Mr. Ardell (W)

144L. Laboratory Experiments in Polymer Synthesis and Characterization (2 units). (Formerly numbered Engineering 144L.) Prerequisite: course 144A or consent of instructor. Synthesis of addition and condensation type polymers. Polymerization kinetics. Characterization of polymer molecular weights, glass transition temperature and melting temperature. Glassy polymers and elastomers. Correlation of polymer structure and molecular weight with properties. Effect of polymer additives (e.g., plasticizers). Mr. Ardell (Sp)

145A. Introduction to Materials Characterization A (Crystal Structure and X-Ray Diffraction of Material). (Formerly numbered Engineering 145A.) 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 orientation and crystal structure; phase diagram determination; X-ray stress measurements; X-ray spectroscopy; design of materials characterization procedures. Mr. Wagner (F)

145B. Introduction to Materials Characterization B (Electron Microscopy). (Formerly numbered Engineering 145B.) Lecture, three hours; laboratory, two hours. Prerequisites: courses 14, 145A. 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)

146A. Introduction to Ceramics and Glasses. (Formerly numbered Engineering 146A.) Prerequisite: course 14 or equivalent. An 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)

146B. Processing of Ceramics and Glasses. (Formerly numbered Engineering 146B.) Prerequisite: course 146A or equivalent. A study of the processes used in fabrication of ceramics and glasses, relationship to structure and properties. Processing operations, including materials preparation, forming, sintering, and melting. Design of processing to achieve desired characteristics of structure, properties, and cost. Mr. Mackenzie (W)

146F. Electronic Ceramics. (Formerly numbered Engineering 146F.) Prerequisites: course 14, Electrical Engineering 100, or equivalent. The 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 (F)

146L. Laboratory in Ceramics (2 units). (Formerly numbered Engineering 146L.) Laboratory, four hours. Prerequisite: course 146A or equivalent. Recommended corequisite: course 146B. 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)

147A. Introduction to Metallurgy. (Formerly numbered Engineering 147A.) Prerequisites: course 14, a course in thermodynamics. Introduction to metallic alloys used in engineering design. Metallurgical thermodynamics, phases in metal systems, phase diagrams, metal forming, steels and cast iron, nonferrous alloys, design of metallic alloys for specific applications. Mr. Bunshah (W)

147B. Manufacturing Processes. (Formerly numbered Engineering 147B.) 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 (Sp)

147E. Modern Process Metallurgy. (Formerly numbered Engineering 147E.) Prerequisites: course 147A, and/or Chemical Engineering M105A or Mechanical, Aerospace, and Nuclear Engineering M105A. Modern process metallurgy used in extraction and refining of metals and alloys. The role of vacuum processing in modernizing and enlarging the scope of extractive metallurgy. Design of extractive and refining processes. Properties of vacuum-processed materials. Mr. Bunshah (W, even years)

147L. Manufacturing Processes Laboratory. (Formerly numbered Engineering 147L.) 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)

148A. Structure and Properties of Composite Materials. (Formerly numbered Engineering 148A.) Prerequisites: course 14, one course from 143A, Mechanical, Aerospace, and Nuclear Engineering 156A, 158A, or Civil Engineering 165A. 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)

149A. Materials and Structures in Nature and in Civilization. Lecture, two hours; laboratory, four hours. Prerequisite for undergraduates: equivalent of preparation in natural science and competency in English and mathematics expected of entering college freshmen; for graduate students: consent of instructor. Not open to engineering or physical science students. A far-reaching effort at understanding mechanical properties of materials, especially as embodied in structures both by nature and throughout history. Laboratory techniques to determine mechanical behavior of selected materials and structures. Individual experimental project; report and presentation. Mr. Klement (Sp)

149C. Properties of Art Ceramic Materials. (Formerly numbered Engineering 149C.) Lecture, three hours; laboratory, three hours. Not intended for engineering majors. Composition and properties of art ceramics and glazes. Ceramic raw materials and their functions in bodies and glazes. Design of glazes and methods of expressing composition. Laboratory projects included. Mr. Klement (W)

149E. Ceramic Materials in History and Archaeology. (Formerly numbered Engineering 149E.) Lecture, two hours; laboratory, four hours. Prerequisite: consent of instructor. A technical introduction to the origins and evolution of ceramics and related materials, with emphasis on fabrication processes and raw materials. Laboratory exercises aimed at the development of skills necessary for analytical studies (for students in the humanities and sciences).

180B. Machine and Systems Biotechnology. (Formerly numbered Engineering 180B.) Prerequisite: course M107A or consent of instructor. Quantitative and qualitative methods for assessing man as a component in engineering design applications. Limits and optima of human psychophysiological capabilities applied to display-control design, decision-making problems, and task definition; problems of man-machine interactions in large-scale systems. Mr. Lyman (Sp)

199. Special Studies (2 to 8 units). Prerequisites: senior standing, consent of instructor. Individual investigation of a 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 141, Chemical Engineering M105A or Mechanical, Aerospace, and Nuclear Engineering M105A, or equivalent. Thermodynamical equilibrium criteria for multicomponent systems of materials. Phase transformations and chemical reactions. Properties of solutions; the quasichemical approach. Free energy of binary systems and the construction of phase diagrams. Constitution of melts. Thermodynamics of interfaces and defects. Mr. Ardell (W)

240B. Principles of Materials Science B (Structure of Materials). Prerequisite: course 145A 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 (Sp)

241. Oxidation of Metals. Prerequisite: course 141 or equivalent or consent of instructor. The 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 158A. Fundamental concepts describing the 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)

243A. Fracture of Structure Materials. Prerequisite: Mechanical, Aerospace, and Nuclear Engineering 158A or equivalent. The 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 (W)

243B. Design for Fatigue Reliability. Prerequisites: one or more courses from 143A, Mechanical, Aerospace, and Nuclear Engineering 156A, and 158A, 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 158A. Elastic and plastic behavior of crystals, the geometry, mechanics, and interaction of dislocations, mechanisms of yielding, work hardening, and other strengthening. Mr. Ono (Sp, odd years)

244. Electron Microscopy. Prerequisite: course 145B or equivalent. Essential features of the electron microscope, geometry of electron diffraction, kinematical and dynamical theories of electron diffraction, including anomalous absorption, applications of theory to defects in crystals. Moire 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 145A or equivalent. Theory of the 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. Wagner (Sp, odd years)

246A. Mechanical Properties of Nonmetallic Crystalline Solids. Prerequisite: course 146A. Material and environmental factors affecting the 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 (Sp)

246B. Structure and Properties of Glass. Prerequisite: course 146A. 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 146A. Principles governing electronic properties of ceramic single crystals and glasses and effects of processing and microstructure of 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 142A. 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 (W, even years)

247C. Advanced Solidification. Prerequisites: courses 141, 147A, or equivalent. Liquid state concept of constitutional supercooling; nucleation from the liquid phase; solute redistribution during liquid-solid transformation; fluid motion; interface morphology; eutectic growth; determination of phase diagrams. Students report on current topics in solidification. Mr. Yue (Sp, even 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)

248B. Deposition Technologies and Their Applications. Prerequisites: courses 146A, 147A, and 248A, or consent of instructor. Deposition methods used in high technology application. Theory and experimental details of physical vapor deposition (PVD), chemical vapor deposition (CVD), plasma spray, electrodeposition. Applications in semiconductor, chemical, optical, mechanical, and metallurgical industries. Mr. Bunshah (W, odd years)

280A. Advanced Biotechnology. (Formerly numbered Engineering Systems 280A.) Prerequisite: course 180B or Mechanical, Aerospace, and Nuclear Engineering 180A or consent of instructor. Review and analysis of contemporary bioscience research which bears on problems of engineering component and system design. Emphasis on methodological and scientific factors underlying man-machine-environment interactions. Mr. Lyman, Mr. O'Brien (W)

280B. Advanced Biotechnology. (Formerly numbered Engineering Systems 280B.) Prerequisite: course 180B or Mechanical, Aerospace, and Nuclear Engineering 180A or consent of instructor. Specialized coverage of "human factors" and "human engineering," with orientation toward obtaining design optimization of the functions of humans in relation to engineering parameters of environment, communication, and control. Mr. Lyman (Sp)

298. Seminar in 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. A teaching apprenticeship under the 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. Ardell (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 the 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.

Mathematics/ Computer Science (Interdepartmental)

For details on this undergraduate program, see Chapter 5 on the College of Letters and Science.

Mechanical, Aerospace, and Nuclear Engineering

5732 Boelter Hall, (213) 825-2855, 825-2281

Professors

Mohamed A. Abdou, Ph.D.
George E. Apostolakis, Ph.D.
Ivan Catton, Ph.D.
Andrew F. Charwat, Ph.D.
Robert W. Conn, Ph.D.
Vijay K. Dhir, Ph.D.
Peretz Friedmann, Sc.D.
William E. Kastenberg, Ph.D., *Chair*
Robert E. Kelly, Sc.D.
Cornelius T. Leondes, Ph.D.
Ajit K. Mal, Ph.D.
William C. Meecham, Ph.D.
Michel A. Melkanoff, Ph.D.
Anthony F. Mills, Ph.D.
D. Lewis Mingori, Ph.D.
Philip F. O'Brien, M.S.
David Okrent, Ph.D.
Gerald C. Pomraning, Ph.D.
Aly H. Shabaik, Ph.D.
Lucien A. Schmit, Jr., M.S.
George H. Sines, Ph.D.
Russell A. Westmann, Ph.D.

Emeritus Professors

Joseph S. Beggs, D.Ing.
Harry Buchberg, M.S.
Kurt Forster, Ph.D.
Walter C. Hurty, M.S.
Antony J. A. Morgan, Ph.D.
Russell R. O'Neill, Ph.D.
Richard Stern, Ph.D.
Edward H. Taylor, M.S.
William T. Thomson, Ph.D.

Associate Professors

Claude G. Fleury, D.Sc.
Nasr M. Ghoniem, Ph.D.
James S. Gibson, Ph.D.
Peter A. Monkewitz, Ph.D.

Assistant Professors

Ann R. Karagozian, Ph.D.
Adrienne G. Lavine, Ph.D.
Vinod G. Mengle, Ph.D.
Daniel C. H. Yang, Ph.D.

Adjunct Professors

Leslie Cave, B.Sc.
R. Philip Hammond, Ph.D.
Leona M. Libby, Ph.D.
Milton S. Plesset, Ph.D.
Chauncey Starr, Ph.D.
Robert J. Taylor, Ph.D.

Adjunct Associate Professors

Sukumar Chakravarthy, Ph.D.
Charles L. Gustafson, Ph.D.
Kenneth A. Solomon, Ph.D.

Adjunct Assistant Professor

James M. McDonough, Ph.D.

Adjunct and Visiting Lecturers

Charles Ashbaugh, M.S., *Adjunct*
Alexander Samson, Ph.D., *Visiting Senior*

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 mechanical engineering and aerospace engineering are offered on the undergraduate and graduate levels, while nuclear engineering is primarily a graduate discipline. The recent Conference Board of Associated Research Councils' study ranked UCLA's mechanical engineering program ninth in the nation for both teaching and research.

Because of the scope of the department, faculty research and teaching cover an extremely 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, helicopter dynamics and aeromechanics, dynamics and control of large space structures. Studies in structural mechanics range from fracture mechanics and wave propagation to structural dynamics and aeroelasticity. In the area of fluid mechanics and acoustics, investigations are underway on combustion, flow instabilities, turbulence and thermal convection, aeroacoustics, and unsteady aerodynamics of turbomachines and helicopter rotors. Other key areas of research include fusion reactor design, experimental tokamak confinement physics, and surface physics; particle transport theory; light water reactor safety; reliability and risk assessment methodology and application; societal risk management; and nuclear materials. The department also has growing activity in computer-aided design and manufacturing.

At the undergraduate level, the department offers accredited programs leading to the Bachelor of Science degrees in Aerospace Engineering and Mechanical Engineering. The former includes opportunity to emphasize propulsion, heat and mass transfer, fluids, dynamics and control, or structures, while the latter includes opportunity to emphasize mechanical design, dynamics, and control, thermal science and power systems, or manufacturing processes.

At the graduate level, the department offers programs leading to M.S. and Ph.D. degrees in three separate areas: mechanical engineering, aerospace engineering, and nuclear engineering. An M.S. in Manufacturing Engineering is also offered.

Bachelor of Science in Aerospace Engineering

Aerospace engineering is concerned with the design and construction of various types of fixed-wing and rotary-wing (helicopters) aircraft used for air transportation and defense purposes. It is also concerned with the design and construction of spacecraft and 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.

Course requirements are as follows:

(1) Eight core courses: Civil Engineering 108, Electrical Engineering 100, 102, Materials Science and Engineering 14, Mechanical, Aerospace, and Nuclear Engineering 102, 103, M105A, M105D.

(2) Mechanical, Aerospace, and Nuclear Engineering 150A, 150B, 150P, 154A, 154B, 154S, 166A, 171A, and 161A or M169A; 157, 157A (satisfy the laboratory requirement); Civil Engineering 106A (satisfies the engineering economics requirement); Mechanical, Aerospace, and Nuclear Engineering 191A or M192A or a suitable course in the Mathematics Department selected in consultation with your adviser (satisfies the mathematics requirement).

(3) Three elective courses selected in consultation with your adviser from Mechanical, Aerospace, and Nuclear Engineering 131A, 132A, 133A (propulsion, heat, and mass transfer); 153A, 153C (acoustics); 155, 161A, 164, M169A, 171C (dynamics and control); 156A, 158A (structural mechanics); 162A (design mechanisms); 131AL, 162C, Civil Engineering 157B, 169L (laboratory).

(4) English 3; Chemistry 11A, 11B/11BL; Computer Science 10F; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A, 8B/8BL, 8C/8CL, 8D/8DL; one life science elective course.

(5) A minimum of seven courses from the humanities, social sciences, and/or fine arts approved list (at least three must be upper division; at least three — with two upper division — must be in the same academic department or otherwise reflect coherence with respect to subject matter; and one must satisfy the engineering and science in society requirement).

Bachelor of Science in Mechanical Engineering

The 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 design, dynamics, and control; thermal science and power systems; and manufacturing processes.

Course requirements are as follows:

(1) Seven core courses: Civil Engineering 108, Electrical Engineering 100, Materials Science and Engineering 14, Mechanical, Aerospace, and Nuclear Engineering 102, 103, M105A, M105D.

(2) Materials Science and Engineering 147B, Mechanical, Aerospace, and Nuclear Engineering 131A, 133A, 150A, plus one course from 156A, 158A, 166A (or Civil Engineering 166), and two courses from 162A, M169A, 171A; Civil Engineering 106A (satisfies the engineering economics requirement); Mechanical, Aerospace, and Nuclear Engineering 162B and 162M (satisfy the design requirement); one mathematics course from Mechanical, Aerospace, and Nuclear Engineering 191A, M192A (recommended), 192B, 192C, 193A, 193B, or Electrical Enginnering 103.

Eight laboratory units: Mechanical, Aerospace, and Nuclear Engineering 157, plus four additional units from one of the following subject areas:

Manufacturing Processes: Materials Science and Engineering 143L, 144L, 146L, 147L, Mechanical, Aerospace, and Nuclear Engineering 163L, 195L.

Mechanical Design, Dynamics, and Control: Civil Engineering 157B (two units of lab credit), 169L, Materials Science and Engineering 143L, Mechanical, Aerospace, and Nuclear Engineering 162C (two units of lab credit).

Thermal Science and Power Systems: Mechanical, Aerospace, and Nuclear Engineering 131AL.

(3) Four elective courses, approved by your adviser, to be selected from one of the subject areas listed below (at least one course in each subgrouping — a, b — within your selected subject area should be included):

Manufacturing Processes:

(a) Materials Science and Engineering 143A, Mechanical, Aerospace, and Nuclear Engineering 158A*, 163A, 164.

(b) Civil Engineering 174A, Mechanical, Aerospace, and Nuclear Engineering 174B, 194A, 194B.

Mechanical Design, Dynamics, and Control:

(a) Mechanical, Aerospace, and Nuclear Engineering 155, 162A*, 163, M169A*, 171A*.

(b) Electrical Engineering 103, 131A, 131B, Materials Science and Engineering 143A, Mechanical, Aerospace, and Nuclear Engineering 164, 191A, 193A, 194A, 194B, Mathematics 115A, 115B, 131A, 131B.

*Unless taken as part of the core.

Thermal Science and Power Systems:

(a) Chemical Engineering 130A, Mechanical, Aerospace, and Nuclear Engineering 132A, 135, 150B.

(b) Mechanical, Aerospace, and Nuclear Engineering 134B, 136, 150P, 151.

(4) English 3; Chemistry 11A, 11B/11BL; Computer Science 10C or 10F; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A, 8B/8BL, 8C/8CL, 8D/8DL; one life science elective course.

(5) A minimum of seven courses from the humanities, social sciences, and/or fine arts approved list (at least three must be upper division; at least three — with two upper division — must be in the same academic department or otherwise reflect coherence with respect to subject matter; and one must satisfy the engineering and science in society requirement).

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 Course

94. Introduction to Computer-Aided Design and Drafting. (Formerly numbered Engineering 94.) 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. Melkanoff (F,Sp)

Upper Division Courses

102. Mechanics of Particles and Rigid Bodies. (Formerly numbered Engineering 102.) 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. (Formerly numbered Engineering 103.) Lecture, three hours; recitation, two hours. Prerequisites: Mathematics 32B, 33A, Physics 8B. An introductory course dealing with the application of the principles of mechanics to the flow of compressible and incompressible fluids.
Mr. Meecham (F,W,Sp)

M105A. Introduction to Engineering Thermodynamics. (Formerly numbered Engineering 105A.) (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 the analysis and design of closed and open systems. Mr. Dhir (F,W,Sp)

M105D. Transport Phenomena. (Formerly numbered Engineering 105D.) (Same as Chemical Engineering M105D.) 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)

M109A. Engineering and Policy: Resources and Risk. (Same as Civil Engineering M109A.) Lecture, two hours; recitation, two hours. Prerequisite: sophomore or higher standing in engineering. The philosophical, sociological, and institutional implications of engineering-based risk and decision making. Emphasis on opportunities for the useful development of resources, inherent risks, and the responsibilities of engineers in the decision process. Emphasis on thoughtful student discussion.
Mr. Kastenberg (W)

131A. Intermediate Heat Transfer. (Formerly numbered Engineering 131A.) Prerequisite: course M105D. 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, dimensional analysis, working correlations. Surface radiation. Two-stream heat exchangers. Elements of thermal design.
Mr. Catton (F,Sp)

131AL. Thermal Sciences Laboratory. (Formerly numbered Engineering 131AL.) Laboratory, eight hours. Prerequisites: courses 131A, 157. Basic experimental investigations and analysis of the energy transformation and rate processes. Experiments include examples from thermodynamics and heat and mass transfer. Students take and analyze the data and discuss the physical phenomena.
Mr. Mills (Sp)

132A. Mass Transfer. (Formerly numbered Engineering 132A.) Prerequisites: courses M105D, 131A. The 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 (Sp)

133A. Engineering Thermodynamics. (Formerly numbered Engineering 133A.) Prerequisites: courses 103, M105A, M105D. Applications of thermodynamic principles to engineering processes. Energy conversion systems. Rankine cycle and other power cycles, refrigeration, psychrometry, reactive and nonreactive fluid flow systems. Mr. Dhir (F)

M134A. New Energy Technology: Resources, Conversion, Constraints. (Same as Civil Engineering M134A.) Prerequisite: course M105A or equivalent in physics or chemistry or consent of instructor. Energy resources: fossil fuels, nuclear fuels, hydro, solar, wind, geothermal, and biomass sources. Conversion methods for power production and other energy uses. Consideration of thermodynamic, economic, and environmental constraints.
Mr. Kastenberg

134B. Solar Energy Use and Control. (Formerly numbered Engineering 134B.) Prerequisite: course M105D 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. (Formerly numbered 135A.) 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. Kastenberg (F)

135D. Introduction to Fusion Engineering and Reactor Design. (Formerly numbered Engineering 135D.) Corequisite: 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 (F)

136. Thermal Hydraulic Design of Nuclear and Other Power Systems. (Formerly numbered 136B.) 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)

136A. Introduction to Probabilistic Risk Analysis. (Formerly numbered Engineering 136A.) Prerequisite: consent of instructor. Probabilistic models for the failure of components and systems. Redundant systems. Maintenance models. Fault and event tree analysis. Applications to nuclear reactor systems.
Mr. Apostolakis

136C. Fundamentals of Nuclear Reactor Materials. (Formerly numbered Engineering 136C.) Prerequisites: Materials Science and Engineering 14, Mathematics 33A, Physics 8D. Function and choice of materials in reactors. Point defects. Diffusion in solids. Fuel element thermal performance. Behavior of fission products. Fuel swelling radiation effects in metals; hardening, embrittlement, and fracture; nuclear fuel equation of state; fuel element design.
Mr. Ghoniem

150A. Intermediate Fluid Mechanics. (Formerly numbered Engineering 150A.) Prerequisite: course 103 or equivalent or consent of instructor. The basic equations governing fluid motion. Fundamental solutions of the 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. (Formerly numbered Engineering 150B.) Prerequisites: courses 103, 150A, or equivalent. Advanced aspects of potential flow theory. Incompressible flow around thin airfoils ($C_{\frac{1}{2}}$, 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. (Formerly numbered Engineering 150P.) Prerequisites: courses 103, M105A. Thermodynamic properties of gases, design and analysis of aircraft jet engine components, cycle analysis, design and analysis of combustion systems, performance of rocket vehicles.
Ms. Karagozian (F)

151. Performance of Vehicles. (Formerly numbered Engineering 151.) Prerequisites: courses 103, M105A. Preliminary design analysis of the performance of a variety of vehicles, including automobiles, trains, aircraft, rocket-powered vehicles, ground effect machines, ships and sailboats; performance parameters include speed, range, payload, efficiency, dynamics and stability, noise, and air or water pollution. Mr. Charwat (Sp)

153A. Engineering Acoustics. (Formerly numbered Engineering 153A.) Prerequisite: upper division standing in engineering or consent of instructor. Fundamental course in acoustics, including the ear and hearing; basic acoustical instrumentation; propagation of sound; sources of sound; architectural reverberation; selected subjects. Mr. Meecham (W)

153B. Acoustics Laboratory. (Formerly numbered Engineering 153B.) Laboratory, eight hours. Prerequisite or corequisite: course 153A or consent of instructor. Experimental studies in the field of acoustics, including audiometry, noise and noise control, acoustical filters, impedance measurements, transducer characteristics, and interferometry. Occasional field trips may be necessary to obtain data.
Mr. Meecham

153C. Noise and Noise Control Design. (Formerly numbered Engineering 153C.) Prerequisite: course 153A or consent of instructor. Practical concepts in design, construction, measurement, and analysis of noise suppression techniques. Equipment, transducers, environmental factors in sound propagation, enclosures, properties of materials, sound interaction in structures, mufflers, isolators, damping of panels, ducts, aerodynamic noise, noise criteria and standards. Mr. Meecham

154A. Preliminary Design of Aircraft. (Formerly numbered Engineering 154A.) Prerequisite: course 154S. Classical preliminary design of an aircraft, including weight estimation, performance and stability, and control consideration. Quarter assignment consists of the preliminary design of a low-speed aircraft.
Mr. Friedmann (W)

154B. Design of Aerospace Structures. (Formerly numbered Engineering 154B.) 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. Friedmann (Sp)

154S. Flight Mechanics, Stability, and Control of Aircraft. (Formerly numbered Engineering 154S.) Prerequisites: courses 150A, 150B. Aircraft performance, flight mechanics, stability, and control; some of the basic ingredients needed for the design of an aircraft. The effects of airplane flexibility on stability derivatives. Mr. Friedmann (F)

155. Intermediate Dynamics. (Formerly numbered Engineering 155.) Prerequisite: course 102 or equivalent. The axioms of Newtonian mechanics, generalized coordinates, Lagrange's equations, variational principles; central force motion; kinematics and dynamics of a rigid body. Euler's equations, motion of rotating bodies, oscillatory motion, normal coordinates, orthogonality relations, the vibrating string.
Mr. Gibson (Sp)

156A. Advanced Strength of Materials. (Formerly numbered Engineering 156A.) Prerequisite: Civil Engineering 108. Columns and beam columns. Torsion; Airy's stress functions, stress concentrations. Loads on balls, rollers. Rotating disks, thick hollow spheres, thick hollow circular cylinders, curved beams, coiled springs. Mr. Westmann (F,Sp)

157. Basic Mechanical Engineering Laboratory. (Formerly numbered Engineering 157.) Laboratory, eight hours. Prerequisites: courses 103, M105A, M105D, Civil Engineering 108. Methods of measurement of basic quantities and performance of basic experiments in the thermal sciences, fluid mechanics, and structures. Primary sensors, transducers (motion, force and stress, temperature), recording equipment, signal processing, and data analysis.
Mr. Mills, (F,W,Sp)

157A. Fluid Mechanics/Aerodynamics Laboratory. (Formerly numbered Engineering 157A.) Laboratory, eight hours. Prerequisites: courses 150A, 157. An experimental illustration of important physical phenomena in the area of fluid mechanics/aerodynamics, as well as hands-on experience with modern experimental tools and techniques in the field, including the basics of digital data acquisition.
Mr. Monkewitz

158A. Elasticity and Plasticity. (Formerly numbered Engineering 158A.) Prerequisite: Mathematics 32B. Three-dimensional stress and strain. Criteria for prediction of mechanical failure. Differential equations in three dimensions; analytical, numerical, and experimental solutions of plane state and torsion problems. (Stress function, iteration, strain gages, photoelasticity.) Homogeneous plastic flow, plastic tensile instability. Mr. Westmann (W)

161A. Introduction to Astronautics. (Formerly numbered Engineering 161A.) Prerequisite: course 102. The space-environment of earth, near-earth orbits and trajectories, step rockets and staging, the two-body problem, orbital transfer and rendezvous, elementary perturbation theory, influence of earth's oblateness. Mr. Kastenberg (F)

162A. Introduction to Mechanisms and Mechanical Systems. (Formerly numbered Engineering 162A.) Prerequisite: course 102. The analysis and synthesis of mechanisms and mechanical systems, including both kinematics and dynamics aspects. Mechanisms from a wide range of applications, including automatic machinery, transportation systems, and computer peripheral equipment.
Mr. Yang (F)

162B. Fundamentals of Mechanical System Design. (Formerly numbered Engineering 162B.) Lecture, three hours; laboratory, three hours. Prerequisites: course 102, Civil Engineering 108. Techniques of modern design and development of mechanical systems. Application and analysis of basic components and subsystems such as gear trains, bearings, hydraulic and pneumatic subsystems. The dynamics of high-speed machines. Students create a design of their choice. Mr. Yang (F,W)

162C. Electromechanical Systems Design Laboratory. (Formerly numbered Engineering 162C.) Lecture, one hour; laboratory, five hours. Prerequisite: course 162B or consent of instructor. Laboratory and design course for students interested in development of complex mechanical and electromechanical systems. Students, with consent of instructor, select a system which they develop, build, and instrument. Behavior of this system studied in detail.
Mr. Yang (Sp)

162M. Senior Mechanical Engineering Design. (Formerly numbered Engineering 162M.) Lecture, one hour; laboratory, five hours. Prerequisites: course 162B, Civil Engineering 106A, Materials Science and Engineering 147B. Must be taken during the last two quarters of the academic program. Students conceptualize, analyze, synthesize, and optimize group design projects. Consideration of constraints such as economics, safety, reliability, manufacturability, and social impact. Presentation, including a report with engineering specifications and drawings, made in competition among groups. Mr. Samson (Sp)

163. Dynamics and Control of Physical Systems. (Formerly numbered Engineering 163.) Prerequisites: courses 155 or M169A (may be taken concurrently), 171A. Application of the principles of dynamics and classical control theory to a wide range of physical systems, including simplified models of machines and electromechanical devices, space and ground transportation vehicles, and biomechanical systems. Mathematical modeling and computer simulation. Mr. Yang

163A. Fundamentals of Robotics. (Formerly numbered Engineering 163A.) Prerequisite: upper division standing. Mechanical modeling and control of robots. Interaction of robots with their environment. Study of robot components. Robot languages. Computer simulation of robot action. Intelligent robot in industrial applications. Social implications.
Mr. Melkanoff (F)

163L. Robotics Laboratory. (Formerly numbered Engineering 163L.) Laboratory, eight hours. Prerequisite: consent of instructor. Hands-on experience in programming and operating industrial robots. Research projects in industrial applications in robotics systems, languages, sensory systems, and artificial intelligence. Mr. Melkanoff (F,W)

164. Digital Control of Physical Systems. (Formerly numbered Engineering 164.) (Not the same as course 164 prior to Fall Quarter 1982.) Prerequisite: course 171A or Electrical Engineering 141. Recommended: courses 163, 171C. 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 (W)

166A. Analysis of Flight Structures. (Formerly numbered M166.) Prerequisite: Civil Engineering 108. Introduction to 2-D 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, Mr. Westmann (F)

168. Introduction to Finite Element Technology. Lecture, four hours; laboratory, four hours. Prerequisites: course 94, Civil Engineering 108, Computer Science 10F, Mathematics 33A. Recommended: course 156A or 158A or Civil Engineering 166 or consent of instructor. Limited to 20 senior students. Introduction to the 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. Fleury (Sp)

M169A. Introduction to Mechanical Vibrations. (Formerly numbered Engineering 169A.) (Same as Civil Engineering M169A.) Prerequisites: course 102, Civil Engineering 108. Recommended: Electrical Engineering 102. Fundamentals of vibration theory and applications. Free, forced, and transient vibration of one and two degrees of freedom systems, including damping and nonlinear behavior. Normal modes, coupling, and normal coordinates. Elements of vibration and wave propagation in continuous systems.
Mr. Friedmann (W)

171A. Introduction to Feedback and Control Systems: Dynamic Systems Control I. (Formerly numbered Engineering 171A.) Prerequisite: consent of instructor. Recommended: Electrical Engineering 102. 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. (Formerly numbered Engineering 171C.) Recommended 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. Leondes (F,Sp)

174B. Reliability and Quality Assurance. (Formerly numbered Engineering 174B.) Prerequisite: course 193A or consent of instructor. An introduction to the manufacturing-oriented and related fields of reliability and quality in terms of organizational relationships, major functional tasks, statistical and other techniques, and elements of engineering analysis.
Mr. Apostolakis (F)

180A. Environmental Biotechnology. (Formerly numbered Engineering 180A.) Prerequisite: Materials Science and Engineering M107A or consent of instructor. Physical, physiological, and psychological aspects of the 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. O'Brien

191A. Laplace Transforms and Applied Complex Variables. (Formerly numbered Engineering 191A.) Prerequisites: course 102, Electrical Engineering 100. Introduction to the 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. Forster (W,Sp)

M192A. Mathematics of Engineering. (Formerly numbered Engineering 192A.) (Same as Chemical Engineering 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. Series solution to linear second-order ordinary differential equations. Special functions and introduction to boundary value problems. Mr. Forster, Mr. Kastenberg (F,W,Sp)

192B. Mathematics of Engineering. (Formerly numbered Engineering 192B.) Prerequisite: course M192A or equivalent. Applications of mathematical methods to engineering problems. Eigenvalue problems for continuous systems and the related special functions. Mr. Kastenberg (Sp)

192C. Numerical Methods for Engineering Applications. (Formerly numbered Engineering 192C.) Recommended prerequisite: Electrical Engineering 103. Basic topics from numerical analysis having wide application in the solution of practical engineering problems. The algebraic eigenvalue problem. Initial and boundary value problems for ordinary and partial differential equations. Elementary finite difference techniques for partial differential equations applied to heat, wave, and Poisson equations.
Mr. Kastenberg (F,Sp)

M192F. Numerical Optimization Methods for Engineering Design. (Formerly numbered 192F.) (Same as Civil 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. Fleury

193A. Engineering Probabilistics and Stochastics. (Formerly numbered Engineering 193A.) Prerequisite: junior standing in engineering. Sets and set algebra; sample spaces; combinatorics; absolute and conditional probability; discrete and continuous random variables; probability distribution, increment, and density functions; Chebychev's inequality; Laplace-Fourier transforms; law of large numbers; central limit theorems; discrete and continuous stochastic processes. Mr. Meecham (F)

193B. Engineering Statistics. (Formerly numbered Engineering 193B.) Prerequisite: course 193A or equivalent or consent of instructor. Introductory concepts of statistical decision and estimation. Population parameters, samples, data, statistics. Classical tests of significance and hypotheses. OC-functions and sample sizes. Statistical estimation for one- and two-parameter populations. Bayesian inference, stopping rules. Decision theory, payoffs, losses. Applications. Mr. Apostolakis (W)

194A. Fundamentals of Computer-Aided Design and Manufacturing. (Formerly numbered Engineering 194A.) Prerequisite: junior standing in engineering or mathematics. Corequisite: course 194B. Basic course in computer-aided and manufacturing area. Foundation of computerized drafting, including primitives, operators, and major functions. Descriptions and representations of solid objects; hardware, software, and available commercial systems. The data processing and numerical control aspects of computer-aided manufacturing. Mr. Melkanoff (W)

194B. Computer-Aided Design Laboratory (2 units). (Formerly numbered Engineering 194B.) Laboratory, four hours. Prerequisite: junior standing in engineering or mathematics. Corequisite: course 194A. Students are taught how to utilize an on-line computer-aided system, to draw and to design various parts and systems. Mr. Melkanoff (W)

195A. Numerically Controlled Machine Programming and Control Software Design. Prerequisite: FORTRAN programming language. Advanced programming of machining processes in APT. Introduction to IBM APT-AC numerically controlled processor. Design of postprocessors. Variable programming in numerically controlled languages. Method of generating numerical control programs by using CAD systems. Mr. Melkanoff (W)

195L. Numerically Controlled Manufacturing Machinery Laboratory. Laboratory, eight hours. Prerequisite: consent of instructor. Programming and control of numerically controlled metal cutting machines. Numerically controlled programming in various languages. Postprocessors utilization. Direct interface to computer-aided design. Mr. Melkanoff (W)

199. Special Studies (2 to 8 units). Prerequisites: senior standing, consent of instructor. Individual investigation of a 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. Kastenberg

202. Manufacturing Engineering Seminar (2 units). Prerequisite: graduate standing in engineering. Lectures on current research and development in manufacturing engineering. S/U grading.
Mr. Melkanoff

231A. Convective Heat Transfer Theory. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 231A.) Prerequisite: course 131A. The 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. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 231B.) 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. Catton

231C. Boiling and Condensation. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 231C.) 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. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 231D.) 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. Kastenberg (Sp)

231E. Two-Phase Flow Heat Transfer. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 231E.) 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. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 231F.) Prerequisite: course 231A. Advanced topics in heat transfer from the 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 (F)

232B. Advanced Mass Transfer. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 232B.) Prerequisites: courses 131A, 132A. The formulation of the 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 the hypersonic boundary layer, ablation and transpiration, cooling combustion. Mr. Mills

233A. Advanced Power Production and Propulsion. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 233A.) 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. Charwat

234A. Topics in Thermal Design. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 234A.) 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. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 235A.) Prerequisites: courses 135, M192A. The 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 (W)

235B. Kinetic Theory of Plasmas and Particle Transport. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 235B.) Prerequisites: course 135 or 135D and Electrical Engineering M185, or consent of instructor. Unified kinetic theory treatment of plasma, neutron, and radiation transport phenomena. The 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 (Sp)

235C. Methods of Nuclear Reactor Analysis. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 235C.) Prerequisite: course 235A or consent of instructor. The analysis of nuclear reactor systems by approximation techniques, analytical methods, and numerical methods. A synthesis of reactor physics and engineering, with applications to various systems. Mr. Pomraning

236A. Nuclear Fuel Element Behavior. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 236A.) Prerequisite: course 136C. Void swelling of cladding materials, fuel swelling due to fission gases, pore migration and fuel restructuring, fission gas release, computer codes for swelling and gas release, densification, and hot pressing, modeling of the structural behavior of fuel elements and assemblies. Mr. Okrent

236B. Radiation Damage in Reactor Materials. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 236B.) Prerequisite: course 136C. Fundamentals of radiation damage; energy loss and Linhard's theory, atom displacement, the collision cascade; focusing and channeling effects, computer simulations and experiments on cascades, damage simulation techniques for material testing, bulk effects of radiation; void swelling and irradiation creep, surface effects; blistering and sputtering of surface atoms. Mr. Ghoniem (W)

236C. Nuclear Reactor Safety. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 236C.) Prerequisite: course 135B. 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. Okrent (W)

236D. Probabilistic Risk Assessment. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 236D.) Prerequisite: course 136A. Basic concepts of risk benefit; low probability — high consequence events; methods for the evaluation of risk; fault/event tree analysis; dependent failures; data evaluation; decision theory; applications to large technological systems (e.g., nuclear power reactors, chemical process systems, dams, etc.). Mr. Apostolakis (Sp)

236E. Advanced Problems in Reactor Design. (Formerly numbered Chemical, Nuclear, and Thermal Engineering 236E.) Prerequisites: at least four courses from 235A, 235B, 235C, 236A, 236B, 236C, 236D. 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. Kastenberg (Sp)

M237A. Principles of Magnetic Confinement Fusion. (Formerly numbered M250.) (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

M237B. Fusion Plasma Physics and Analysis. (Formerly numbered M251.) (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 the burning plasma. Dynamics, stability, and control. Applications in tokamaks, tandem mirrors, and alternate concepts. Mr. Conn (W,Sp)

M237C. Fusion Reactor Technology and Design. (Formerly numbered M252.) (Same as Electrical Engineering M288.) Prerequisite: course 135 or consent of instructor. Fusion reactors, both magnetic and inertial. Operating conditions, power balance, system Q. Drivers for inertial confinement, magnet systems; blanket and shield design and analysis, induced radioactivity, tritium breeding and processing; radiation damage effects, design of reactors for electricity production or as hybrid systems. Mr. Abdou (Sp)

239BA-239BZ. Seminar: Current Topics in Transport Phenomena (2 to 4 units each). (Formerly numbered Chemical, Nuclear, and Thermal Engineering 239BA-239BZ.) 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. (W)

239DA-239DZ. Seminar: Current Topics in Nuclear Engineering (2 to 4 units each). (Formerly numbered Chemical, Nuclear, and Thermal Engineering 239DA-239DZ.) 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). (Formerly numbered Chemical, Nuclear, and Thermal Engineering 239FA-239FZ.) Prerequisites: consent of instructor, additional prerequisites for each offering as announced in advance by the 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). (Formerly numbered Chemical, Nuclear, and Thermal Engineering 239GA-239GZ.) Prerequisites: consent of instructor, additional prerequisites for each offering as announced in advance by the 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). (Formerly numbered 253AA-253Z.) Prerequisites: consent of instructor, additional prerequisites for each offering as announced in advance by the 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.

250A. Foundations of Fluid Dynamics. Prerequisite: course 150A or consent of instructor. The fundamental theorems of fluid dynamics. Ideal fluids, potential flow, vortex motion, and viscous flow. The history of fluid dynamics, illustrated with problems drawn from mechanics, aerodynamics, and geophysics. Mr. Kelly (F)

250B. Viscous and Turbulent Flows. Prerequisite: course 150A or consent of instructor. The fundamental principles of fluid dynamics applied to the 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. Kelly, Mr. Monkewitz (W)

250C. Compressible Flows. Prerequisite: course 150A or 150B or consent of instructor. 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. Mr. Charwat (Sp)

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)

251B. Marine Hydrodynamics. Prerequisites: courses 150A, 193A, and 193B, or equivalent, or consent of instructor. Basic hydrodynamics; small amplitude and shallow water theories; waves on beaches; ship waves; mathematical hydraulics; breaking of a dam. Mr. Kelly (Sp)

251C. Fluid Dynamics of Pollution. Prerequisite: course 150A or consent of instructor. Designed to introduce to engineers and/or scientists of various disciplines the fluid mechanical aspect of pollution problems. The fluid dynamics of photochemical smog, oil slicks, and pollution in waterways. Mr. Liu (F)

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)

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 (Sp)

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 (F)

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's theory; moving sources. Similarity methods. Selected detailed applications. Mr. Meecham (W)

253C. Sound and Vibration. Prerequisite: consent of instructor. Theoretical analysis of the interaction of sound and structures; acoustic transmission through fluid layers and walls; structural wave propagation; multidimensional random processes using wave number and frequency space; response and radiation of infinite and finite structures; statistical energy analysis. Mr. Meecham

254A. Special Topics in Aerodynamics. Prerequisites: courses 150A, 150B, M192A, 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. Mengle (W)

255A. Advanced Dynamics. Prerequisites: courses 155 and M169A, or consent of instructor. Variational principles and Lagrange's 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's 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

256A. Mechanics of Deformable Solids. Prerequisites: courses 158A 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, Mr. Westmann (F)

256C. Plasticity, Creep, and Thermal Stresses. Prerequisite: course 156A or 158A 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. Westmann (Sp)

256F. Analytical Fracture Mechanics. Prerequisites: course 156A, 158A, 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. Westmann (Sp)

M257A. Elastic Wave Propagation I. (Same as Earth and Space Sciences M224A.) Prerequisite: course 158A or 166A or consent of instructor. Review of elasticity theory; elastic waves in unbounded media; reflection and refraction of plane elastic waves; surface waves and guided waves in multilayered media; waves generated by concentrated loads; radiation from dislocations; attenuation; representative applications in engineering and seismology. Mr. Mal (F)

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 the 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. Charwat (W)

259A. Seminar on 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 a term paper or an oral presentation (possible help from guest lecturers). Mr. Charwat (F)

259B. Seminar on 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. Westmann

260AA-260ZZ. Seminar: Current Topics in Mechanical Engineering (2 to 4 units each). (Formerly numbered 259AA-259ZZ.) 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 158A 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 a basis of finite element methods. Mr. Fleury (F)

262A. Advanced Mechanisms and Mechanical Systems. Prerequisite: course 162A. The kinematic analysis and synthesis of mechanisms and mechanical systems, with special emphasis on use of modern analytical methods. The use of computer techniques, with a broad group of example systems. Mr. Yang

263A. Dynamics and Control of Machines and Electromechanical Systems. Prerequisite: course 163 or consent of instructor. The analysis of complex machines and electromechanical systems. Emphasis on the performance and dynamic response of systems containing gears, elastic compliances, active feedback elements, and other complex components and subsystems. Application of both classical methods and modern computer-based techniques. Mr. Yang (Sp)

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. Motion and Control of Industrial Robots. Prerequisite: course 163A or consent of instructor. Theory and implementation of industrial robots. Design considerations. Kinematic structure, modeling, trajectory planning, and systems dynamics. Control concepts and control computer algorithms. Mr. Yang (W)

M267A. Optimum Structural Design. (Same as Civil Engineering M267A.) Prerequisite: course 261A or Civil Engineering 265A 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. Schmit (W)

268B. Failure of Structural Systems. Prerequisite: Civil Engineering 165B. Philosophy of structural safety. Principles of design for prevention of failure (other than buckling). Fatigue, brittle failure, delayed cracking, creep, design of efficient joints, environmental effects. Emphasis on current problems in actual structures. Mr. Sines (F)

M269A. Dynamics of Structures. (Formerly numbered 269A.) (Same as Civil Engineering M269A.) Prerequisite: course M169A. 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. Friedmann (Sp)

269B. Advanced Dynamics of Structures. Prerequisites: course M269A, Civil Engineering 265A. Analysis of linear and nonlinear response of structures to dynamic loadings. Stresses and deflections in structures. Structural damping and self-induced vibrations. Mr. Friedmann

M269C. Introduction to Probabilistic Dynamics. (Formerly numbered 269C.) (Same as Civil Engineering M269C.) Prerequisite: course M169A. 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.

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. Friedmann (Sp)

271A. Dynamic Systems Optimal Control. (Formerly numbered Engineering Systems 271A.) Prerequisite: course 171C or consent of instructor. Optimal control problem formulation. Performance criteria for deterministic dynamic systems. Variational methods and Pontryagin's 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. Mingori (F)

271B. Dynamic Systems Stochastic Estimation and Control. (Formerly numbered Engineering Systems 271B.) Prerequisites: courses 171C, 193A, 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; the separation principle. Emphasis on efficient numerical computations. Applications in various fields. Mr. Leondes (W)

271C. Dynamic Systems Identification, Stability, and Adaptive Control. (Formerly numbered Engineering Systems 271C.) 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. Leondes (W)

271D. Seminar and Special Topics in Dynamic Systems Control. (Formerly numbered Engineering Systems 271D.) 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. Leondes (Sp)

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 (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 (Sp)

291C. Integral Equations in Engineering. (Formerly numbered Engineering 291C.) 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. Westmann (Sp)

295A. Computer-Aided Manufacturing. Prerequisites: courses 94, 163A, 163L, 195L. Analysis of the usage of the computer in manufacturing. Manufacturing information systems; group technology; computer-aided manufacturing process planning; flexible manufacturing systems. Mr. Melkanoff (F)

295B. Computer-Integrated Manufacturing. Prerequisite: course 295A. Systems analysis and design of computer-integrated manufacturing, including automated factories and flexible manufacturing systems. Mr. Melkanoff (W)

298. Seminar in 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. A teaching apprenticeship under the 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. Okrent (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 the design of manufacturing engineering systems at various manufacturing plants. In Progess grading.

Mr. Melkanoff (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 the 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 Programs, Courses, and Faculty

6426 Boelter Hall, (213) 825-2473

Bachelor of Science in Engineering

The bioengineering major field is an interdepartmental program leading to a Bachelor of Science degree in Engineering. A description and requirements follow.

Bioengineering Major Field

Area I

Area I is an area of specialization within the context of the major fields of chemical engineering, civil engineering, etc., and is designed to provide (1) engineering fundamentals and (2) specialization in a basic engineering discipline combined with bioengineering and life science courses.

This area of specialization within bioengineering is intended for students who wish to emphasize a traditional engineering discipline (e.g., civil, electrical, chemical) while preparing for a possible career and/or graduate study in bioengineering.

Course requirements are as follows:

(1) Eight recommended core courses: Chemical Engineering M105A (or Mechanical, Aerospace, and Nuclear Engineering M105A), Civil Engineering 108, Electrical Engineering 100, 102, Materials Science and Engineering 14, Mechanical, Aerospace, and Nuclear Engineering 102, 103, and Chemical Engineering M105D or Mechanical, Aerospace, and Nuclear Engineering M105D (for applied biochemistry) or Engineering 106B (for biostructural mechanics and biotechnology).

If you substitute courses for any of the recommended courses listed above, you must satisfy the **engineering curriculum core** requirements as follows:

The core consists of eight courses (32 units) selected from the five subject areas listed below. The minimum and maximum number of units allowed is given for each.

Computer Processes (0 to 4 units): Electrical Engineering 103.

Electrical Sciences (4 to 8 units): Electrical Engineering 100, 101.

Mechanics (8 to 12 units): Civil Engineering 108, Mechanical, Aerospace, and Nuclear Engineering 102, 103.

Systems (4 to 8 units): Electrical Engineering 102, Engineering 106B.

Thermal and Materials Science (8 to 12 units): Chemical Engineering M105A, M105D (or Mechanical, Aerospace, and Nuclear Engineering M105A, M105D), Materials Science and Engineering 14.

(2) Civil Engineering 106A (satisfies the engineering economics requirement); one upper division mathematics course selected in consultation with your faculty adviser; and the following courses, depending on your subject area:

Applied Biochemistry: Chemical Engineering 137A, 137B, 137D, Computer Science 196A, M196B, Engineering 106B, Materials Science and Engineering M107A, Mechanical, Aerospace, and Nuclear Engineering 180A, and two courses from Biology 146, 154, Chemistry 156; Chemical Engineering 139A and Engineering 106C (satisfy the laboratory requirement).

Biocybernetics: Civil Engineering 160, Computer Science 171, 196A, M196B, Electrical Engineering 111A, 115A, 131A, Materials Science and Engineering M107A, Mechanical, Aerospace, and Nuclear Engineering 171A or Electrical Engineering 141, Mechanical, Aerospace, and Nuclear Engineering 171C or Electrical Engineering 142; Electrical Engineering 100L, Biology 166 (two units of lab credit), and one additional laboratory course (satisfy the laboratory requirement).

Biostructural Mechanics: Civil Engineering 160, 165A, 165B, 166, M169A (or Mechanical, Aerospace, and Nuclear Engineering M169A), Computer Science 196A, M196B, Mechanical, Aerospace, and Nuclear Engineering 162B, Kinesiology 12B, 14, 122; eight laboratory units (Civil Engineering 157B and Mechanical, Aerospace, and Nuclear Engineering 157 are recommended; an additional two-unit laboratory course must be taken if course 157B is selected).

Biotechnology: Civil Engineering 174A, Computer Science 196A, M196B, Materials Science and Engineering M107A, 180B, Mechanical, Aerospace, and Nuclear Engineering 171A, 180A, 193B or Psychology 150, and two courses from Psychology 115, 120, Public Health 100B, 100C, 100D, 110; eight laboratory units (Engineering 106C and 106D are recommended).

(3) Required technical elective courses: Chemistry 11C/11CL, 21, 23, and 25 (may be used to satisfy the life science requirement) for applied biochemistry and biocybernetics; Kinesiology 12B, 14, and one free elective course for biostructural mechanics.

(4) English 3; Chemistry 11A, 11B/11BL; Computer Science 10C or 10F; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A, 8B/8BL, 8C/8CL, 8D/8DL; one life science elective course.

(5) A minimum of seven courses from the humanities, social sciences, and/or fine arts approved list (at least three must be upper division; at least three — with two upper division — must be in the same academic department or otherwise reflect coherence with respect to subject matter; and one must satisfy the engineering and science in society requirement, which may also be satisfied by one of the free elective courses).

(6) Three free elective courses, which must be used to satisfy the required technical elective courses for the applied biochemistry, biocybernetics, and biostructural mechanics subject areas.

Area II

Area II is a multidisciplinary major field consisting of a core of courses in bioengineering and the physical and life sciences, and provides (1) engineering fundamentals, (2) breadth in the physical and biological sciences, (3) breadth in several bioengineering disciplines.

This area of specialization within bioengineering is intended for students desiring broad exposure to these three subject areas in preparation for a career and/or graduate study in bioengineering, biological science, behavioral science, or medical or dental school. This area satisfies all the life science requirements, except biological chemistry, for the Ph.D. program in Bioengineering at UCLA.

Course requirements are as follows:

(1) Eight recommended core courses: Chemical Engineering M105A, M105D (or Mechanical, Aerospace, and Nuclear Engineering M105A, M105D), Civil Engineering 108, Electrical Engineering 102, 103, Materials Science and Engineering 14, Mechanical, Aerospace, and Nuclear Engineering 102, 103.

If you substitute courses for any of the recommended courses listed above, you must satisfy the **engineering curriculum core** requirements as follows:

The core consists of eight courses (32 units) selected from the five subject areas listed below. The minimum and maximum number of units allowed is given for each.

Computer Processes (0 to 4 units): Electrical Engineering 103.

Electrical Sciences (4 to 8 units): Electrical Engineering 100, 101.

Mechanics (8 to 12 units): Civil Engineering 108, Mechanical, Aerospace, and Nuclear Engineering 102, 103.

Systems (4 to 8 units): Electrical Engineering 102, Engineering 106B.

Thermal and Materials Science (8 to 12 units): Chemical Engineering M105A, M105D (or Mechanical, Aerospace, and Nuclear Engineering M105A, M105D), Materials Science and Engineering 14.

(2) Civil Engineering 160, Computer Science 171, 196A, M196B, Electrical Engineering 111A, 115A, Materials Science and Engineering M107A, Mechanical, Aerospace, and Nuclear Engineering 171A or Electrical Engineering 141; Electrical Engineering 100L, Biology 166 (two units of lab credit), and four additional laboratory units; Civil Engineering 106A or any other course that satisfies the engineering economics requirement; Electrical Engineering 131A or Mathematics 152A (satisfies the mathematics requirement); two elective courses selected in consultation with a bioengineering faculty adviser (e.g., acoustics, control systems, electronics, materials, computer science, mechanics, biotechnology, biocybernetics, etc.).

(3) A minimum of six life science core courses, including Biology 5 and 7 (may be used to satisfy the life science requirement), 166, Chemistry 21, 23, and at least one course from Chemistry 25 (may be used to satisfy the life science requirement), Kinesiology 14, Psychology 115; Chemistry 11C/11CL are required technical electives.

(4) English 3; Chemistry 11A, 11B/11BL; Computer Science 10C or 10F; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 8A, 8B/8BL, 8C/8CL, 8D/8DL; one life science elective course.

(5) A minimum of seven courses from the humanities, social sciences, and/or fine arts approved list (at least three must be upper division; at least three — with two upper division — must be in the same academic department or otherwise reflect coherence with respect to subject matter; and one must satisfy the engineering and science in society requirement).

(6) Three free elective courses which must be used to satisfy the required technical electives and other required courses in the life science core.

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.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 Courses

11. Patterns of Problem Solving. An introduction to patterns of reasoning in the process of problem solution and decision making. Exposure to concepts, theories, and techniques in the analysis and synthesis of total systems in our complex technological civilization. Mr. Rubinstein (F,W,Sp)

12. Applied Patterns of Problem Solving. Prerequisite: course 11. An application of the tools and methods discussed in course 11 to three specific problems of a social and technical nature.
Mr. Rubinstein (Sp)

Upper Division Courses

106B. Introduction to Design and Systems Methodology. Prerequisites: Computer Science 10C, Mathematics 32A, 32B, 33A, 33B. Theory of engineering design and synthesis. Models and modeling. Analysis, test, and evaluation. Methods for design optimization. Elementary decision theory. Student design projects. Mr. Rosenstein (F,W,Sp)

106C. Experimental Design Laboratory. Laboratory, eight hours. Prerequisite: course 106B or equivalent. Creative experimental projects for student designs in any engineering domain where individual students have preparation and interest, exemplifying the professional method. Predicted idealized performance compared to experimentally achieved realities. Student prize competition entries encouraged. (W)

106D. Engineering Systems Design Laboratory. Laboratory, eight hours. Prerequisites: course 106C, advanced senior standing. Similar to course 106C and normally a continuation thereof. Design projects generally emphasizing productivity, energy, environments, and process cost-benefit studies. (Sp)

109. The Engineer and Society. Prerequisite: senior standing. Selected lectures, discussions, oral and written reports related to creative engineering, its sociological and ecological impacts, present, future, and past relationships. Maximum student participation in topical selection and class structuring. Creativity and original thinking emphasized.
Mr. O'Brien (F,W,Sp)

176A. Introduction to Optimization Methods for Engineering Design. Prerequisites: Computer Science 10C, Mathematics 32A, 32B, 33A, 33B. Introduction to applied optimization as an engineering design tool. Computational algorithms and chemical, civil, electrical, mechanical, and structural applications. Methods for solving the general unconstrained and constrained minimization problem. Methods for converting the general inequality constrained problem to a sequence of unconstrained problems.
Mr. Rosenstein (F)

Graduate Courses

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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 the Engineering Executive Program. Theory and application of quantitative methods in the analysis and synthesis of engineering systems for the purpose of making management decisions. Optimization of outputs with respect to dollar costs, time, material, energy, information, and manpower. Case studies and individual projects. Mr. O'Neill

471A-471B-471C. The Engineer in the General Environment (3 units, 3 units, 1½ units). Limited to students in the Engineering Executive Program. Influences of human relations, laws, social sciences, humanities, and fine arts on the development and utilization of natural and human resources. The interaction of technology and society past, present, and future. Change agents and resistance to change. In Progress grading for courses 471B-471C only (credit to be given only on completion of course 471C).
Mr. O'Neill

472A-472D. The Engineer in the Business Environment (3 units, 3 units, 3 units, 1½ units). Limited to students in the Engineering Executive Program. The 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 the firm, the community, and the 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). Mr. O'Neill

473A-473B. Analysis and Synthesis of a Large-Scale System (3 units each). Recitation: two and one-half hours. Limited to students in the Engineering Executive Program. A problem area of modern industry or government is selected as a class project, and its solution is synthesized using quantitative tools and methods. The project also serves as a laboratory in organization for a goal-oriented technical group. In Progress and S/U grading. Mr. O'Neill

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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. S/U grading.

Schoolwide Engineering Faculty

Professor

Allen B. Rosenstein, Ph.D.

Emeritus Professors

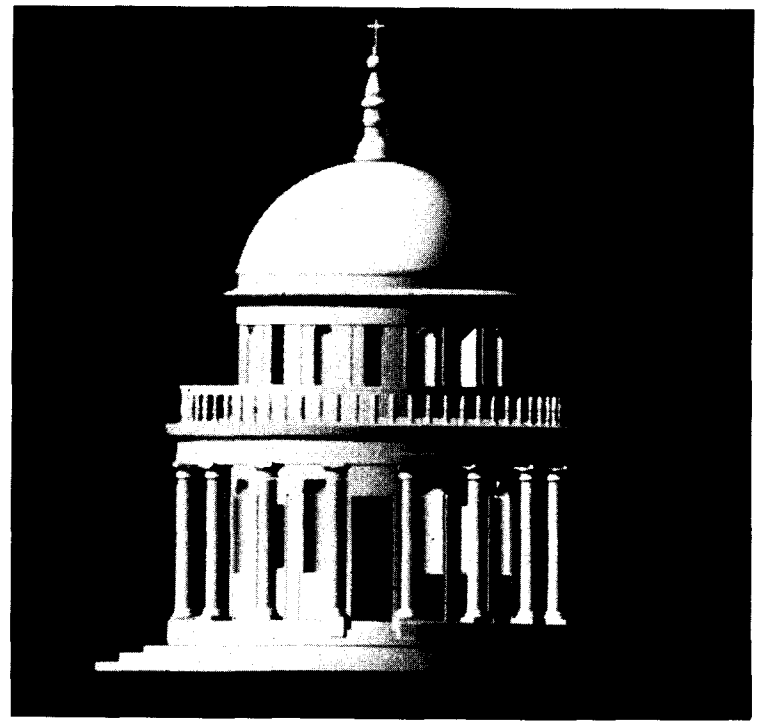
Edward P. Coleman, Ph.D.
J. Morley English, Ph.D.
Warren A. Hall, Ph.D.
Alfred C. Ingersoll, Ph.D.
Herbert B. Nottage, Ph.D.
Russell L. Perry, M.E.
Arthur F. Pillsbury, Engineer
Bonham Spence-Campbell, E.E.

Visiting Lecturers

Iris Firstenberg, Ph.D.
Thomas A. Sabol, Ph.D.

Graduate School of Architecture and Urban Planning

Richard S. Weinstein, Dean



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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) is playing an important role in understanding these changes and contributing to their direction.

Professional education is the central concern of GSAUP. Our belief is that a small, high-quality school of architecture and urban planning can make a great contribution to professional education, under conditions of rapid professional change and experimentation. 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 and various exhibits are scheduled throughout the academic year. In addition, the school has created the Urban Innovations Group (UIG) as an independent, nonprofit, professionally managed practice arm where faculty and students undertake projects on a contract basis to provide opportunities for students to gain practical professional experience.

A noted regular faculty is supplemented by distinguished visiting faculty. The student body comes from around the world. Developed as a small school with an enrollment of 350, GSAUP encourages close interaction between faculty and student to maximize the educational experience.

Photo: Architectural rendering produced by introductory computer graphics students on the school's Computervision system.

Graduate School of Architecture and Urban Planning

1317 Architecture, (213) 825-3791

The Graduate School of Architecture and Urban Planning at UCLA offers programs of study leading to the degrees of Master of Architecture (M.Arch.), M.A. in Architecture/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.

Degrees Offered

Architecture/Urban Design	M.Arch. I, M.Arch. II, M.A., Ph.D.
Urban Planning	M.A., Ph.D.

Architecture/ Urban Design

B315 Architecture, (213) 825-0525, 825-7857

Professors
Marvin Adelson, Ph.D.
Samuel Aroni, Ph.D.
Baruch Givoni, Ph.D.
Thomas S. Hines, Ph.D.
Lionel March, Sc.D., *Program Head*
Murray A. Milne, M.Arch.
Barton Myers, M.Arch.
Richard Schoen, M.Arch.
George Stiny, Ph.D.
Thomas R. Vreeland, Jr., M.Arch.
Richard S. Weinstein, M.A., *Dean*

Associate Professors
F. Eugene Kupper, M.Arch.
Jurg Lang, Dipl.Arch. ETH.
Robin Liggett, Ph.D.
George Rand, Ph.D.

Assistant Professors
Diane Favro, Ph.D.
Ben Refuerzo, M.Arch.

Lecturers
Berge Aran, Ph.D.
Charles Griggs, B.Arch.
Jeffrey Hamer, M.Arch.
Anthony Lumsden, B.Arch.
Donald Mills, B.Arch.
John Ruble, M.Arch.
Robert Yudell, M.Arch.

Adjunct and Visiting Professors
Charles Jencks, Ph.D., *Adjunct*
William J. Mitchell, M.E.D., *Visiting*
Charles W. Moore, Ph.D., *Adjunct*
Rex Lotery, B.Arch., *Adjunct*

Adjunct Associate Professors
Franklin Israel, M.Arch.
Kuppaswamy Iyengar, M.Arch.
Barton Phelps, 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, Architecture/Urban Design, Graduate School of Architecture and Urban Planning, B315 Architecture, UCLA, Los Angeles, CA 90024.

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: urban design; policy, programming, and evaluation (including social building); technology (including energy conserving design); design theory and methods (including computer-aided design); history, analysis, and criticism of architecture.

Course Requirements

You must complete a minimum of 27 courses, at least 24 of which must be graduate courses. The total number of units required is 108. The required courses, listed below, must be taken in the sequence indicated.

First Year
Fall: Courses 411, 421, 200
Winter: Courses 412, 437, 431
Spring: Courses 413, 442, 432

Second Year
Fall: Courses 414, 433, 291, elective
Winter: Courses 415, 441, elective
Spring: Elective studio/project, plus two other electives

Third Year
Fall: Course 416, two electives
Winter: Elective/studio, course 461, elective
Spring: Course 598A

Elective courses allow you to explore in depth specific subject areas and to gain exposure to a variety of topics. You are required to take a minimum of seven elective courses. At least four of these must be taken within the school.

During the second year at least two electives must be in preparation for undertaking a specific studio or project in the Spring Quarter of your second year.

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. However, permission to waive required courses does not reduce the minimum number of 27 courses required for the M.Arch. I degree nor does it reduce the nine-quarter 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.

Students with undergraduate degrees in architecture or undergraduate degrees with majors in architecture may, at the end of their first quarter, petition the curriculum committee for advanced standing. You are then permitted to waive specified required courses and may enter second-year courses at the beginning of your second quarter. A petition for advanced standing should include a transcript documenting relevant prior academic work, a portfolio demonstrating level of design competence, and a plan showing how waived courses will be replaced by a program of elective work in specified areas of specialization. Advanced standing requires the concurrence of both the curriculum committee and the faculty member in charge of each specific course to be waived. It does not reduce the number of courses (27) required for the M.Arch. I degree nor does it reduce the nine-quarter residence requirement.

You must enroll in at least four and no more than eight units of Architecture and Urban Planning 598A. You may also apply eight units of course 596A toward the unit requirements for graduation with prior consent of your adviser. No more than eight units may be applied without consent of the curriculum committee; application of more than 16 units requires Graduate Division approval. A maximum of eight units of 596 courses taken outside the school may be applied toward graduation. All independent work is graded on an S/U basis.

Thesis or Comprehensive Examination Plan

M.Arch. I students generally present a large-scale design project that functions as a design thesis at the end of their three-year course of study. Occasionally, students who have already demonstrated superior design skills will elect to do more research-oriented work instead. Because of the format required by the nature of an architectural presentation, the projects are all classified as "comprehensive examinations."

You should obtain faculty approval of project topics at least three months, and preferably six months, before presentation dates.

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 and your choice of the comprehensive examination or thesis option on your application, as you are admitted to a specific major and option and may change only by petition to the advanced graduate studies curriculum committee. A minimum of three academic quarters 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 quarter in residence, take any required English (ESL) 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 include architectural design; urban design; policy, programming, and evaluation; technology; design theory and methods; and history, analysis, and criticism of architecture.

Course Requirements

A minimum of 36 units of coursework (normally nine four-unit courses) is required. At least 24 units must be at the graduate level; the remaining 12 units may be either upper division or graduate courses. No more than eight units of Architecture and Urban Planning 596A may be applied toward the requirements for graduation. In addition to coursework, four units of course 597A or eight units of course 598A are required but may not be applied toward the minimum course requirements.

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 design must complete a year-long sequence of related urban design studio and seminar courses consisting of one studio and one seminar course each quarter.

Students in the other four major areas (policy, programming, and evaluation; technology; design theory and methods; history, analysis, and criticism of architecture) 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 written thesis or a design project. A three-person thesis committee must be established at least one quarter before submission of the thesis, and you must take eight units of Architecture and Urban Planning 598A, which may not be applied toward the minimum course requirement. The thesis may, in exceptional cases, be presented after three quarters in residence, but you should normally expect to take from four to six quarters to complete the thesis plan. 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 chair at least one quarter before taking the examination and to receive approval of an examination topic from the curriculum committee. You are then required to take four units of Architecture and Urban Planning 597A, which may not be applied toward the minimum course requirement. The examination consists of a research paper or design project on the approved topic, which is to be publicly presented and defended after the completion of all required coursework, usually at the end of the Spring Quarter, or at any point up to 12 months later. The faculty examination committee votes on acceptance or rejection. In the event of rejection, you may repeat the examination once.

Master of Arts in Architecture/Urban Planning

Admission

This program offers an academic degree and prepares students to do specialized research or teaching in fields related to the architectural profession. 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, Architecture/Urban Design, 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

You are required to focus your work on a specific academic area or professional issue. See "Major Fields" under the Ph.D. program for specializations currently available. 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.

Course Requirements

(1) Candidates for the M.A. are expected to be in residence at UCLA for at least two years and undertake six quarters of study.

(2) A thesis or a comprehensive design project is required. When the committee members have signed the thesis proposal, you may take 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.

(3) You are required to complete a minimum of 16 courses (64 units) of graduate or upper division work, at least 12 of which must be graduate courses.

(4) You must select and pursue one area of specialization.

(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 with prior consent of your adviser. No more than 12 units may be applied without the consent of the curriculum committee; application of more than 16 units requires Graduate Division approval. A maximum of eight units of course 596 taken outside the school may be applied toward graduation. All independent work is graded on an S/U basis. (Courses in the 400 series may not be applied toward the graduate course requirement for the M.A. degree.)

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 resume, 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; (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 at an early stage to assure adequacy of research skills. You may apply for this evaluation no earlier than your second quarter in residence, and no later than the fourth quarter. 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 apply for reevaluation 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 quarter, 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: policy, programming, and evaluation; technology; design theory and methods; and history, analysis, and criticism of architecture.

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 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.

(1) 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.

(2) Satisfactory reading knowledge of two foreign languages relevant to your field of specialization (a GSFLT score of 500 or better).

(3) Superior knowledge of one foreign language relevant to your field of specialization (a GSFLT score of 700 or better).

With approval of the Graduate Division, English may be used to satisfy the foreign language requirement if your language of education is not English.

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 in the program is required to take a proseminar in architectural theory, normally in the 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 quarters 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 quarters in residence and 36 units of coursework. All other candidates are required to complete six quarters 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 an 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 at least 24 units of basic professional courses (400 series) in architecture 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 the preliminary evaluation of research skills, the mathematics, computing, or foreign language requirements, and the course 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 quarter and must not extend over more than two quarters.

The major and minor field examinations are conducted by a five-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. An introduction to urban planning and urban design, with emphasis on methods and tools used in practice. An overview of the 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 the framework for expanding the understanding of the urban planning and design process.
Mr. Kamnitzer

190. The Human Environment: An Introduction to Architecture and Urban Planning. The kinds of problems that arise in creating and maintaining an environment for urban activities, and the approaches and methods of architecture and urban planning in helping to cope with such problems. The complexities involved in giving expression to human needs and desires in the provision of shelters and movement systems, to the possibilities and limitations of technology and building forms, and to the issues involved in relating the human-made to the natural environment. Students are encouraged to comprehend the major urban issues both as citizens and as potential technical experts. Mr. Rand (F)

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. Introduction to the History of Architecture. Lecture, three hours. A survey of Western architecture from prehistory to the present day. Examination of not only architectural styles, but the aesthetic, social, political, economic, technological, and theoretical determinants of built form and different methods of analyzing our architectural heritage. Ms. Favro

201. Introduction to Architectural Theory. (Formerly numbered 201A.) Lecture, three hours. A broad overview of major architectural theorists from antiquity to the early 20th century. Exposure to the content of theoretical writings and to the complex cultural, philosophical, and pragmatic concerns which stimulated the evolution of architectural ideas in different contexts. Ms. Favro

203. Decision Making in Planning and Design. (Formerly numbered 203A-203B.) Lecture, three hours. Exploration of the 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 the 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. Design Theory. (Formerly numbered 224.) Lecture, three hours. Examination of design as a cultural enterprise in which rules are adopted and then followed to compose, describe, and evaluate designs. Development in detail of contemporary and historical examples from architecture, painting, sculpture, and other fine and applied arts.
Mr. March, Mr. Stiny (F,W)

226A. Computer Graphics. (Formerly numbered 227A.) Lecture, three hours. Use of graphics examples and practical graphics programming exercises to introduce basic concepts of computer programming in the PASCAL language. Provides the foundation necessary to undertake more advanced work in computer-aided design. Ms. Liggett (F)

226B. Computer Applications in Architecture and Urban Planning. (Formerly numbered 227A.) Lecture, three hours. Prerequisite: course 226A or equivalent. The logic of problem solving using the computer, with emphasis on algorithms and data structures specifically applicable to architecture, urban design, and planning. Ms. Liggett

227A. Computer-Aided Design I. (Formerly numbered 226B.) Lecture, three hours. Prerequisite: course 226A or consent of instructor. An introduction to geometric modeling and design data bases using interactive computer graphics systems: two-dimensional drawings, wireframe modeling, surface modeling, and solid modeling. Mr. Mitchell (W)

227B. Computer-Aided Design II. (Formerly numbered 226B.) Lecture, three hours. Prerequisite: course 227A or consent of instructor. Selected advanced topics in computer graphics and computer-aided design: three-dimensional geometrical modeling, color, realistic rendering, and interfaces for CAD systems. May be repeated for credit.

228A-228B. Computational Foundations of Architectural Design. Lecture, three hours. Prerequisite: consent of instructor. An introduction to the 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. March, Mr. Stiny (F,W)

242. Climate Responsive Design. Prerequisite: professional degree in architecture or consent of instructor. The theory and method of design of buildings which specifically respond to local climate; an 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. The geometric description of a building and the computerized modeling of its instantaneous energy flows, using one of the large energy analysis computer programs such as DOE 2.1B. Mr. Milne

247A. Introduction to Energy-Conserving Solar Design. (Formerly numbered 446.) Lecture, three hours. Energy and alternative resource-conscious design integration into architectural and urban design; passive, active, and photovoltaic solar/wind systems; concepts of loads, energy flows worldwide, Third World, U.S.A., and within buildings and communities, stressing professional practice applications. Field trips. Mr. Schoen

247B. Energy-Conserving Solar Design and Practice. (Formerly numbered 446.) Lecture, three hours. Prerequisites: course 247A and one climatology course, or consent of instructor. Extension of concepts and sizing of systems introduced in course 247A; stand-alone approaches particularly in developing countries, integration of resource-responsive vernacular architecture with contemporary forces, programming for course 403B. Mr. Schoen

255A-255B. Climatic Issues in Urban Design. (Not the same as course 255 prior to Fall Quarter 1986.) Seminar, three hours. An in-depth examination of the impact of urban design (e.g., urban density, urban profile, public parks) on some aspect of the urban climate, such as urban temperature, wind field, solar radiation availability, etc. Mr. Givoni

258. Urban Morphology. (Formerly numbered 255.) Lecture, three hours. Exploration of urban space from a structuralist perspective. Primary emphasis on the 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. A multidisciplinary approach leading to an understanding of the 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 the 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 the development process with proposed design solutions which are iteratively modified to meet economic feasibility tests. Mr. Kamnitzer

274. Introduction to Physical Planning. Lecture, three hours. An assessment of physical planning that analyzes contemporary approaches to the built environment, reviews historical antecedents and considerations for the future, focuses on issues and techniques used by planners, and gives students an understanding of the issues and skills with which to carry out land-use and policy recommendations. Ms. Leavitt

278. Research Methods in Human-Environment Relations. Lecture, three hours; discussion, two hours. A survey of a variety of research methods applicable to problems on the human-environment interface, including both those now frequently employed (survey research) and others that emphasize qualitative research methods (e.g., participant observation, photographic observation). Emphasis on the application of research methods to selected exercises and specific field situations, drawing on students' own research interests. Ms. Leavitt

279. Housing for Developing Countries. (Formerly numbered 279A.) Discussion, three hours. Considerations of sociocultural, economic, and political factors, materials, structural systems, shelter accessories, and manufacturing technologies related to the priorities of developing countries in housing policies and the planning and design of shelter. Mr. Aroni (Sp)

281. Introduction to the History of the Built Environment in the United States. Lecture, three hours. Open to advanced undergraduates with consent of instructor. An introduction to American urban, environmental, and architectural history, a survey of the main economic, political, social, and aesthetic forces forming the built environment. The Colonial period to the present, with emphasis on the importance of the spatial design of cities and buildings to public policy. Ms. Hayden

282A. Roots of Modernism. (Formerly numbered 189.) Lecture, three hours. An overview of developments in Western architecture during the 18th and 19th centuries, covering the Romantic and historicist trends of the 1700s, the eclectic preferences of the 1800s, and turn-of-the-century premodern developments including art nouveau. Mr. Jencks

282B. Modern and Postmodern Architecture. (Formerly numbered 189.) Lecture, three hours. An examination of 20th-century architectural developments from the revolutionary concepts of the modern movement, including their manifestations in the international style, to the current eclectic trends of postmodernism. Mr. Jencks

283. History of the American Household and the American Home. Lecture, 90 minutes; discussion, 90 minutes. Prerequisite: course 281 or consent of instructor. An introduction to the history of housing design in the United States, emphasizing the changing roles of women and men from Colonial times to the present and the effects of these social changes on the physical form of the dwelling and the settlement. Discussion of the concerns of professional architects and planners, as well as the activity of bankers, builders, and homemakers. Ms. Hayden

284. The Ideal City in History. Prerequisite: course 281 or consent of instructor. Since the time of Thomas More's *Utopia*, creating the ideal city has been a favorite device used by novelists, political theorists, economic and social critics, and architects to criticize existing society and demonstrate the dramatic possibilities of thoroughgoing reform. The utopian tradition in its literary, political, and aesthetic forms, examining satirical cities, moral cities, and urban fantasies from the 16th century to the present. Ms. Hayden

286A-286B. Ancient Architecture. (Not the same as course 286 prior to Fall Quarter 1986.) Lecture, three hours. A 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 to 1500. Lecture, three hours. Prerequisite: consent of instructor. A 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. (Formerly numbered 288.) 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 member of the faculty. May be repeated for credit.

290. History and Theory of Landscape. Lecture, three hours. A historical introduction to principles of garden and landscape design. Exploration of key issues through case studies of gardens and landscape from a wide variety of physical and climatic settings, cultural contexts, and periods. Mr. Mitchell, Mr. Moore

291. Theory of Architectural Programming. Lecture, three hours. Exploration of concepts and methods of architectural programming and its interrelation to the design process; planning of the design process; various techniques for the determination of program contents, basic conditions, resources, and constraints; the identification of solution types for given situations. Mr. Rand (F)

292. Social Meaning of Space. (Formerly numbered 298.) Discussion, three hours. The evolution of the 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 the spatial order of the human-made environment. Mr. Rand

294A-294B. Environmental Psychology. Lecture, three hours. Introduction to models, concepts, and theories concerning the 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 in Architectural Theory. (Not the same as course 296 prior to Fall Quarter 1986.) Seminar, three hours. An orientation for Ph.D. students to the tradition of architectural theory, scholarship, and research and to current research directions and questions, through intensive reading and critical discussion. Mr. Stiny

297. Group Process in Design. Lecture, two hours; discussion, two hours; laboratory, two hours. Prerequisite: consent of instructor. Designed to equip students with the 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. Lecture, three hours. Prerequisite: consent of instructor. An 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. A teaching apprenticeship under the 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. Project with Specific Topic. (Formerly numbered 403A-403H.) Studio, eight hours. Prerequisites: prior courses of particular sequence or consent of instructor. May be repeated for credit:

403A. Projects in Policy, Programming, and Evaluation.

403B. Projects in Technology.

403C. Projects in Design Theory and Methods.

403D. Projects in History, Analysis, and Criticism of Architecture. (F,W,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. The latter part of the course is spent in the design of a small building in which previously acquired knowledge is synthesized into a single design. (F)

412. Building Design Studio. Studio, 12 hours. Prerequisite: course 411 or consent of instructor. The design of the project starts with the exploration of the architectural program in relation to the design process and, particularly, the implications of the program on architectural forms and concepts. In a second phase, structural elements are introduced to fulfill the program requirements and to support and further develop the intended forms and concepts. (W)

413. Building Design with Landscape Studio. Studio, 12 hours. Prerequisites: courses 411 and 412, or consent of instructor. 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 I. Studio, 12 hours. Prerequisite: second-year standing. 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, environmental controls, physical context, and the 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 the 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 quarter of third year, consent of instructor. Course completes the regular required sequence of design work, preparing students for the third-year thesis preparation course. 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. Architectural Drawing. Discussion, three hours; laboratory, three hours. Description of architectural drawing techniques and skills, including sketching, diagraming, freehand drawing, drafting techniques, introduction to axonometric projection and perspective. (F)

422. Advanced Architectural Drawing (2 to 4 units). Discussion, three hours; laboratory, three hours. Prerequisite: course 421 or consent of instructor. Emphasis on the exploration of the interrelationship between drawing and design. More advanced design strategies and modes of graphic exploration and presentation. (W)

431. Structures I. Lecture, three hours. Prerequisites: basic algebra, geometry, trigonometry, consent of instructor. Introduction to structural behavior and structural statics. Operations with forces and vectors, 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. Determinate frames. Plane trusses: analysis and design. Mr. Aroni, 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. Aroni, 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. Aroni, 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. Mr. Aroni (W)

436. Building Construction. (Formerly numbered 437.) Lecture/studio, eight hours. 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. Mills, Mr. Schoen (W)

437. Construction Documents. (Formerly numbered 436.) 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.A. 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. Lecture, three hours. Prerequisite: consent of instructor. The design of the mechanical systems necessary for the functioning of large buildings: air handling, fire and life safety, plumbing, vertical and horizontal circulation, communication and electrical power distribution, analysis of the interaction of these systems and their integrated effects on the architectural form of a building. (W)

442. Building Climatology. Prerequisite: basic physics. The design of buildings which specifically respond to the 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. Givoni, Mr. Milne (Sp)

443A. Passively Integrated Solar Systems: Heating. (Formerly numbered 443.) Prerequisites: courses 242 and 442, or consent of instructor. Analysis of the different passively integrated solar systems for heating 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. Mr. Givoni (W)

443B. Passively Integrated Solar Systems: Cooling. (Formerly numbered 443.) Prerequisites: courses 242 and 442, or consent of instructor. Analysis of the different passively integrated solar systems for 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. Mr. Givoni (Sp)

444. Light and the Visual Environment. Prerequisite: a course in building climatology or consent of instructor. Exploration of the extent to which the physical form of a building controls the luminous environment of its occupants; the design of naturally and artificially illuminated environments; parameters of human visual comfort. Mr. Milne

445. Sound and the Auditory Environment. Lecture, two to four hours. Prerequisite: course 442 or consent of instructor. Exploration of the extent to which the physical form of a building controls the acoustic environment of its occupants; the design of spaces for auditory privacy and for auditory enhancement; parameters of human audition. Mr. Milne

448. Communication and Diffusion of Innovation. Seminar, three hours. Innovation in the building industry and the design professions. Successful creation and introduction of innovative products, processes, and technologies. Students are expected to contribute to the meager literature of the field through case studies and projects. Visitors and field trips. Mr. Schoen

460. Computer-Aided Design Practice. (Not the same as course 460 prior to Fall Quarter 1986.) Lecture/seminar, three hours. An introduction to professional practice in a context of computer technology — planning for introduction of computer technology, system selection, education and training issues, operational issues, costs, benefits and financial implications, ethical issues. Mr. Hamer

461. Architectural Practice. Seminar, three hours. Historical development of the profession; the role of the architect in contemporary society, current forms of practice and emerging trends. Contractual relationships, ethical responsibility, office management and promotion. Case studies of the practical process. Mr. Phelps (W)

490. Urban Innovations Group Workshop (4 to 8 units). Laboratory. Prerequisite: consent of workshop staff. Applied research and development work in the Urban Innovations Group workshop under the supervision of the workshop staff. Client-oriented projects concerned with significant urban, social, or technical problems of the physical environment. May be repeated for credit. (F,W,Sp)

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 member of the faculty. 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 member of the faculty. May be repeated for credit.

596A. Directed Individual Research and Study in Architecture and Urban Design (2 to 8 units). May be repeated for credit.

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.

599A. Ph.D. Dissertation Research in Architecture (2 to 8 units). Prerequisite: doctoral standing. May be repeated for credit. S/U grading.

Urban Planning

1125J Architecture, (213) 825-7331, 825-8957

Professors

Leland S. Burns, Ph.D.
John Friedmann, Ph.D., *Program Head*
Dolores Hayden, M.Arch.
Peter Kamnitzer, M.Pl.
Peter Marris, B.A.
Donald Shoup, Ph.D.
Edward W. Soja, Ph.D.
Martin Wachs, Ph.D.

Associate Professors

Leobardo Estrada, Ph.D.
J. Eugene Grigsby III, Ph.D.
Allan Heskin, Ph.D., LL.B.
Jacqueline Leavitt, Ph.D., *Acting*
Robin Liggett, Ph.D.

Assistant Professors

Margaret FitzSimmons, Ph.D.
Rebecca Morales, Ph.D.
Paul Ong, Ph.D.
Michael Storper, Ph.D.

Adjunct Associate Professor

Karen Hill Scott, Ed.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 government, and increasingly with private companies whose products and services affect the urban environment. While most UCLA graduates find positions in the United States, 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 are available which enable students to combine study for an M.A. in Architecture/Urban Planning with work toward an M.B.A. in the 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. A number of student organizations provide an interesting program of extracurricular activities.

Requirements for Graduate Degrees

Admission

The Urban Planning Program admits students in the 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, Urban Planning Program, Graduate School of Architecture and Urban Planning, 1125J Architecture, UCLA, Los Angeles, CA 90024.

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 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. Refer to "Proficiency in English" under "Graduate Admission" in Chapter 3 for further information.

A maximum of two work samples may be submitted in support of the application (e.g., reports, papers, slides, etc.). Work samples will be returned only on request. (Applicants in the U.S. must enclose a self-addressed, stamped envelope.)

Areas of Concentration

You should select an area of concentration by the end of your first quarter 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:

Urban and Regional Development: Rural poverty and urban migration, unemployment, the problems of economically depressed areas, and the deterioration of inner-city neighborhoods all present problems which call for comprehensive analysis and innovative solutions. Within this area, you are expected to select an emphasis either on developments within the United States and other advanced industrial nations, with a focus on community, or on problems of development in newly industrializing countries.

Social Policy and Analysis: This field of study concentrates on services, approaching questions of equity and social structure through the planning and analysis of services that are supplied publicly or semipublicly. It is concerned with the economic, political, and social context of service delivery systems, with analytic techniques for planning and evaluating them, and with the implications of different ways of financing them.

Natural Environment and Resources: 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, consequences which appear both as environmental hazards to human health and well-being and as problems in the management of natural resources. 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 and architecture. It deals with the social and economic forces affecting the built environment and with the built environment on an urban scale. Within this area, you can select one of three specializations: history, theory, and criticism of the built environment; public policy and the built environment; or urban design and physical planning.

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.

International Development Studies: If you wish to focus your studies on policy and planning problems of newly industrializing countries, you can do so in the context of one of the

major areas of concentration. Coursework is currently offered in rural development, urbanization policies, housing, the environmental impacts of resource-based development, spatial policies for development, and the role of women in development. In addition, a number of courses are concerned with the evolving world economy, general development issues, and related ideological questions.

In its four Area Studies Centers, UCLA has major institutional resources that facilitate research and furnish a rich environment in which to study development issues in a global context. Opportunities for work exist with international agencies, voluntary agencies, and foreign governments. Doctoral students are encouraged to pursue careers in teaching, research, and consulting.

Students wishing to pursue comparative development studies at either the M.A. or Ph.D. level should contact Professor John Friedmann.

Master of Arts in Architecture/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 quarter, 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. Seven core courses are required: Architecture and Urban Planning 207, 220A (waiver by examination), 220B, two core courses in theory and context, and two additional courses (three if course 220A is waived) from a selection of 12 remaining core courses in methods, theory and context, and/or practice.

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 quarter 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 five; two are generally specified.

Fieldwork Requirement: Two fieldwork courses (eight units) are required (subject to waiver).

You are encouraged to seek waivers for requirements which have been met in your previous education.

Thesis 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 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. 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 the Fall Quarter of your second year. Academic credit for thesis preparation is given through Architecture and Urban Planning 598P (four units each in Fall, Winter, and Spring Quarters).

Comprehensive Examination Plan

If you select the comprehensive examination option, you may choose either Plan A or Plan B.

Plan A (Long-Term 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).

As an alternative under Plan A, you are encouraged to take courses 217A-217B (group comprehensive project sequence), offered Winter and Spring Quarters, to fulfill the comprehensive examination requirement.

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 three faculty members (appointed by the area of concentration coordinator) offers, reads, and grades the examination. No course credit is received.

Fieldwork

Master's students who come to the Graduate School of Architecture and Urban Planning without prior experience in planning are required to complete eight units of fieldwork. Fieldwork is defined as clinical or "real world" experience with a planning office, a private organization involved in planning, a community action agency, or applied research within a clinical context (excluding conventional university-based research projects). Details on fulfilling this requirement are available in the program office.

Concurrent Degree Programs

J.D./M.A.-Architecture/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.B.A./M.A.-Architecture/Urban Planning

The Graduate School of Architecture and Urban Planning and the 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 should request all application materials from the M.B.A. Admissions Office, Graduate School of Management. Further details may be obtained from the graduate counselor in the Urban Planning Program.

M.A.-Latin American Studies/ M.A.-Architecture/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 policymakers working in Latin America. The concurrent degree program provides an integrated curriculum through which students can devel-

op 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.

Ph.D. in Urban Planning

Admission

Students admitted to the Ph.D. program in Urban Planning must have a master's degree in planning or a closely related field.

You must have a minimum 3.5 grade-point average in all graduate work completed for consideration for the Ph.D. program. Employment experience in planning or a closely related field is strongly recommended.

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 obtain the necessary language skills prior to beginning such research.

Course Requirements and Qualifying Examinations

You must demonstrate a high level of competence in a major field, a minor field, and in planning theory as measured by coursework and doctoral examinations. In addition, you must satisfy a requirement in research methods and are required to take Architecture and Urban Planning 208 to aid in preparation of dissertation research and writing.

Planning Theory Requirement

Planning theory is concerned with the ideas which have influenced planning since the beginning of the 19th century and with philosophical issues in societal guidance and social transformation.

You are required to take Architecture and Urban Planning 210A, 210B, and 210C and to present, at the end of your third quarter, an original research paper on a topic related to planning theory selected in consultation with faculty. The planning theory requirement should be completed in your first year in the program, prior to taking the major field examination.

Research Methods Requirement

The research methods field covers a variety of techniques useful for collecting, organizing, processing, and analyzing information for planning decisions. The methods to be covered emphasize statistics and their application to urban and regional studies and planning. Statistical tools include probability theory, probability distribution, sampling, survey methods, estimation techniques, hypothesis testing, analysis of variance, correlation, regression, and factor analysis. You may also study methods which address research of a more qualitative nature, including ethnomethodology, anthropological field methods, historiography, and Marxist methodologies.

To fulfill the research methods requirement, you must complete a sequence of three methods courses beyond the introductory level with a grade of B or better. In order to meet a minimum requirement in statistics, one of the three courses must be Architecture and Urban Planning 220B or the equivalent. The courses must be approved by your adviser and should begin during your first year in the Ph.D. program.

Major Field Examination

The major field examination tests your competence in a substantive area of study in planning. Following a prescribed process (available in detail from the graduate counselor), a committee of three faculty members is appointed by the program head to supervise your preparation for the field examination, which normally takes from six months to a year following successful completion of the planning theory requirement. The examination has two parts — one written, one oral. The written part is given each quarter simultaneously to all students on the Friday of the seventh week of classes; the oral part is given before the end of the same quarter. You may receive academic credit for the preparation of the examination by enrolling in Architecture and Urban Planning 597P.

Minor Field Requirement

The minor field requirement is intended to provide a breadth of knowledge which extends beyond the specific area of the major field. This requirement is closely adjusted to your dissertation focus and is fulfilled by taking 12 units of coursework, with grades of B or better, in a related field approved by your principal adviser.

Oral Qualifying Examination

After successful completion of the planning theory, research methods, and major and minor field requirements, you may petition the Graduate Division for approval of your doctoral committee.

The doctoral committee administers the University Oral Qualifying Examination at which you defend your dissertation prospectus. To assist in the development of the proposal, you are required to complete Architecture and Urban Planning 208.

The University Oral Qualifying Examination is normally taken by the end of your third year of doctoral study.

Final Oral Examination

This examination, which is optional at the discretion of the doctoral committee, involves a defense of the completed dissertation.

Upper Division Courses

179. Variable Topics in Urban Planning (2 to 8 units). Lecture, three hours. A 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

190. The Human Environment: An Introduction to Architecture and Urban Planning. See listing under "Architecture/Urban Design." Mr. Rand (F)

M195. Engineering and Environmental Geology. (Same as Earth and Space Sciences M139.) Lecture, two and one-half hours. Prerequisite: Earth and Space Sciences 1 or 100. Recommended: Earth and Space Sciences 111A. 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. Merifield (W)

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 the Alternatives Inner-City Future Exercise, (2) each student is expected to identify the 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. Estrada

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.) Analysis of the legal and administrative aspects of the regulation of land use and development, and the problems and techniques of urban planning; dwelling legislation, building codes, zoning, subdivision controls, public acquisition of land, tax controls, and urban development.
Mr. McGee

M202B. Governance: State, Regional, and Local (3 to 4 units). (Same as Law M285.) Lecture, three hours. Legal problems involving local governmental entities; sources and extent of powers and duties with respect to personnel, finance, public works, community development, and related topics.

M202C. Seminar: Urban Affairs (3 to 6 units). (Same as Law M526.) Exploration in a concrete case setting of the application of legal tools to the solution of planning and land-use problems. Real situations are selected in which significant planning problems exist that appear to be amenable to solution by careful analysis and application of legal tools. A number of case studies are selected so that students may choose one issue which directly interests them. For each case, a specific client works with the class in presenting the problem that client is facing and remains available through the course of the project for consultation; the end product for each case is the presentation of a formal report. Clients include the City Planning Commission, the Environmental Quality Board, the Housing Authority, and others.

M205C. Urban Government. (Same as Political Science CM229.) An analysis of the policies, processes, interrelations, and organization of governments in heavily populated areas.

206A. Urban Data Analysis: Demographic Applications. (Formerly numbered 206.) 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 a 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. Estrada, Mr. Levine

206B. Urban Data Analysis: Planning Models. Lecture, three hours; laboratory, one hour. Prerequisite: course 206A or equivalent. An advanced course in urban data analysis which builds on course 206A. Examination of the 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. Estrada, Mr. Levine

207. Public Resource Allocation. Lecture, three hours. Prerequisite: passing score on a microeconomics examination given the first day of class. The practical use of economics in analyzing public resource allocation problems. Topics include a review of marginal analysis, the difference between equity and efficiency, public goods and the free rider problem, environmental pricing, public service pricing, and conflicts between individual and collective rationality.
Mr. Shoup (F)

208. Seminar in Advanced Research Methods. (Formerly numbered 208A.) Lecture, three hours. Prerequisites: doctoral standing, consent of instructor. Required of Ph.D. students in or following the second year. The process of developing a dissertation proposal; introduction to the alternative conceptions of science (or rigorous scholarship) now apparent in various social science paradigms. S/U grading.
Ms. FitzSimmons (F)

209. Special Topics in Planning Theory (2 to 8 units). Lecture, three hours. Seminar on topics in planning theory selected by the faculty. May be repeated for credit.

210A. A History of Planning Thought since 1800. (Formerly numbered 201B). Lecture, three hours. A historical introduction to the major ideals and theories of planning which have influenced its development from the early 19th century to the present.
Mr. Friedmann (F)

210B. Colloquium in Planning Theory. (Formerly numbered 201C.) Lecture, one hour; discussion, two hours. Prerequisite: course 210A. Intended for Ph.D. students (M.A. students may enroll by departmental petition only). An introduction to some of the central theoretical issues of contemporary planning, such as the role of planning in the state, the nature of social learning, conceptions of space and time, the politics of spatial design, the ethics of forecasting. Designed to help students develop a topic for the research paper required in course 210C. In Progress grading (credit to be given only on completion of course 210C). (W)

210C. Research Seminar in Planning Theory. Discussion, three hours. Prerequisite: course 210B. Limited to Ph.D. students. A seminar to prepare Ph.D. students for their research paper in planning theory. Presentations by students and lectures and discussions on topics selected for research by the class.
(Sp)

211. Law and the Quality of Urban Life. Lecture, three hours. An introduction to law as an urban system, directed primarily toward those interested in social and advocacy planning. Urban problems, such as employment, housing, social welfare, and land use; the law's role as a partial cause and cure of these problems. Examination of law as a changing process rather than a collection of principles, so that students develop a facility to interact with law and lawyers in a positive and forceful manner. Mr. Heskin

212. Uses of Forecasts in Policy-Making. Alternative concepts of the future and their relationship to planning theory and practice; institutional requirements that forecasts be conducted by planners; the technical characteristics of forecasts themselves and the relationship between technical forecasting methods and assumptions about the future; case studies of the use of forecasting in policy-making drawn from a variety of sectors: transportation, housing, energy, and water supply; an examination of ethical dilemmas faced by forecasters in complex policy-making situations. Mr. Wachs

213. Social Indicators and Reports for Metropolitan Regions. Discussion, three hours. Prerequisite: second-year standing. Research seminar concerned with the development of social indicators for evaluating and reporting the performance of complex urban systems. Mr. Grigsby

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, the concept of environmental ethics, and the evolution of the code of ethics in the planning profession. Mr. Wachs

M215B. Spatial Statistics. (Same as Geography M272.) Lecture, two hours; discussion, one hour; laboratory, one hour. Prerequisites: Geography 171 or Mathematics 50, consent of instructor. Specific techniques useful in the analysis of spatial distributions, including both point and areal patterns and emphasizing spatial descriptive statistics, probability models of spatial distributions, and statistical surfaces.
Mr. Clark

217A-217B. Comprehensive Planning Project. Prerequisite: second-year standing. The comprehensive project is offered by at least two faculty members representing different areas of policy concentration in the urban planning program and brings together students of varying backgrounds and interests in joint solution of a problem in urban planning and development. Each project is the equivalent of eight units total and spans two quarters. Because of the time required for the completion of project work, it is expected that students enrolled in a project will select the comprehensive examination plan option in place of the master's thesis. Credit to be given on completion of course 217B. (W, 217A; Sp, 217B)

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 a basic mathematics proficiency examination given the first day of class. An introduction to mathematical and statistical concepts and methods with applications in urban planning. Review of basic mathematical concepts fundamental to planning methods; descriptive statistics, probability, and sampling techniques. An introduction to the use of the 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 the first day of course 220A). An introduction to concepts of statistical inference and modeling, with emphasis on urban planning applications. Topics include hypothesis testing, analysis of variance, correlation, regression, and causal modeling. Applications include such planning problems as forecasting population growth and change, estimating the use and need for public facilities, and analyzing the changing social and economic characteristics of urban populations. Case studies presented which cover the design and analysis of typical urban planning research projects. Use of the computer as a tool in statistical analysis and modeling. Ms. Liggett (W)

221. Evaluation Methods. (Formerly numbered 221A, 221B.) Lecture, three hours. Prerequisites: courses 207, 220A. An examination of methods used to evaluate the 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. Hill Scott, Mr. Shoup

223A. Professional Development Series. Lecture, three hours. A lecture-seminar-project course offering an introduction to the planning profession and, more specifically, to the Urban Planning Program at UCLA. An overview of the forces that shaped its practice over time and an exploration of various professional roles for planners. Planning education viewed as a response to changing needs and as a catalyst for emerging roles for professional planners. Several short projects designed to expose students to "real world" planning problems and to the various viewpoints and methods that the areas of concentration specialties would bring to bear. Course 223A is generally taken Fall Quarter of the first year as an introduction to course 223B. (F)

223B. Professional Development Series. Lecture, three hours. Highly recommended prerequisite: course 223A. Problems of professional practice. Students must be working in a field setting to enroll. A job fair is held at the beginning of Winter Quarter to place students in field settings. Students who wish to arrange their own placement and join the class may do so with consent of instructor. Development of methods which integrate theory and practice through readings and individual and collective analyses of each student's experience. In addition, a larger look at the planning profession provided by noted professionals brought to the classroom to dialogue with the students. Students combine course 223B with one quarter of course 490 or 496F to meet the fieldwork requirement. Mr. Heskin (W)

229. Special Topics in Planning Methods (2 to 8 units). Seminar on topics in planning methodology selected by the faculty. May be repeated for credit.

M231. Urban Housing and Community Development (3 to 4 units). (Same as Law M287.) Lecture, three hours; discussion, one hour. Comprehensive consideration of the rebuilding and construction of American cities, with major emphasis on the "housing process" — the way in which shelter and related facilities are created by the institutions which direct housing activities in urban areas. Students are encouraged to undertake research projects, with emphasis on field research, in lieu of a substantial portion of the final examination. Mr. McGee

232A. Introduction to Regional Planning: The Evolution of Regional Planning Doctrines. Lecture, three hours. A critical and historical survey of the evolution of regional planning theory and practice, with particular emphasis on the relations between regional planning and developments within Western social and political philosophy. Major concepts include regions and regionalism, the territorial community, and the social production of space.
Mr. Soja (W)

232B. Spatial Planning: Regional and International Development. An examination of the theory and practice of spatial planning at the regional, national, and international scales, including an evaluation of regional growth strategies, national settlement policy, growth center concepts, and the normative-ideological issues involved in international development planning. Generally taken in the first year.
Mr. Soja (Sp)

233. The Political Economy of Urbanization. An introduction to the basic concepts and analytical approaches of urban political economy, with major emphasis on American urban problems. Topics include the historical geography of urbanization, the development and transformation of urban spatial structure, suburbanization and metropolitan political fragmentation, urban fiscal crisis, and the role of urban social movements. Mr. Soja

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 quarter; rural development in second quarter. Case studies from Latin America, Africa, and Asia. Lectures, student presentations, and policy debates.

Mr. Friedmann (W,Sp)

236A. Urban and Regional Economic Development I. Lecture, three hours. An introduction to basic principles of urban and regional economics as they bear on public policy formation and urban and regional planning, especially in the U.S. context. Contemporary economic problems, theoretical frameworks for analyzing these problems, and methods of analysis. Major topics include regional distribution of employment/unemployment income and standards of living, with special attention to sectoral shifts in employment and demographic and migratory changes in the U.S. Emphasis on economic growth policies and development planning in cities and regions.

Ms. Morales, Mr. Storper (W)

236B. Urban and Regional Economic Development II. Lecture, three hours. A seminar focusing on local economic development, meaning job creation, job retention, or various forms of income redistribution for the purposes of developing or stabilizing a community's economy. Reasons for and measurement of unemployment and impoverishment, programmatic approaches for dealing with these problems, and a critical analysis of the objectives, outcomes, and public accountability of the different approaches. Topics include labor market considerations in economic development planning; incentives to private enterprise investment; alternative institutions for local economic development; and financing public and private investment. Ms. Morales (Sp)

236C. Urban and Regional Economic Development III. Discussion, three hours. Prerequisite: course 236B. An advanced seminar for students wanting to design or critically evaluate programs in economic development. Two- to three-week intensive workshops on financing techniques and economic development law in first part of course; individual student projects during remainder of course.

Ms. Morales (F)

238. Advanced Seminar in Urban and Regional Development. Lecture, two hours; discussion, two hours. Prerequisite: doctoral standing or consent of instructor. An 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.

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 the faculty. May be repeated for credit.

241A. Urban Transportation Planning I. (Formerly numbered M241A.) Lecture, three hours. Historical development of urban transportation planning and the current political and administrative frameworks for planning; the relationship between transportation systems and urban form, historical review of automobile and public transit systems; urban highway and transit planning programs; the financing of urban transportation; environmental and social impacts of transportation systems; current policy dilemmas; controlling the automobile, promoting mass transit, energy issues, needs of elderly and handicapped.

Mr. Wachs

241B. Urban Transportation Planning II. (Formerly numbered M241B.) 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. Wachs

241C. Urban Transportation Planning III. (Formerly numbered M241C.) Prerequisites: courses 207, 220B, 241A, and 241B, or consent of instructor. Recent experience and case studies in transportation planning and policy. Planning a rail system and downtown people mover for Los Angeles; community dial-a-ride services; express buses on freeways; the Santa Monica Freeway diamond lane project; decision making in the case of the Century Freeway; a parking management program for Los Angeles; carpooling and vanpooling programs; field trips and guest speakers. Mr. Wachs (F)

244. Housing Markets. Lecture, three hours. The 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 the construction industry, market failure, and appropriate policy responses. Mr. Burns

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, the effects of taxes on land-use decisions, benefit assessments to finance neighborhood public investment, private and intergovernmental contracting as a method of supplying urban public services, tax increment finance for urban redevelopment, and the municipal bond market. The equity of public service distribution among and within cities; review of the results of lawsuits to equalize public services. Mr. Shoup

246. Housing in Social and Economic Development Policy. Lecture, three hours. Prerequisite: course 207 or equivalent or consent of instructor. Seminar on the position of housing in national and regional development strategies, with focus on policies for Third World nations. Topics include the nature of housing "need," market responses, evolution of housing policy, theory of intervention, alternative policies for increasing the housing supply. Numerous case studies. Mr. Burns

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 the faculty. May be repeated for credit.

251. Planning for Multiple Publics. Lecture, three hours. Prerequisite: prior background in statistics and research design. Exploration of the 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 the Los Angeles metropolitan area as a means of gaining insights into the practical, theoretical, and methodological problems of planning for multiple publics. Generally taken in the first year. Mr. Grigsby

252A. Human Lives in Development. Lecture, three hours. The growth and development of the individual throughout the life cycle. Attention to four major schools of thought regarding human development, drawing implications to planning approaches. Emphasis on the psychosocial basis of individual development and its relationship to planning.
Ms. Hill Scott

252B. Social Policy in Human Development. Prerequisite: course 252A or consent of instructor. The applications of human development information on the formulation of child care and family policy. Examination of a wide variety of data on child development, family structure, female labor force participation, and the economics of public investments and its use in developing policies regarding the organization and supply of child care services. Ms. Hill Scott

253. Social Theory for Planners. Lecture, three hours. Prior knowledge of sociological theory would be useful but is not essential. The sociological tradition as it relates to issues of change, the role of the state, and the relationship between knowledge and values as they affect planning. Insights and crucial issues which have arisen from social theory as they relate to the concerns of planning and social policy. Contemporary developments in urban sociology.
Mr. Marris

254. Social Research Methods. Lecture, three hours. Prerequisite: course 220B or equivalent. Review of basic methods commonly used in planning and applied social research and, in particular, survey research. Topics include conceptualizing the research problem; developing a research plan; sampling, instrumentation, and data collection; and time management of a research study.
Mr. Estrada, Mr. Levine

256. Social Impact Analysis. Lecture, three hours. Prerequisite: consent of instructor. Recommended: courses 220A, 220B, a course in advanced statistics, a course in survey research and methodology. Limited enrollment. Exploration of ways of creating methods for assessing and determining social impacts on communities, in order to develop both methodologies and policy formulation for assisting in community development. Generally taken in the second year.
Mr. Grigsby

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 the functioning of the market system. Examination of the assumptions and implications of alternative approaches to political economy, as these pertain to questions of environmental policy. Ms. FitzSimmons

260B. Politics, Institutions, and the Environment. (Formerly numbered 261B.) Lecture, three hours. Planners face some important dilemmas in designing institutions and policies intended to correct or prevent disruptions of the environment. An introduction to these problems, focusing on the 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 the growing environmental movements; evaluation of current approaches to environmental problems, considering their institutional forms and epistemological foundations. Mr. Storper

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. The basics of land use as a commodity in the first part: land economics, land markets. Development, historically, of a structuralist perspective on the use of land in cities and regions in the second part. Land-use regulation (in the third part) in the light of the first two, to see how effective it is in steering the course of land development. The regulatory approach compared with real planning. Mr. Storper

262A. Urban Environmental Problems: Wastes and Hazards. Lecture, three hours. Prerequisites: courses 260A and 260B, or consent of instructor. Biologically active chemicals in urban environments are a focus of increasing public concern. Public health experts and planners are being asked to assess the risks such substances present and to take such risks into account in the planning process. Toxic and hazardous wastes pose a planning and policy problem which requires simultaneous consideration of environmental issues, economic development questions, and social services policy. Ms. FitzSimmons

262B. Urban Environmental Problems: Water Resources. Lecture, three hours. Prerequisites: courses 260A and 260B, or consent of instructor. Water is life and wealth in California, which has the 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 are increasing. Examination of the environmental impacts of water development; review of the geography of California water generally. The use of water in California: agricultural irrigation, water pricing, water rights, and water districts. Consideration of a resource planning perspective in contrast to a strict development orientation.
Mr. Gottlieb

263. Natural Resource Conservation. Discussion, three hours. Prerequisites: courses 260A and 260B, or consent of instructor. Exploration, through reading, discussion, and student presentations, of the meaning of resource conservation, its desirability, and ways of achieving it. Emphasis on the integrated management of the public lands, though students may attend particularly to a specific resource (minerals, water, timber, wilderness). Ms. FitzSimmons

M264. Environmental Law and Policy (3 to 4 units). (Same as Law M290.) Lecture, three hours. Examination, from perspectives meaningful to legal institutions, of the nature of environmental problems. The means by which law has responded, and can and should respond, to problems of environmental quality. Both common law and legislative and administrative measures considered. The air pollution problem is the primary vehicle for study.

265. History of American Environmentalism. Discussion, three hours. Prerequisites: courses 260A, 260B. Readings, discussion, and student papers on the conservationist/preservationist division at the turn of the century, the environmental implications of those concepts of regional integration developed by the RPAA and others in the 1920s which were institutionalized in the New Deal, the rise of environmental activism after World War II, and the emergence of a legislative and judicial framework for environmental politics. Ms. FitzSimmons, Mr. Gottlieb

266. City and Countryside in the Third World. (Not the same as course 266 prior to Fall Quarter 1984.) Lecture, three hours. Review of the basic literature and schools of thought on development theory through an analysis of the impact of mercantilism, colonialism, capitalism, and socialism on various urban and rural social and economic structures in the Third World. Presentation, through an evaluation of theoretical writings and case studies, of the complexity and diversity of developing countries. Emphasis on the linkages between policy and the 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

267A. Resource-Based Development Planning. Discussion, three hours. Recommended prerequisite: course 266. Some of the major issues associated with the development of specific natural resources. Topics include the nature of the particular resource (or region associated with it), its previous management, the involvement of the state, corporations, and local groups, and the environmental and social impact of its development. Ms. Hecht

267B. Rural Development Issues. Lecture, three hours. Recommended 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 the special problems of tropical development. May be repeated for credit with consent of instructor.
Ms. Hecht

268. Advanced Seminar in Natural Environment and Resources. (Formerly numbered 260.) 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.

269. Special Topics in Natural Environment and Resources (2 to 8 units). Lecture, three hours. Seminar on topics in natural environment and resources selected by the faculty. May be repeated for credit.

272. Real Estate Development for Planners and Architects. See listing under "Architecture/Urban Design." Mr. Kamnitzer

273. Site Planning. (Formerly numbered 267.) Lecture, 90 minutes; discussion, 90 minutes. Introduction to principles of site planning for urban areas, including new towns, new towns-in-town, shopping centers, industrial parks, office parks, housing, and recreation areas. Discussion of case studies in Southern California; exercises at the scale of the small city, the urban neighborhood, and the superblock.

274. Introduction to Physical Planning. See listing under "Architecture/Urban Design." Ms. Leavitt

276. Planning Workshop (4 to 8 units). Laboratory, six hours. Prerequisite: course 421 or 422 or Design 32A or demonstrated background in architectural design or consent of instructor. Planning projects with a focus on physical planning. Emphasis on synthesis combined with iterative evaluation of the emerging solutions. Projects may be reality bound, hypothetical, or in the form of exploring the impact of nonphysical forces on the physical environment. Development of presentation skills, both graphic and verbal, is an essential component of this workshop.
Mr. Kamnitzer

277. Introduction to Historic Preservation. Lecture, two hours; discussion, one hour; one-day field trip. Following an explanation of the philosophy and history of the preservation movement, lectures focus on various aspects of historic preservation, such as current legislation, tax incentives for developers, preservation planning for cities, methods of recognizing significant buildings and of conducting a survey, adaptive reuse, citizen involvement from national to local levels, appropriate restoration techniques, structural reinforcement of masonry buildings, and social problems caused by preservation (such as gentrification and displacement).

278. Research Methods in Human-Environment Relations. See listing under "Architecture/Urban Design." Ms. Leavitt

281. Introduction to the History of the Built Environment in the United States. Lecture, three hours. Open to advanced undergraduates with consent of instructor. An introduction to American urban, environmental, and architectural history, a survey of the main economic, political, social, and aesthetic forces forming the built environment. The Colonial period to the present, with emphasis on the importance of the spatial design of cities and buildings to public policy.
Ms. Hayden

283. History of the American Household and the American Home. Lecture, 90 minutes; discussion, 90 minutes. Prerequisite: course 281 or consent of instructor. An introduction to the history of housing design in the United States, emphasizing the changing roles of women and men from Colonial times to the present and the effects of these social changes on the physical form of the dwelling and the settlement. Discussion of the concerns of professional architects and planners, as well as the activity of bankers, builders, and homemakers. Ms. Hayden

284. The *Ideal* City *in History.* *Prerequisite:* course 281 or consent of instructor. Since the time of Thomas More's *Utopia,* creating the ideal city has been a favorite device used by novelists, political theorists, economic and social critics, and architects to criticize existing society and demonstrate the dramatic possibilities of thoroughgoing reform. The utopian tradition in its literary, political, and aesthetic forms, examining satirical cities, moral cities, and urban fantasies from the 16th century to the present. Ms. Hayden

285. Private Life, Public Life, and the Built Environment: Planning for the Changing Household and the Changing Work Force. Lecture, 90 minutes; discussion, 90 minutes. An introduction to the substantial literature on the relationship between gender and urban experience. Alternative research strategies attempt to define a private/public urban split; to describe an inadequate fit between American households, housing, and services; and to document environmental inequities women and children face in contemporary cities. Students prepare seminar papers using one or more of these approaches to explore topics in the areas of housing, neighborhood development, transportation, or social services.
Ms. Hayden

375. Teaching Apprentice Practicum (1 to 4 units). See listing under "Architecture/Urban Design."

490. Urban Innovations Group Workshop (4 to 8 units). See listing under "Architecture/Urban Design." (F,W,Sp)

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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. 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

Lewis C. Solmon, Dean

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The primary goal of the Graduate School of Education is "the improvement of educational practice." In attainment of this goal, the functions of the school have expanded markedly in the past several decades to include a major commitment to educational research, to the advanced education of professional leaders and specialists, to the study and criticism of educational policy, and to field consultative services — all in addition to the traditional preparation of teachers.

The school, largest of its kind in the University of California system, provides a full range of academic and professional degree programs. Students may select from programmatic offerings consistent with individual goals and professional aspirations. At the master's degree level, professional Master of Education and academic Master of Arts programs are offered; at the doctoral level, qualified students may pursue the professional Doctor of Education or the academic Doctor of Philosophy degree. Additionally, several instructional and services credential sequences are available.

In order to assure that each candidate is advantaged through preparation which provides for variation in individual objectives and anticipates qualification for careers of the future, the faculty of the school engages in an ongoing review and any needed revision of curricular offerings. Further, an attractive array of fellowships is available to assist in recruitment of outstanding students both locally and nationwide.

Graduate School of Education

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Charles C. Healy, Ph.D.
Antoinette Krupski, Ph.D.
Bengt Muthén, Ph.D.
David O'Shea, Ph.D.
Val D. Rust, Ph.D.
Geoffrey Saxe, Ph.D.
Deborah J. Stipek, Ph.D.
Romeria Tidwell, Ph.D.
James W. Trent, Ph.D.
Concepción Valadez, Ph.D.
Noreen M. Webb, Ph.D.
Wellford Wilms, Ph.D.
Julia C. Wrigley, Ph.D.
Simon González, Ed.D., *Emeritus*
Wendell P. Jones, Ph.D., *Emeritus*
Frances M. Obst, Ed.D., *Emeritus*

Assistant Professors

James S. Catterall, Ph.D.
Donald Dorr-Bremme, Ph.D.
David P. Ericson, Ph.D.
Sandra Graham, Ph.D.
Barbara Hecht, Ph.D.
Carollee Howes, Ph.D.
Harold G. Levine, Ph.D.
Don T. Nakanishi, Ph.D.

Visiting Assistant Professor

Carol Mock, M.S.

Adjunct and Visiting Lecturers

Marjorie S. Day, Ph.D., *Adjunct*
Philip Ender, Ph.D., *Visiting*
Madeline Hunter, Ed.D., *Visiting*
Virginia Kennedy, Ph.D., *Visiting*
Ann Phelps, Ph.D., *Visiting*
Burtis Taylor, Ed.D., *Visiting*

Degrees Offered

Master of Education (M.Ed.)
Master of Arts in Education
Doctor of Education (Ed.D.)
Doctor of Philosophy 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) A minimum total score of 1,000 on the combined quantitative and verbal sections of the Graduate Record Examination (GRE). (Note: The Miller Analogies and Doppelt Mathematical Reasoning Test may be substituted for the GRE; minimum scores are 48 and 19 respectively.)

(2) Acceptance in a particular specialization is dependent on the availability of openings in that field; preference may be given to applicants with related backgrounds and/or experience.

Admission to an initial advanced 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.

Note: Applicants who do not meet the University minimum grade average and/or GRE score requirements may be admitted to the school on the basis of relevant work experience, accomplishments, or public service.

Letters of recommendation, while not required, may prove useful in documenting qualifications and/or professional experiences. The Graduate School of Education has an application form for both master's and doctoral degree programs which must be completed in addition to the one used by the Graduate Admissions Office.

Application forms and departmental brochures are available from the Office of Student Services, Graduate School of Education, 201 Moore Hall, UCLA, Los Angeles, CA 90024.

For information on the proficiency in English requirements for international graduate students, refer to "Graduate Admission" in Chapter 3.

Major Fields or Subdisciplines

Area I — Social and Philosophical Studies in Education

Comparative and International Education — 204A, 204B, 204C, 204D, 204E, 204F, 253A, 253B, 253C, 253D, 253E, 253F, 253G, 253H

Education and the Social Sciences — M108, 200B, 200C, 203, 207, 208A, 208B, 208C, M229A-M229B, 252A, 252B, 275, M281A-M281B-M281C

Philosophy and History of Education — 200A, M201C, 206A, 206B, 206C, 206D, 206E, 251A, 251C, 251D, 251E

Area II — Educational Psychology

Counseling — 213A, 213B, 213C, 214A, 214B, 214D, 214E, 216, 257, 413A-413B-413C, 415A, 415B

Developmental Studies in Education — 217A, 217B, M217C, 217D, 217F, 256B, 261A, 421A, 421C, 421D, 421F, 421G

Learning and Instruction — 205, 212A, 212B, 212C, M215, 236, 237, 256A, 258A, 258B, 267, 418, 419A, 419B, 433A, 433B

Research Methods and Evaluation — 202, 210A, 210B, 210C, 210D, 211A, 211B, 211C, 218A, 218B, 218C, 219, 221, M222A, 222B, 222C, 228, 230, 245, 255, 411A, 411B, 460

Special Education — 125A, 125B, 225A, 225B, 226, 227A, 227B, 227C, 280A, 280B, 325A, 325B, 425, 501

Area III — Organizational and Administrative Studies in Education

Administrative and Policy Studies in Education — 240A, 241, 242, 244, 246A, 246B, 440C, 441A, 441B, 441C, 442B, 443, 444A, 444B, 447, 448A, 448B, 470A, 470B

Curriculum and the Study of Schooling — 220A, 220B, 223, 224, 260, 261C, 262A, 262B, 262F, 262J, 420A, 420D, 422, 423, 424A, 424B, 424C, 424G, 437A, 490A

Education and Work — 214C, M231, 232, 233, 234, 235, 247, 248, 261E, 262I, 437B

Higher Education — M148, 180, M197, 209A, 209B, 209C, 209D, 238, 239, 249A, 249B, 259A, 259B, 261D, 261F, 334, 430, 431A, 431B, 431C, 432, 461A, 461B, 461C

Teacher Education

100, M102, 112, 264, 312, 315A-315B, 316A-316B, 318A-318B, 320A-320B, 324A, 324B, 324C, 324D, 330A, 330B, 330C, 330D, 360, 481, 489, 491A, 492

Academic Interinstitutional Programs

313A-313B, 313C-313D, 314A-314B, 317A, 317B, 317C, 321A, 321B, 321C, 321D, 322A, 322B

Special Studies

199, 299A-299B-299C, 375, 498A-498B-498C, 499A-499B-499C, 596, 597, 598, 599

Fields of specialization which may be selected in completion of the specific degree programs 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 field of specialization.

Master of Education — Administrative and policy studies in education; bilingual/cross-cultural education (not offered in 1986-87); curriculum and the study of schooling; teacher education.

Master of Arts in Education — Area I (education and the social sciences; philosophy of education); Area II (all specializations); Area III (education and work; higher education).

Doctor of Education — Area II (all specializations, except counseling); Area III (all specializations).

Note: No specializations in Area I are approved for major study in the Doctor of Education degree program. Since the Ed.D. program is oriented toward key concepts and issues in education, study includes specialized content in the selected field of specialization, as well as content from related specializations.

Doctor of Philosophy in Education — Areas I, II, III (all specializations).

Master of Education

The Master of Education (M.Ed.) *professional* degree program is designed for individuals preparing for a mid-level professional position 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 selected specializations:

(1) *Administrative and Policy Studies in Education:* Possession of a valid teaching 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 teaching 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. (This M.Ed. specialization will not be offered in 1986-87.)

(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 specialization field is advantageous.

(4) *Teacher Education:* This is a four-quarter program leading to qualification for a Multiple or Single Subject Instruction Credential and a Master of Education degree. Individuals with the highest qualifications in all subject areas, including mathematics, science, and the humanities, are sought. 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, although no specific upper division courses are necessary. At least five courses (20 units) must be in the professional education (400) series. No 500-series courses may be applied toward the degree. Education 597 may be taken on an optional basis.

Information regarding specific course requirements in a selected M.Ed. specialization may be obtained from the Office of Student Services.

Teaching Experience

For some M.Ed. specializations, teaching experience is required. Specific information may be obtained from the Office of Student Services.

Comprehensive Examination Plan

There is no thesis plan offered in this program. Comprehensive examinations for master's degrees are offered twice yearly, once in Fall Quarter and once in Spring Quarter. They consist of:

(1) A comprehensive written examination designed to assess (a) comprehension of the professional knowledge basic to the selected field of specialization, 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) A performance examination designed to assess your 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. specialization is available from *your academic adviser.*

The comprehensive examination may be taken twice. After a second failure, you are allowed to continue in the Graduate School of Education only in highly unusual circumstances.

Master of Arts in Education

The Master of Arts *academic* degree program in Education is designed to meet the needs of the individual preparing for a career in basic research or for advanced graduate study; it is the appropriate prerequisite education degree to the Ph.D. degree program.

Course Requirements

A minimum of nine upper division and graduate courses (36 units) must be completed in graduate standing, although no specific upper division courses are necessary. Six courses (24 units) must be taken in the Education 200 and 500 series. A maximum of two 500-series courses (eight units) may be applied toward the divisional course minimum and toward the graduate course minimum.

Two courses must be selected from Education 200A, 200B, 210A, 210B. Additional courses to complete the 36-unit requirement may be selected from offerings in Education and/or other departments with consent of your assigned adviser.

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 the chair of your thesis committee.

The thesis committee must be formed, and a Petition for Advancement to Candidacy for the Master of Arts must be filed no later than one quarter prior to completion of course requirements for the degree.

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 major area of study and field of specialization. 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 comprehensive examination, offered twice yearly in Fall and Spring Quarters, may be taken twice. After a second failure, you are allowed to continue in the Graduate School of Education only in highly unusual circumstances.

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. Emphases include practice, applied studies, and knowledge related to professional skills.

Admission

A Master of Education degree or equivalent is required; at least two years of successful professional experience in education or equivalent must be completed prior to advancement to candidacy.

Course Requirements

A minimum of 18 courses is required, as follows:

(1) Three research methods courses, with no more than two introductory courses and at least one advanced course, selected from the departmental list approved for the Ed.D.

(2) Nine education courses, of which four must be in areas other than the specialization (to comprise a complementary support area) and of which at least six must be from the Education 400 series; all courses must be approved by the academic adviser.

(3) Three supplemental courses selected from offerings in the school (usually outside the specialization) or in another UCLA professional school or department.

(4) A sequential three-quarter field practicum to include a research paper or similar product submitted by the end of the sequence.

Individual course requirements may be waived, under exceptional circumstances, at the discretion of the committee on graduate degrees, admissions, and standards; in unusual cases, however, an academic adviser may recommend additional coursework.

Qualifying Examinations

After satisfying the above requirements, you are eligible to take the following qualifying examinations:

(1) A specialization-designed written examination which is offered twice yearly, once in Fall Quarter and once in Spring Quarter. After a second failure, you are allowed to continue in the Graduate School of Education only in highly unusual circumstances.

(2) The University Oral Qualifying Examination, conducted by the doctoral committee, which employs topics from education which are related to your written research proposal. In case of failure, the examination may be repeated once on the recommendation of your doctoral committee.

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.

Final Oral Examination

At the option of the certifying members of the doctoral committee, a final oral examination may be required.

Ph.D. in Education

The Doctor of Philosophy *academic* degree program in Education is designed for individuals preparing for a career in basic research or college-level instruction. Emphases include theory, research methodology, basic studies, and in-depth knowledge in education and an approved cognate field.

Admission

A master's degree or equivalent in either education or the cognate field in which you plan to work is required.

Foreign Language Requirement

There is a foreign language requirement for the Ph.D. in some specializations. Detailed information is available from the graduate adviser in the Office of Student Services.

Course Requirements

A minimum of 18 courses is required, as follows:

(1) Three research methods courses, with no more than two introductory courses and at least one advanced course, selected from the departmental list approved for the Ph.D.

(2) Nine education courses, of which four must be in areas other than the specialization (to comprise a complementary support area) and of which at least six must be from the Education 200 series; all courses must be approved by the academic adviser.

(3) For students with an academic master's degree, three cognate courses selected from discipline-based studies in one or more UCLA academic departments (five cognate courses are required of students with a degree other than an academic master's degree).

(4) A sequential three-quarter research practicum to include a research paper submitted by the end of the sequence.

Individual course requirements may be waived, under exceptional circumstances, at the discretion of the committee on graduate degrees, admissions, and standards; in unusual cases, however, an academic adviser may recommend additional coursework.

Qualifying Examinations

After satisfying the above requirements, you are eligible to take the following qualifying examinations:

(1) A specialization-designed written examination which is offered twice yearly, once in Fall Quarter and once in Spring Quarter. After a second failure, you are allowed to continue in the Graduate School of Education only in highly unusual circumstances.

(2) The University Oral Qualifying Examination, conducted by the doctoral committee, which employs topics from both education and the cognate discipline(s) which are related to your written research proposal. In case of failure, the examination may be repeated once on the recommendation of your doctoral committee.

For further information on the written and oral qualifying examinations, contact the Office of Student Services.

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).

Final Oral Examination

At the option of the certifying members of the doctoral committee, a final oral examination may be required.

Cooperative Degree Programs

For details regarding the following cooperative degree programs, contact the Office of Student Services.

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. (This program will not be offered in 1986-87.)

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 a specialization 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 goals of the joint program are (1) the stimulation and preparation of research workers of high competence in the various fields of special education; (2) improved preparation for potential teachers of exceptional individuals; and (3) improved preparation of personnel for research and in policy formation in the public schools of California. Students seeking information regarding emphases and requirements should consult the joint doctoral adviser at UCLA (126B Moore Hall) 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 Instruction Credential, (2) the Single Subject Instruction Credential, (3) the Bilingual Emphasis Instruction Credential, (4) the Administrative Services Credential, (5) the Pupil Personnel Services Credential, (6) the School Psychologist Services Credential, and (7) the Severely Handicapped Specialist Credential.

Upper Division Courses

100. Cultural Foundations of Education. (Formerly numbered 100A, 100B.) 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 United States. Patterns of intergroup and school-community relations.
Mr. Dorr-Bremme, Mr. Rust

M102. The Mexican-American and the Schools. (Formerly numbered 102.) (Same as Chicano Studies M102.) Prerequisite: consent of instructor. Review of research and teaching strategies. Analysis of school policies and practices and their effect on the development of Mexican-American and Chicano youth and communities.

M108. Sociology of Education. (Same as Sociology M143.) Prerequisite: Sociology 1. Study of social processes and interaction patterns in educational organizations; the relationship of such organizations to aspects of society, social class, and power; social relations within the school, college, and university; formal and informal groups, subcultures in educational systems; roles of teachers, students, and administrators. Mr. O'Shea, Ms. Wrigley

112. Psychological Foundations of Education. Prerequisite: consent of instructor. Analysis of learning processes in school situations. Processes of human motivation, the affective, cognitive, social, and personal development of children and adolescents, the evaluation of learning, individual differences, and the implications of relevant theory and research for instructional practices.
Ms. Graham, Ms. Kourilsky, Mr. Silberman

125A. The Education of Exceptional Individuals. Prerequisite: Psychology 10 or equivalent. An introduction to the field of special education, with emphasis on the psychology of individual differences, the learning characteristics of exceptional individuals, and application of research and theory to special education problems. Mr. Hewett

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. Observation in schools.

M148. Women in Higher Education. (Same as Women's Studies M148.) Prerequisite: upper division standing. The 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

180. Social Psychology of Higher Education. An overview of significant studies in the social psychology of higher education. Focus on institutional characteristics and students' interpersonal and intrapersonal processes, with special emphasis on identifying and explaining the effects of the college experience on student development and achievement.
Mr. Trent

M197. Senior Seminar in Women's Studies. (Same as Women's Studies M197). Discussion, three hours; laboratory, one hour. Prerequisites: Women's Studies 100 plus 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 a specific topic concerning women, explores frameworks for understanding female experience (biological, economic, historical, and psychological), and refines methods for research. Ms. Astin

199. Special Studies (2 to 8 units). Prerequisites: senior standing, consent of instructor. Independent study of individual problems.

Graduate Courses

200A. Historical Research and Writing. Techniques 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 nonexperimental 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. (Same as History M264.) Seminar, three hours. The intellectual and social forces impinging on American education from the 1860s to the present. Analysis of the relation between these forces and the values, curriculum, structural organization, and functions of education.
Mr. S. Cohen

202. Evaluation Theory. (Formerly numbered 411B.) Prevalent evaluation theories, systems for categorizing these theories, and the process of theory development in educational evaluation.
Mr. Alkin, Mr. Ellett

203. Educational Anthropology. Recommended prerequisite: Anthropology 22. Study of education through the 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.

204A. Topics and Issues in International and Comparative Education. Analysis of basic topics and issues in comparative and international education. Emphasis on those topics and issues that cut across national boundaries and are at the forefront of educational policy and practice in both developed and developing nations.
Mr. Hawkins, Mr. Nakanishi, Mr. Rust

204B. Introduction to Comparative Education. An examination of conceptual and methodological questions underlying comparative education. Particular attention to the development of the field and to styles of social analysis which may be applied to comparative and cross-national studies in education.
Mr. Hawkins, Mr. Nakanishi, Mr. Rust

204C. Education and National Development. Application of social science perspectives and methodologies to education in the international context. Emphasis on relevant research literature and development processes and strategies for international development education, with concentration on so-called less developed countries.
Mr. Hawkins and the Staff

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. Hawkins, Mr. Nakanishi

204E. International Efforts in Education. Analysis of problems and concepts related to diffusion, borrowing, and adaptation across cultural and national boundaries. Activities of bilateral and multilateral agencies in promoting international education, as well as conceptual and practical curricular efforts which intend to increase international understanding.
Mr. Hawkins and the Staff

204F. Nonformal Education in Comparative Perspective. A 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. Hawkins, Mr. Rust

205. Computers in the Educational Process. Introduction to the theory, experimentation, evaluation, and future of computer systems in education, with emphasis on computer-assisted instruction (CAI), and the use of computers to teach programming and to foster development of writing, computational, and filing skills. Ms. Dorr

206A. Philosophy of Education: Introduction. Systematic introduction to the field, indicating ways in which philosophy serves to elucidate educational aims, content, methods, and values.
Mr. Ellett, Mr. Ericson, Mr. Weinberg

206B. Philosophy of Education: Existentialism and Humanism. Examination of existentialist ideas and their application in contemporary humanistic movements in school and society.
Mr. Ellett, Mr. Weinberg

206C. Philosophy of Education: Logic and Language. Conceptual analysis of recurrent and contemporary themes in the field. Emphasis on the development of logical and linguistic skills used in the analysis of educational problems and issues.
Mr. Ellett, Mr. Ericson

206D. Philosophy of Education: Ethics and Values. A study of ethics and value theory in teaching and learning, educational organization and policy, and curriculum design and validation.
Mr. Ellett, Mr. Ericson

206E. Philosophy of Education: Introduction to Humanism in Education. The philosophical foundations of humanism and their relationships to educational theory and practice. Mr. Weinberg

207. Politics and Education. The political dimensions of both formal and nonformal educational enterprises in a national and international perspective. Political theory explored in the context of such educational issues as policy formation, pressure groups, and public and private elites.
Mr. Hawkins and the Staff

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 the elementary, secondary, postsecondary levels.
Mr. O'Shea, Ms. Wrigley

208B. Issues in Education: Sociological Perspectives. Prerequisite: course 208A or equivalent. Exploration of educational issues and the structure and processes of formal schooling, from sociological perspectives such as functionalism, conflict theory, symbolic interactionism, ethnomethodology, and critical sociology. Mr. O'Shea

208C. Explanation in the Social Sciences and Educational Research. Lecture, two hours; discussion, two hours. Prerequisite: graduate standing or consent of instructor. An overview of basic strategies and forms of explanation relevant to inquiry in education from the vantage point of the various social and behavioral science disciplines.
Mr. Blurton Jones, Mr. Ericson

209A. History of Higher Education. An examination of the development of postsecondary education in the United States, with attention to the social context and to the scope and variety of institutions.
Mr. Astin, Mr. A. Cohen, Ms. Mock

209B. Issues in Higher Education. Identification, analysis, and discussion of current issues, innovations, trends, and policies in postsecondary education. Mr Clark, Mr. A. Cohen

209C. Problems in Research and Evaluation in Higher Education. A critical review of research and evaluation studies of higher education, with special attention to the need for studies of new programs and problems, and to the design and methodology of evaluative research. Mr. Astin, Ms. Mock

209D. The System of Higher Education. An analysis of the structure and function of American postsecondary education from a systems perspective. Emphasis on the structure of the system and comparative characteristics (faculties, student bodies, finances, outputs) of different types of institutions.
Mr. Astin, Mr. Clark

210A. Basic Concepts in Educational Research. Fundamentals of research design. The language of research. Planning and conduct of research. Interpretation and reporting of research outcomes. Introduction to descriptive statistics: mean, median, mode, variance. Introduction to the normal curve.
Mr. Levine, Mr. Skager, and the Staff

210B. Experimental Design in Educational Research. 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. Shavelson, Mr. Skager, Ms. Webb

210C. Experimental Design: Advanced Topics. 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. Shavelson, Ms. Webb, and the Staff

210D. Experimental Design: 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.
Mr. Muthén, Ms. Webb, and the Staff

211A. The Measurement of Educational Achievement and Aptitude. Prerequisite: course 210A. A critical study of tests of achievement and aptitude, with emphasis on group tests; the relation of achievement to aptitude; social implications of the measurement of intelligence; elements of validity and reliability. Mr. Popham, Mr. Skager

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.
Mr. Burstein, Mr. Shavelson, Ms. Webb

211C. Problems in Measurement. Prerequisites: courses 210C, 211B, or equivalent. Generalizability theory, statistical theories of test scores; item response theory, factor analysis.
Mr. Muthén, Mr. Shavelson, Ms. Webb

212A. Learning and Education. Models of learning, modeling, reinforcement, motivation, encoding, memory, transfer, individual differences, and instruction. Ms. Graham, Mr. Silberman, Mr. Wittrock

212B. Motivation and Affect in the Educative Process. Prerequisites: courses 210A, 212A. A review of the theoretical and empirical literature on motivational factors in school settings and the conditions for the acquisition of affective outcomes.
Ms. Graham

212C. Cognition and Creativity in Education. Prerequisite: course 212B. A review of the theoretical and empirical literature on cognitive processes in school learning, including concept learning, problem solving, learning to learn, and creativity.
Mr. Wittrock

213A. Fundamentals of Student Personnel Work. Prerequisite: graduate standing or consent of instructor. Analysis and in-class application of student and pupil personnel service methods, with emphasis on task groups and evaluation.
Mr. Healy, Mr. Sorenson

213B. Legal and Ethical Bases of Student Personnel Work. Prerequisite: course 213A. Ethical and legal codes relevant to pupil personnel services; relation of value systems and personality; case studies in the implications of personal values in counseling situations. Mr. Berry, Mr. Sorenson

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 the effect of behavior changes in individuals and groups. Evaluation of the social, psychological, and educational principles related to the therapeutic experiences of individuals in small groups. Mr. Berry

214A. Counseling Theory and Practice. Application of concepts drawn from cognitive psychology to the nonacademic problems which people encounter in everyday life, such as finding suitable employment, achieving satisfying interpersonal relationships, and making productive use of leisure time.
Mr. Sorenson

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. Sorenson

214C. Principles of Career Planning. Examination of the nature of careers across ages and ethnic and sexual groups in order to determine implications for career planning in postindustrial society.
Mr. Healy

214D. Vocational Guidance. Depth study of current interests and needs in vocational guidance; principles, problems, and practices of vocational guidance.
Mr. Berry, Mr. Healy

214E. Alcohol and Other Drugs in Contemporary Society. Extent and variety of substance abuse and dependency in schools and wider society. Relevant theory, including predisposing factors, effects on users and significant others, and recovery process. Critical indicators of substance dependency in the counseling interview. Prevention education and intervention strategies for youths and adults.
Mr. Skager

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 the psychological, educational, and sociological characteristics of counseling clients within a cross-cultural perspective and the implications for counseling models. Evaluation of counseling practices through an analysis of school, community, and mental health settings. Mr. Berry

217A. Social Development and Education. Biological and familial, school, and other influences on the child; development in the 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

217B. Cognitive Development and Education. Lecture, two hours; discussion, two hours. Prerequisite: graduate standing. A critical review of theories and research in cognitive development, focusing on the work of Piaget and Vygotsky, and the relation of this work to issues in educational practice.
Mr. Saxe, Ms. Stipek

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 the status of emotional behavior in personality theory and development. Ms. Feshbach

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

218A. Multiple Regression Analysis. Prerequisite: course 210B. Regression-based techniques for analyzing quantitative data; multiple regression methods, multiple correlation, partial correlation; introduction to the general linear model, with direct application to educational inquiry.
Mr. Burstein, Ms. Webb

218B. Advanced Quantitative Models in Non-experimental Research. Prerequisites: course 218A or equivalent, consent of instructor. Quasi-experimental research designs, longitudinal models, introduction to causal models, path analysis, recursive and nonrecursive model estimation. Emphasis on conceptual and methodological foundations, assumptions, applications, and limitations.
Mr. Burstein, Mr. Muthén

218C. Structural Equation Modeling. Prerequisites: courses 210D, 218B, or equivalent. Extends path analysis (causal modeling) by considering models with measurement errors and multiple indicators of latent variables. The LISREL approach, including confirmatory factor analysis, covariance structure modeling, and multiple-group analysis. Identification, estimation, testing, and model building considerations. Mr. Muthén

219. Laboratory: Advanced Topics in Research Methodology. Provides assistance in the design of research and interpretation of data to advanced students from other specializations. Coverage of special topics not included in other courses on research methods. Mr. Burstein, Mr. Shavelson, Ms. Webb

220A. Inquiry into Schooling: Organization and Change. Critical analysis of issues in the reconstruction of schooling; concepts of function and structure of schooling; organization theory; systems approaches in the analysis of organization development and change.
Ms. Crabtree, Ms. Kourilsky, Ms. Tyler

220B. Inquiry into Schooling: Curricular Problems. Inquiry into the curriculum of schooling. Critical analysis of the relationship of curricular decision making to social system and contextual variables.
Ms. Crabtree, Ms. Kourilsky, Ms. Tyler

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

M222A. A Laboratory for Naturalistic Observations: Developing Skills and Techniques. (Same as Anthropology M236Q and Psychiatry M235.) Lecture, three hours. Prerequisite: consent of instructor. The skill of observing and recording behavior in natural settings, with emphasis on field training and practice in observing behavior. Discussion of some of the uses of observations and their implications for research in the social sciences. Students are expected to integrate observational work into their current research interests. May be repeated for credit.
Mr. Levine

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. Mr. Levine

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

223. Aesthetics and the Curriculum. Lecture, two hours; discussion, two hours. An examination of various ideas and theories in aesthetics and the application of these in schooling contexts. Mr. Weinberg

224. Problems and Issues in Bilingual and Multicultural Education. Introduction to the 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 the 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. Hecht, Ms. Krupski, and the Staff

225B. Advanced Issues in the Education of Exceptional Individuals. Prerequisite: consent of instructor. A synthesis of developmental and educational theory relevant to the study of exceptional individuals, including consideration of the historical context of current research and applied issues in special education. Ms. Keogh

226. Research in the Education of Learning Handicapped Individuals. Prerequisite: course 225A or consent of instructor. Research on the education of individuals with learning handicaps, with emphasis on assessment and instructional modifications.

227A. Research on the Learning Characteristics of Exceptional Individuals. Prerequisite: course 225B. An overview of research and theory regarding learning characteristics of exceptional individuals and discussion of the application of this work to educational practice. Ms. Krupski

227B. Research on the Cognitive and Language Characteristics of Exceptional Individuals. Prerequisite: course 227A. Review of the empirical and theoretical literature regarding the language and cognitive development of exceptional individuals; focus on intervention programs developing language and cognition. Ms. Hecht

227C. Research on the Behavioral and Social Characteristics of Exceptional Individuals. Prerequisite: course 227B. Analysis of social and emotional development of exceptional individuals and the development of social competence in special education programs. Mr. Hewett

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

M229A-M229B. Seminar in Behavioral Biology. (Same as Anthropology M228A-M228B, Biology M252A-M252B, Physiology M252A-M252B, Psychiatry M291A-M291B, and Psychology M230A-M230B.) Discussion, six hours. Prerequisite: consent of instructor. Basic seminar for graduates interested in behavioral biology. An interdisciplinary course dealing with behavioral research in anthropology, biology, psychology, and the medical sciences. Proximate causation, development, and evolution in animal behavior. Physiology and the organization of behavior. Vertebrate social organization. Animal communication. The application of natural selection theory to human social behavior. In Progress grading.
Mr. Blurton Jones

230. Criterion-Referenced and Norm-Referenced Test Construction. (Formerly numbered 410.) Prerequisite: course 211A. Construction of criterion- and norm-referenced assessment instruments. Appropriateness of different assessment devices considered in relation to research, development, and evaluation.
Mr. Popham

M231. The Structure of Occupations. (Same as Sociology M231.) Lecture, two hours; discussion, two hours. Shifts in the occupational structure of the United States, changing skill requirements for jobs, the effects of automation on work environments, and the role of formal and informal education in preparing people for occupations. Mr. O'Shea, Ms. Wrigley

232. Industrialism, Work, and Education. Study of the relationship between education and the making of a working class in the new urban industrial America, 1860 to the present. Mr. S. Cohen

233. Institutional Incentives and Social Values in the Development of Job Training. Institutional incentives and social values that affect the development of job training programs, relevant research, and potential future job training policy. Mr. Wilms

234. Education and Social Stratification. The 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.
Mr. O'Shea, Ms. Wrigley

235. Education and Work. A review of the theoretical and empirical literature on issues concerning the interface of education and work. A review of alternatives in the school-to-work transition of youth and an appraisal of present vocational training and manpower development programs. Mr. Silberman

236. Human Abilities. Prerequisite: course 210B or equivalent. The 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

237. Principles for Effective Media. Prerequisites: courses 205, 210A, and 212A, or consent of instructor. Elucidation of theoretical principles underlying effective media content and media utilization. Consideration of particular differences among print, computers, and audiovisual media, in and out of school. Role of research in development of such materials.
Ms. Baker, Ms. Dorr

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. Mr. Clark

239. The 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.
Ms. Mock

240A. Organizational and Administrative Perspectives on School Management. Introductory course in administrative and organizational theory, with emphasis on the management of public and private schools and school systems. Perspectives on dominant educational reform strategies in the context of schools as complex organizations.
Mr. Williams

241. Research Methodology in School Administration. Prerequisite: consent of instructor. Examination of research problems and strategies in school administration.
Mr. Erickson, Mr. Williams, and the Staff

242. Economic Analysis for Educational Policy and Planning. Prerequisite: graduate standing. An 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

244. Economics of Education. An introductory course in microeconomic and macroeconomic techniques applied to education. Methodologies such as marginal analysis, linear programming, Leontief I-O models, and Lorenz curve analysis, with application to school finance, underdeveloped countries, equality of educational opportunity, and credentialing.
Mr. Bruno, Mr. Solmon

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 the conduct of cost-benefit studies. Mr. Alkin, Mr. Solmon

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. A mathematics review and instruction in the use of the 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

247. Seminar: Personnel Training for the Corporate Setting. Lecture, two hours; discussion, two hours. Survey of major topics on personnel training methods used by organizations to facilitate the learning of job-related behavior on the part of their employees. Topics include needs assessment, maximizing trainees' learning, training methods, and evaluating training programs. Mr. Silberman

248. Seminar: Perspectives on Lifelong Learning. From an interdisciplinary perspective, lifelong learning is studied theoretically and as an area of educational research, policy, and practice. Conceptual distinctions among the 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 the 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 the scope of information needed for various purposes and the problems of interrelating this information to appraise overall institutional functioning and effectiveness. Mr. Trent

251A. Seminar: Philosophy of Education, Epistemology. Prerequisite: consent of instructor. Mr. Ericson

251C. Seminar: Philosophy of Education, Behavioral Science Problems — Methodological Perspectives. Prerequisite: course 206C or consent of instructor. Mr. Ellett, Mr. Ericson

251D. Seminar: Philosophy of Education, Problems in Ethics and Values. Prerequisite: course 206D or consent of instructor. Mr. Ellett, Mr. Ericson

251E. Seminar: Philosophy of Education, Selected Issues.

252A. Seminar: Educational Organizations. Prerequisite: course 208A or consent of instructor. Mr. O'Shea, Ms. Wrigley

252B. Seminar: Education and Social Change. Prerequisite: course 208A or consent of instructor. Mr. O'Shea

253A. Seminar: Current Problems in Comparative Education.

253B. Seminar: African Education.

253C. Seminar: Asian Education. Mr. Hawkins

253D. Seminar: Latin American Education.

253E. Seminar: European Education. Mr. Rust

253F. Seminar: Education in Revolutionary Societies. A multidisciplinary and comparative study of socialist educational theory examined through the writings of Marx, Lenin, Mao, and others. The 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 the issues and topics include Asian Americans and the community, socioeconomic status, the education-to-work transition, the language and culture question. Mr. Nakanishi

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).

255. Seminar: Special Topics in Measurement and Research Design. Prerequisites: courses 210C and 211C, or consent of instructor.

256A. Seminar: Special Topics in School Learning. Prerequisite: consent of instructor. Ms. Graham, Mr. Wittrock

256B. Seminar: Special Topics in Development. Prerequisite: consent of instructor.

257. Seminar: Pupil Personnel Services. Prerequisite: consent of instructor. Mr. Berry, Mr. Healy, Ms. Tidwell

258A. Seminar: Problems in Instructional Research. Mr. Wittrock

258B. Seminar: Problems in Instructional Development. Ms. Baker, Ms. Dorr, Mr. Levine

259A. Seminar: Research on Characteristics of Students. Mr. Trent

259B. Seminar: Research on Characteristics of Educational Environments.

260. Seminar: Principles of Curriculum and Instruction. Mr. McNeil, Ms. Tyler

261A. Seminar: Early Childhood Education. Prerequisite: course 421A.

261C. Seminar: Secondary Education. Mr. McNeil, Mr. Silberman

261D. Seminar: The Community College. Mr. A. Cohen

261E. Seminar: Education and Work. Mr. Silberman and the Staff

261F. Seminar: Higher Education. Mr. Trent

262A. Seminar: The Social Studies. Ms. Crabtree

262B. Seminar: Reading. Mr. McNeil

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. Ms. Kourilsky

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.

267. Seminar: Educational Technology. Ms. Baker, Ms. Dorr

275. Seminar: School Desegregation. Prerequisite: consent of instructor. Analysis of the social/political response to desegregation programs in Northern and Southern school districts; review of court decisions and development of legal policy on school desegregation. Consideration of effects of integration on school achievement and interracial attitudes. Ms. Wrigley

280A. Seminar: Selected Topics in Special Education (2 units). Prerequisite: consent of instructor.

280B. Seminar: Exceptional Individuals. Prerequisite: doctoral standing.

M281A-M281B-M281C. Seminar: Selected Topics in Human Ethology. (Same as Anthropology M229A-M229B-M229C and Psychiatry M279A-M279B-M279C.) Ethologists now use successful animal behavior methodology to study human behavior. When is this appropriate, how can it contribute? Each quarter covers one level of analysis: describing and recording behavior; causation; development, especially longitudinal studies; adaptation; evolutionary origins. Mr. Blurton Jones

299A-299B-299C. Research Practicum in Education (4 to 8 units each). May be repeated for credit.

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 the study and utilization of a variety of instructional strategies and their application in elementary and secondary schools. Ms. Crabtree, Ms. Kourilsky, Mr. McNeil

313A-313B. Principles and Methods for Teaching Elementary Mathematics (6 to 12 units each). Limited to credentialed teachers. 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. Mr. Lara

313C-313D. Principles and Methods for Teaching Secondary Mathematics (6 to 12 units each). Limited to credentialed teachers. 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. Mr. Lara

314A-314B. Principles and Methods for Curriculum, Instruction, and Leadership in Mathematics (6 to 12 units each). Limited to credentialed teachers. Course 314A is prerequisite to 314B. Problem-solving, curriculum development, implementation of the California Mathematics Framework, strategies for encouraging women and minorities into mathematics, and leadership development. S/U grading. Mr. Lara

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 the elementary school. 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. Ms. Kourilsky

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 the secondary school. 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. Ms. Kourilsky

317A. Principles and Methods for Teaching Elementary Science — K-2 (6 to 12 units). Limited to credentialed teachers. Conceptual teaching of science and incorporation of science process skills for grades K-2. Demonstrations, hands-on experiences, and development of teaching materials. S/U grading. Mr. Lara

317B. Principles and Methods for Teaching Elementary Science — 3-4 (6 to 12 units). Limited to credentialed teachers. Conceptual teaching of science and incorporation of science process skills for grades 3-4. Demonstrations, hands-on experiences, and development of teaching materials. S/U grading. Mr. Lara

317C. Principles and Methods for Teaching Elementary Science — 5-6 (6 to 12 units). Limited to credentialed teachers. Conceptual teaching of science and incorporation of science process skills for grades 5-6. Demonstrations, hands-on experiences, and development of teaching materials. S/U grading. Mr. Lara

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. Ms. Kourilsky

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. Kourilsky

321A. Principles and Methods for Teaching Physics — 7-12 (6 to 12 units.) Limited to credentialed teachers. 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.
Mr. Lara

321B. Principles and Methods for Teaching Chemistry — 7-12 (6 to 12 units.) Limited to credentialed teachers. 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.
Mr. Lara

321C. Principles and Methods for Teaching Earth and Space Sciences — 7-12 (6 to 12 units.) Limited to credentialed teachers. 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. Mr. Lara

321D. Principles and Methods for Teaching Life Sciences — 7-12 (6 to 12 units.) Limited to credentialed teachers. 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.
Mr. Lara

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. Limited to credentialed teachers. 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. Mr. Lara

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. Limited to credentialed teachers. 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. Mr. Lara

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.
Ms. Kourilsky

324B. Supervised Teaching: Multiple Subject Instruction (2 to 10 units). Prerequisites: course 324A, consent of instructor. Practice teaching under the daily supervision of a teacher in a classroom in which multiple subjects are taught, normally in an elementary school. S/U grading. Ms. Kourilsky

324C. Supervised Teaching: Multiple Subject Instruction (2 to 10 units). Prerequisites: course 324B, consent of instructor. Advanced practice teaching under the daily supervision of a teacher in a classroom in which multiple subjects are taught, normally in an elementary school. S/U grading.
Ms. Kourilsky

324D. Supervised Teaching: Multiple Subject Instruction (2 to 10 units). Prerequisites: course 324C, consent of instructor. Advanced practice teaching under the daily supervision of a teacher in a classroom in which multiple subjects are taught, normally in an elementary school. S/U grading.
Ms. Kourilsky

325A. Laboratory in the Education of Exceptional Individuals. Prerequisite: course 125A or consent of instructor. Six to eight hours per week of fieldwork in the UCLA Neuropsychiatric Institute and Hospital School, other campus facilities, or public school special education programs.

325B. Advanced Laboratory in the Education of Exceptional Individuals. Prerequisite: course 325A. Six to eight hours per week of fieldwork in the UCLA Neuropsychiatric Institute and Hospital School, other campus facilities, or public school special education programs.

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.
Ms. Kourilsky

330B. Supervised Teaching: Single Subject Instruction (2 to 10 units). Prerequisites: course 330A, consent of instructor. Practice teaching under the daily supervision of a teacher in a classroom in which a single subject is taught, normally in a secondary school. S/U grading. Ms. Kourilsky

330C. Supervised Teaching: Single Subject Instruction (2 to 10 units). Prerequisites: course 330B, consent of instructor. Advanced practice teaching under the daily supervision of a teacher in a classroom in which a single subject is taught, normally in a secondary school. S/U grading. Ms. Kourilsky

330D. Supervised Teaching: Single Subject Instruction (2 to 10 units). Prerequisites: course 330C, consent of instructor. Advanced practice teaching under the daily supervision of a teacher in a classroom in which a single subject is taught, normally in a secondary school. S/U grading. Ms. Kourilsky

334. Supervised Teaching: Higher Education.
Mr. A. Cohen

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. Ms. Kourilsky

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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.

411A. Introduction to Educational Evaluation. An introduction to systematic evaluation as it applies to appraising educational programs. Consideration of program evaluation as a means of improving the quality of educationally relevant decisions.
Mr. Alkin, Mr. Popham

411B. Procedural Problems in Evaluation. (Formerly numbered 411C.) 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

413A-413B-413C. Internship in School Psychology. Lecture, two hours; field experience, 16 hours. Prerequisite: consent of instructor. Must be completed in three consecutive quarters; limited to students enrolled in the counseling specialization. Work experience in public schools or comparable setting performing duties of a school psychologist — psychodiagnosis, integrating case material, staffing cases, developing educational plans, working with teachers and parents, and establishing evaluative criteria.
Mr. Healy, Ms. Tidwell

415A. The Appraisal of Intelligence. Prerequisites: courses 210A, 211A. Concepts and theories leading to development of individual cognitive assessment instruments; issues and implications relating to the application and current practices of utilizing such tests in a multicultural society. Laboratory experience includes administration and interpretation of standardized instruments; case studies.
Mr. Healy, Ms. Tidwell

415B. Human Appraisal in School Counseling and School Psychology. Prerequisites: course 415A, consent of instructor. Survey and demonstration of the major techniques of cognitive, affective, and achievement appraisal and their applicability to problems found in the school setting. Research and theoretical issues concerned with appraisal.
Ms. Tidwell

418. Instructional Analysis. Prerequisite: consent of instructor. Analysis of instructional variables as they relate to diverse types of instructional strategies. Students acquire skill in techniques of conducting instructional research. Ms. Baker

419A. Experimentation on Media of Communication and Instruction. Prerequisite: course 210A. Analysis of basic methods used and results obtained in experiments on the development of knowledge, skills, and attitudes through audiovisual communication media and other instructional programs.
Ms. Baker, Ms. Dorr

419B. Experimental Analysis of Instructional Program Variables. Lecture, two hours; laboratory, four hours. Prerequisites: courses 210A, 212A, 419A. Recommended: courses 210B, and 212B or 212C. Advanced problems of methodology and rationale in the planning and conduct of experiments on the effects of psychologically defined variables in instructional programs; theory and techniques of laboratory and field experiments on instructional media.
Ms. Baker, Ms. Dorr

420A. Principles of Curriculum. Critical examination of the basic concepts underlying the determination of objectives, the selection and organization of learning experiences, and the evaluation process.
Ms. Crabtree, Mr. McNeil, Ms. Tyler

420D. Curriculum: Principles and Practice. An examination and application of various curricular perspectives to questions of purpose, learning opportunities, and evaluation. Mr. McNeil, Ms. Tyler

421A. Programs, Models, and Research in Early Childhood Education. Prerequisites: one course from the development series, one quarter of field placement. Examination of programs and research in early childhood, including observation of programs and review of the relation of research in developmental psychology and education to goals of early childhood education.

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 the quality of child-related programs.

421D. Parents and Community Agents in Childhood Development. Prerequisites: two courses from the development series, one course from early childhood education, or equivalent. A critical review of the theoretical basis and effectiveness of training programs for parents of young and elementary school-aged children; the relation of preschool parent programs to family development and the role of the programs in the community. Ms. Feshbach

421F. Problems and Methods of Analysis in Child Development, Education, and Social Policy. Lecture, two hours; discussion, two hours. Relationships among public policymakers and social scientists in the 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. Stipek

421G. Issues in the Application of Child Development and Educational Research to Social Policy. Lecture, two hours; discussion, two hours. The relevance and adequacy of child development research to specific educational and public policies affecting children. Specific topics include issues such as children's rights, day care, children's television programming, and violence toward children.
Ms. Feshbach, Ms. Howes

422. Inquiry into Schooling: Basic Issues. Critical examination of basic issues and problems in the organization and reconstruction of precollegiate schooling. Consideration of historical development and changing functions of schooling in American society; school organization; schooling alternatives; problems in the management of educational change.
Mr. McNeil, Ms. Tyler

423. The Humanistic Curriculum. A consideration of the philosophical and cultural foundations of humanistic curricular strategies. Review of techniques and procedures of affective education with a view to their place in an overall theory of teaching and learning. Mr. Weinberg

424A. The 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. Ms. Crabtree

424B. Reading in the Curriculum. Prerequisite: course 210A. Study of reading curricula and instructional procedures, with emphasis on the rationale and research underlying their development and the research comparing their effectiveness. Mr. McNeil

424C. Language in the Curriculum. Advanced study in the school language curriculum; application to the improvement of the curriculum in the field.

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 the bilingual learner; language assessment; development of instructional component; program evaluation.
Ms. Valadez

425. Appraisal of Exceptional Individuals. Prerequisites: courses 225A, 415A, or equivalent. Individual appraisal of exceptional individuals; analysis of tests and diagnostic procedures, case studies.

430. Higher Education and the Labor Market. The benefits of education from an economic perspective; the labor market for college graduates; college as preparation for work; manpower forecasting and Ph.D. demand and supply; policies toward the doctoral labor market and adults in postsecondary education. Mr. Solmon

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. Ms. Mock

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

432. Seminar: Professional Topics in Higher Education. Ms. Astin

433A. Instructional Product Development. Prerequisite: consent of instructor. An examination of the procedures employed in the systematic development of instructional products. Students acquire competencies associated with those procedures.
Ms. Baker, Ms. Dorr

433B. Technological Development in Educational Media. Lecture, two hours; laboratory, four hours. Prerequisite: course 433A. Recommended: courses 210A, 212A. 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

437A. Principles of Curriculum in Economic Education. Theories, principles, and concepts relating to an understanding of the business and economic system; their application to teaching in the secondary school. Ms. Kourilsky

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 the strategies of their solution through curriculum policy and practice; instructional design and operation; in-service training of teaching staffs.
Mr. Erickson and the Staff

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 the 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

441C. Instructional Supervision C. Prerequisites: courses 441A, 441B, or equivalent. Development of individual and group staff development activities, including presentations, demonstrations, peer coaching, planning and conducting teacher conferences; observation and analysis of conferences; and in-service training techniques: teaching principles of learning and effective teaching to other professionals.
Ms. Hunter

442B. Legal Aspects of Educational Management and Practice. Examination of the structures and kinds of law governing educational systems in the United States; constitutional dimensions of church/state relations; employees' civil rights and legal aspects of hiring, firing, and negotiating procedures; student attendance, control, and civil rights.

443. Introduction to Policy Analysis in Education. Prerequisite: consent of instructor. An overview of the political, economic, and legal context of educational policy formation. Included in this examination are issues that impact on minorities (e.g., bilingual education, desegregation, affirmative action, the role of subdominants in the policy-making process).
Mr. Catterall

444A. Legal Aspects of Access to a Public Education. Prerequisite: course 442B or consent of instructor. A study of access to public education focused on the 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. A concentrated review of the 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 the problems of urban school leadership. Emphasis on the changing nature of the urban principalship, with considerable attention to the role of other school and community agencies that interact with the urban school leader.
Mr. Williams

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.

460. Seminar: Special Issues in Evaluation. Topics and instructors vary each quarter. Recent emphases included evaluation utilization and cost-effectiveness evaluation. Mr. Alkin, Ms. Baker, Mr. Popham

461A. Seminar: Adult Education.

461B. Seminar: Adult Education in Other Countries.

461C. Seminar: Community Service and Development Programs in Postsecondary Education.

470A. Seminar: Large Systems and Individual Schools. Prerequisite: consent of instructor.

470B. Seminar: Educational Government. Prerequisite: consent of instructor.

481. Knowledge and Inquiry in the Classroom. Prerequisite: consent of instructor. The 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. Ellett, Mr. Weinberg

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. Ms. Kourilsky

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.

491A. Curricular Decision Making. Prerequisite: consent of instructor. Examination of alternative solutions for the 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 the evaluation of teaching and learning; the use of modern appraisal techniques in classroom settings.

498A-498B-498C. Directed Field Experience (4 to 8 units each). May be repeated for credit.

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. Course is used to record enrollment in practicum courses taken under cooperative arrangements with California State University, Los Angeles. S/U grading.

596. Directed Independent Study (6 to 12 units). Individual study or research for graduate students. May be repeated for credit.

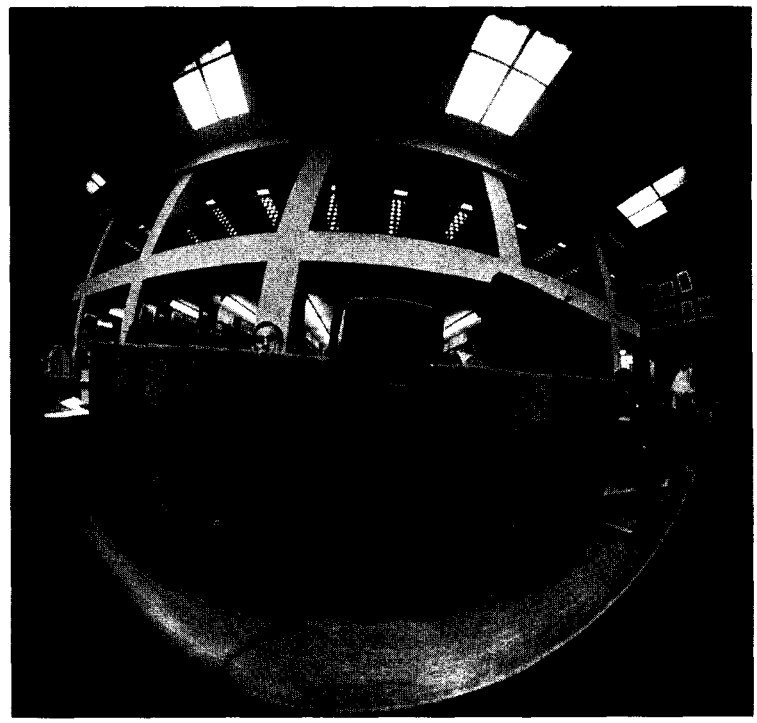
597. Preparation for Master's Comprehensive Examinations or Doctoral Qualifying Examinations (6 to 12 units). Individual study for master's comprehensive examinations or for Ph.D. or Ed.D. qualifying examinations. May be repeated for credit. S/U grading.

598. Thesis Research (6 to 12 units). Research for and preparation of master's thesis. May be repeated 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



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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, (213) 825-4841

Admissions: 50 Dodd Hall, (213) 825-2080

Professors

Benjamin Aaron, LL.B.
Richard L. Abel, LL.B., Ph.D.
Norman Abrams, J.D.
William P. Alford, M.A., LL.B., J.D., *Acting*
Reginald H. Alleyne, Jr., LL.B., LL.M.
Alison Grey Anderson, J.D.
Michael R. Asimow, LL.B.
John A. Bauman, LL.B., LL.M., Jur.Sc.D.
Paul B. Bergman, J.D.
David A. Binder, LL.B.
Grace G. Blumberg, J.D., LL.M.
David Dolinko, J.D., Ph.D., *Acting*
Jesse J. Dukeminier, J.D.
Julian N. Eule, J.D., LL.M.
William E. Forbath, J.D., *Acting*
Carole E. Goldberg-Ambrose, J.D., *Associate Dean*
Robert D. Goldstein, M.Ed., J.D., *Acting*
Kenneth W. Graham, Jr., J.D.
Joel F. Handler, J.D.
Harold W. Horowitz, LL.B., LL.M., S.J.D.
Edgar A. Jones, Jr., LL.B.
Robert L. Jordan, LL.B.
Kenneth L. Karst, LL.B.
William A. Klein, LL.B.
Leon Letwin, LL.B., LL.M.
Wesley J. Liebeler, J.D.
Christine Littleton, J.D., *Acting*
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.
Herbert Morris, LL.B., D.Phil.
Stephen R. Munzer, B.Phil., J.D.
Frances E. Olsen, J.D., S.J.D., *Acting*
Patrick O. Patterson, J.D., *Acting*
Susan Westerberg Prager, M.A., J.D., *Dean*
Arthur I. Rosett, LL.B.
Gary T. Schwartz, J.D.
Murray L. Schwartz, LL.B., LL.D.
Steven H. Shiffrin, M.A., J.D.
James D. Sumner, Jr., LL.B., LL.M., J.S.D.
Phillip R. Trimble, M.A., LL.B.
Jonathan D. Varat, J.D.
William D. Warren, J.D., J.S.D.
John S. Wiley, J.D., *Acting*
Stephen C. Yeazell, M.A., J.D.
Eric M. Zolt, M.B.A., J.D., *Acting*
Richard C. Maxwell, LL.B. *(Emeritus Connell Professor of Law)*
David Mellinkoff, LL.B., *Emeritus*
Rollin M. Perkins, J.D., J.S.D. *(Emeritus Connell Professor of Law)*
Harold E. Verrall, M.A., LL.B., S.J.D., *Emeritus*
Kenneth H. York, LL.B., *Emeritus*

Lecturers

Susan Cordell Gillig, J.D., *Assistant Dean, Clinical Programs*
Kenneth N. Klee, J.D.
Kristine S. Knaplund, J.D.
Roderick D. Margo, LL.B., D.C.L.
Michael Rappaport, J.D., *Assistant Dean, Admissions*
David W. Reimann, J.D.
Antonio Rossmann, J.D.
Gary Stiffelman, M.F.A., J.D.

Adjunct and Visiting Professors

Abdullahi Ahmad An-Na'im, LL.B., Ph.D., *Visiting*
Jose A. Bracamonte, J.D., LL.M., *Visiting*
Charles M. Firestone, J.D., *Adjunct*
Albert J. Moore, J.D., *Visiting*

The School of Law, the only academic unit at UCLA which operates 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 of the United States.

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 in 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, 50 Dodd Hall, UCLA, Los Angeles, CA 90024.

For information on the proficiency in English requirements for international graduate students, refer to "Graduate Admission" in Chapter 3.

Residence and Unit Requirements

The candidate for the degree of Juris Doctor must have pursued resident law school study for six semesters and successfully completed 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 Anglo-American 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.

M.A.-Architecture/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.

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. (This program will not be offered in 1986-87.)

M.B.A./J.D.

The School of Law and the 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 American and foreign 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 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, New York, and Hawaii.

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). The law governing private agreements. Analysis of the criteria for determining whether or not a particular promise or voluntary agreement is legally enforceable and a survey of the major legal issues affecting enforceable agreements. Problems of interpreting contract language, the role of contract in a market society, the conflict between the commercial need for certainty and the demands of individual fairness, and the relationship between contract law and other areas of law.
Mr. Asimow, Ms. Littleton, Mr. McGovern, Mr. Rosett, Mr. Sumner

110. Legal Research and Writing (5 units). The year-long course teaches first-year students how to find the law, how to analyze it, and how to communicate their conclusions in writing. Focus on the skills of analyzing legal authority, developing arguments to solve specific problems where there is conflicting authority, and structuring legal writing which is clear, informative, and persuasive.

120. Criminal Law I (3 units). Selected topics in substantive criminal law. Consideration of principles underlying the definition of crime; an examination of various attempts to eliminate the requirement of mens rea and a consideration of such general doctrines as ignorance of fact and ignorance of law, causation, attempt, complicity and conspiracy; inquiry into principles of justification and excuse, with particular attention to the doctrines of necessity, intoxication, insanity, diminished capacity, and automatism. Emphasis on the basic theory of criminal law and the relationship between the doctrines of criminal law and the various justifications for imposition of punishment. Mr. Abrams, Mr. Dolinko, Mr. Eule, Mr. McGee, Mr. M. Schwartz

121. Criminal Law II (3 units). The criminal process insofar as it is affected by constitutional and statutory prescriptions and proscriptions. The restraints on law enforcement officers, including such police activities as arrest, stop-and-frisk, inspection and detention of various kinds; taking of statements; the modern techniques of electronic surveillance; and seizure of property with and without a warrant. Emphasis on the judicial resolution of the tension between constitutional imperatives and the techniques used to prevent crime and apprehend and convict those who commit it. Mr. Abrams, Mr. Dolinko, Mr. Goldstein, Mr. McGee, Mr. M. Schwartz, Mr. Shiffrin

130. Property (6 units). An analysis of property as a social institution and particularly of the dynamics of the system for recognizing and protecting competing claims to resources. Major problem areas include the historical development of various kinds of interests in property, sale and financing of real estate, housing, landlord and tenant, and public and private land-use planning and development.
Ms. Blumberg, Mr. Dukeminier, Mr. Lowenstein, Mr. Munzer

140. Torts (5 units). Personal injury law as it has developed within the Anglo-American legal tradition. The concept of negligence, the refinements of negligence law, and the doctrine of intentional torts. Contemporary rules of strict liability. Effort to identify the basic purposes which our tort law system achieves or should achieve. Mr. Abel, Ms. Anderson, Mr. Jones, Ms. Olsen, Mr. G. Schwartz, Mr. Shiffrin

145. Civil Procedure (5 units). The processes that courts follow in deciding disputes in noncriminal cases. The way in which conflicts are framed for courts, the stages through which litigation goes, the division of power among the various decision makers in the legal system and between the state and federal courts, the territorial limitations on the exercise of judicial power, the principles that define the consequences of a decision once a court has finished with a case, and the special opportunities and problems of litigations involving multiple disputants.
Mr. Delgado, Mr. Forbath, Ms. Goldberg-Ambrose, Mr. Graham, Mr. Letwin, Mr. Yeazell

Second- and Third-Year Courses*

All of the courses in the second- and third-year curriculum are elective with the exception of Law 312. Students must complete the professional responsibility requirement to graduate, either by preparing a paper in consultation with a faculty member or by completing one of the sections of course 312. The different sections vary in emphasis.

*The School of Law maintains its own course numbering system; course numbers as shown here do not correspond to Graduate Division course numbering definitions.

312. The Legal Profession (Section 1). The sociology of the legal profession, including such topics as the history of the legal profession, the distribution of legal services, the social structure of the profession (public/private, civil/criminal, etc.), and exposure to the world of practice (through role-plays, problem sets, and the reading of ethnographies and biographies about lawyers). The rules of lawyering, including such topics as the Code of Professional Responsibility, the Model Rules of Professional Conduct, and other applicable rules governing the practice of law (conflicts of interest, zealous representation, ineffective assistance of counsel, representational activity both in the courtroom and law office, and the frequently conflicting demands and requirements of the rules). The personal, professional, and moral identity of lawyers, including such topics as what it means to become a "professional," the role of lawyers in society, the political, social, and moral consequences of lawyering activity, and the meaning of both individual and professional responsibility.
Ms. Menkel-Meadow, Mr. M. Schwartz

312. The Legal Profession (Section 2). Consideration of what is wrong with the legal profession and what, if anything, can be done to change it. Sociological explanations for unethical behavior in terms of the structure of practice, patterns of recruitment, socialization, and allocation to professional role, and the failure of disciplinary procedures. The allocation of lawyers' services by market mechanisms in an unequal society leads to overrepresentation of the few and underrepresentation of most. The concept of legal "need," why we might want to meet unmet need, and the multiplicity of recent reforms that speak to this problem. Satisfies the professional responsibility requirement. Mr. Abel

Elective Courses

200. Constitutional Law I. Ways in which the United States Constitution (1) distributes power among the various units of government in the American political system and (2) limits the exercise of those powers. Structural limitations on government: the division of powers between the nation and the states in the federal system, and the separation of powers among the three branches (legislative, executive, and judicial) of the national government. Civil War Amendments (13th, 14th, and 15th) as limits on the states and as sources of congressional power. The proper role of the judiciary in limiting the action of other branches of government.

Mr. Eule, Mr. Karst, Mr. Shiffrin, Mr. Varat

201. Constitutional Law II. The First Amendment's guarantees of the freedoms of speech, press, and assembly, and the First Amendment's prohibition of the establishment of religion and its guarantee of the free exercise of religion. Jurisdictional limitations on the federal courts' exercise of the power of judicial review. Mr. Karst, Mr. Shiffrin, Mr. Varat

205. Wills and Trusts. The law of wills, trusts, and future interests. The wealth transmission process from the perspectives of social critics and estate planners. The substantive law of wills and trusts. The administration of decedents' estates and of trusts.

Mr. Dukeminier, Mr. McGovern, Mr. Sumner

207. Community Property. Detailed examination of the 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 the nature of marriage and the various forms of gainful human activity.

Ms. Blumberg, Ms. Prager

208. Real Property Secured Transactions. The use of land as security for debts, with the California cases and statutes presented as an example of an operating system. The real estate security device from its common law origins to the modern deed of trust as it exists in California. Mr. Jordan, Mr. Warren

211. Evidence. The law of evidence is concerned with the process by which parties may prove facts which are essential to the existence of rights and liabilities in civil and criminal litigation. Rules for determining the relevance of evidence, the qualifications which must be met by witnesses, the regulation of the form and manner of interrogating witnesses, privileges granted to certain persons and institutions to refuse to disclose information, the special status of expert witnesses and the problems of proving technical facts, and rules governing documentary proof. The rule excluding hearsay evidence and the exceptions to that rule.

Mr. Abrams, Mr. Bergman, Mr. Graham, Mr. Letwin

212. Federal Courts. Selected problems in the jurisdiction and lawmaking powers of the federal courts, including the appellate jurisdiction of the Supreme Court; federal habeas corpus; the federal-question jurisdiction of the federal district courts; intervention by federal courts in state court proceedings; and choice of law in the federal courts.

Ms. Goldberg-Ambrose, Mr. Karst, Mr. Varat

214. Civil Rights. In-depth study of 42 U.S.C. § 1983. This provision, creating a cause of action for the deprivation of constitutional and federal statutory rights by state actors (i.e., state and local officials and municipalities), is now one of the most litigated actions in the federal courts. A historical review of the origins of § 1983 and its relation to other Reconstruction civil rights legislation and the 14th Amendment. The elements of action, defenses to action, and remedies for constitutional violations. Close attention to competing policies of controlling government abuse and allowing government to operate, and to the tensions in the judicial interpretation of § 1983 that arise from the use of federal power, especially the federal courts, to monitor state officials and governments. Students intending to take this course in addition to courses 200 and/or 212 should take this course concurrently with or after the other course(s).

Mr. Goldstein, Mr. Varat

215. The Law and the Poor. Major income-maintenance programs in the United States: Aid to Families with Dependent Children; Supplementary Security Income; Food Stamps; General Relief; Disability; and Social Security (OASDHI). Basic societal attitudes toward poverty related to welfare programs and policies, with emphasis on AFDC. Topics include the structure of programs, eligibility, constitutional boundaries, work requirements, standard of need, emergency assistance and special needs, child support, remedies, social movements, public interest law, and welfare reform. Mr. Handler

216. Administrative Law. Much of modern government is administered by agencies of government other than legislatures or courts. The substantive sources of (and limits on) administrative authority. The 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. The individual's rights to procedural due process in the individual's interactions with public agencies. Mr. Asimow, Mr. Schwartz

M217. Topics in Legal Philosophy. (Same as Philosophy M256.) Prerequisite: consent of instructor. An examination of topics such as the concept of law, the nature of justice, problems of punishments, legal reasoning, and the 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, the taxpayer to whom the income will be attributed, deductions and credits available in computing tax liability, the year in which income is properly reported and deductions properly taken, and characterization of income as ordinary income or capital gain. Issues of tax policy and reform and the provisions of the Internal Revenue Code and Income Tax Regulations. Mr. Asimow, Mr. Klein, Mr. Zolt

221. Federal Taxation II. Prerequisite: course 220. Course 230 may be taken concurrently. An application and extension of the principles of course 220 to the partner-partnership and shareholder-corporation relationships. The federal income tax consequences of the formation of partnerships and corporations, distributions to partners and shareholders, and liquidations and sales of partnership or shareholder interests. Mr. Zolt

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 the areas of tax planning, estate planning, family law, and probate, among others.

226. Taxation of Foreign Income. Prerequisites or corequisites: courses 220, 221. Tax planning for foreign investment in the United States. Basic rules of U.S. taxing jurisdiction, source of income, withholding, residence, and what constitutes a trade or business. Planning strategies for portfolio investment, direct investment, and acquisition of U.S. real property. Use of income tax treaties and coordination with foreign tax requirements.

227. Federal Taxation of Partners and Partnerships. Prerequisite: course 220. Tax attributes of partnerships; organization, operation (including interim distributions), and termination. Business reasons for the choice of alternative forms of operation, particularly S corporations. Use of partnerships as tax shelter vehicles.

230. Business Associations. The issues that must be addressed when people decide to form joint economic ventures and how these issues are resolved in the law of agency, partnership, and corporation. The federal securities laws and their impact on planning for an operation of business ventures. Mr. Klein

233. Partnership Planning. Prerequisites: courses 220, 230. Recommended: a course in accounting. An advanced problem-oriented course that examines the organization, structuring, operation, and dissolution of partnerships. Detailed substantive study of the statutory and common law of partnerships, partnership taxation, and financial and economic considerations relating to partnership structure and operations. Discussion of problems involving real estate, oil and gas, motion picture, and other contemporary partnership structures.

234. Law and Accounting. Prerequisite: consent of instructor (for students with more than two undergraduate accounting courses). Recommended for students with no prior accounting training. Basic concepts of financial reporting by business enterprise. Bookkeeping; underlying principles of accounting. The relevance of accounting data to legal decision making, including the implications of financial accounting on planning and structuring businesses, compliance with federal securities laws, and reporting for federal income tax purposes. Provides the potential lawyer with understanding and background to read, comprehend, and interpret financial statements.

235. Business Planning. Prerequisites: courses 220, 230. Course 221 may be taken concurrently. An advanced course on the establishment, structuring, and restructuring of business enterprises, primarily in the corporate form. Analysis of four or five realistically complex problems, examining the state and federal corporate problems, the federal income tax implications, and the financial and accounting aspects of each problem, in order to prepare specific and comprehensive plans for dealing with each problem, considering all realistic alternatives and justifying the choices made.

236. Securities Regulation. Prerequisite: course 230 or consent of instructor. Federal and state regulation of the issuance of new securities and trading in outstanding securities. The Securities Act of 1933; the disclosure process as administered by the Securities and Exchange Commission; and exemptions from the prospectus requirements. Disclosure provisions of the Securities Exchange Act of 1934.

240. Antitrust I. Basic understanding of the federal antitrust law: the Sherman, Clayton, and Robinson-Patman Acts. Monopoly, cartels (price fixing, market division, boycotts), vertical restrictions (resale price maintenance, territory and customer allocation), mergers, price discrimination, joint ventures, tie-in arrangements, reciprocity, requirements contracts, etc. The economic perspective used by modern antitrust analysis. Mr. Liebeler, Mr. Wiley

242. Insurance Law. Basic introduction to the general principles of insurance law, including the definition of persons and interests protected, formation of the contract of insurance, insurable interest, concealment, misrepresentation, warranties and conditions, limitations on coverage, waiver and estoppel, the measure of recovery, indemnity and subrogation. Obligations of the insurer and insured during the currency of the insurance contract; the occurrence of the risk insured against. Issues of current significance in insurance litigation, including the insurer's duty to settle, the insurer's duty to defend, the insurance of progressive diseases (asbestosis), the insurability of punitive damages, and problems arising out of the tripartite relationship between insurer, broker, and insured. Mr. Margo

245. Antitrust II. Prerequisite: course 240. The historic Sherman Act monopolization and merger cases. The economic underpinnings of oligopoly theory, which presumably forms the basis for current antitrust policy toward concentrated industries; the validity of the so-called "Market Concentration Doctrine." Current antitrust efforts aimed at monopoly and "shared monopoly." Mr. Liebeler

247. Law and Economics. An economics background is not required. The basic theory of voluntary exchange and the conditions necessary for a voluntary exchange system to maximize community welfare, applied to various types of legal problems in an attempt to gauge the extent to which legal rules contribute to (or hinder) the maximization of such welfare. Mr. Liebeler

248. Bankruptcy. An examination of the Bankruptcy Code and related statutes from the viewpoint of what the 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, reorganization of debtors' businesses, and the avoiding powers of the trustee in bankruptcy. Treatment of the consumer debtor in bankruptcy. Mr. Jordan, Mr. Warren

250. Commercial Law: Chattel Security and Commercial Paper. A detailed examination of the Uniform Commercial Code. A study of Article 9 of the Code, the law governing security interests in personal property. Business collateral such as equipment, inventory, accounts receivable, and chattel paper, as well as the financing of purchases by nonbusiness consumers. Some aspects of bankruptcy law, primarily the law of preferences, applicable to secured creditors. Commercial paper, the law of negotiable instruments (Article 3 of the Code), bank collection process (Article 4), documents of title (Article 7), letters of credit (Article 5), and aspects of sales law (Article 2) that bear on secured transactions and commercial paper. Mr. Jordan, Mr. Warren

251. Commercial Law: Sales. The law governing the sale of goods. Acceptance and rejection, contract cancellations, installment contracts, warranty, risk of loss, documentary sales, remedies for breach of contract, the seller's remedies on insolvency of the buyer. Emphasis on Article 2 of the Uniform Commercial Code, the use of bills of lading and warehouse receipts in sales transactions (Article 7), and letters of credit (Article 5). Mr. Jordan

252. Unfair Competition. Survey of four fields of intellectual property and competitive regulation, covering a range of doctrine that is useful to a general practitioner, business adviser, or litigator. The strands of moral and economic policy that unite these apparently diverse fields. Mr. Wiley

253. Regulated Industries. The theoretical justifications for, and fundamental criticisms of, leading types of economic regulation. Survey of the regulatory structures and issues in the transportation, communication, and energy utility sectors, using statutes, cases, and secondary material to introduce students to the legal issues that traditionally have dominated these fields. The intellectual foundations and empirical results of the recent deregulation movement in these three sectors. Mr. Wiley

255. Tort Law and Economics. Prerequisites: a reasonable interest in economics and at least a minimal understanding of basic college microeconomics. Exploration of the literature analyzing tort law from an economic perspective: to assess and profit from its strengths and to consider its limitations. Mr. G. Schwartz

259. Labor Arbitration. The practice, procedures, and substantive law of labor arbitration, with emphasis on what labor arbitrators actually do in their interpretation of collective bargaining agreements. The 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 the employer bear on the arbitrator's decision-making process? The 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. Basic information concerning the laws and decisions which provide the framework for national labor policy in the private sector. The National Labor Relations Act, the Labor Management Relations Act, the Railway Labor act, and the Norris-La Guardia Anti-Injunction Act. Areas include collective bargaining; selection of bargaining representatives and determination of bargaining units; unfair labor practices; emergency disputes; federal-state jurisdiction; application of antitrust laws; and grievance and arbitration procedures. Mr. Alleyne, Mr. Jones

261. Labor Law II. Prerequisite: course 260 or consent of instructor. Collective bargaining in the public sector (government employment at the federal, state, and local levels). Differences and similarities in the private and public sectors, and the responses of federal and state legislatures and of the courts to the special problems of collective bargaining in the public sector. Mr. Alleyne

262. Law of the Collective Agreement. Prerequisite: course 260. Limited to 10 students. Enhancement of understanding of labor arbitration by a comparative study of the decision of issues brought to labor arbitration which have also been presented to the NLRB and federal courts. Use of transcripts and exhibits of actual arbitration cases. Each student works with three case files, functioning as a union advocate in one, an employer advocate in a second, and an arbitrator in the third. Each student prepares two briefs, one arbitration opinion and award, and a research paper. Mr. Jones

263. Employment Discrimination. Title VII of the 1964 Civil Rights Act and similar statutes prohibit discrimination based on race, sex, national origin, religion, age, and handicap. Examination of the substantive and procedural law that has developed under these statutes; consideration of the 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. Aaron

264. Workers' Injuries. Study of the ways in which the law responds to the phenomenon of workers' injuries and occupational disease. The labor market and unionization, workers' compensation, the federal OSHA job-safety regulation program, and a 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. Bracamonte, Mr. G. Schwartz

267. Indian Law. The special legal status of American Indians and Indian tribes and the tension between moral/legal claims and political forces. The 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 the federal trust relationship to Indians. Ms. Goldberg-Ambrose

268. Labor Law III. The rights and obligations of individual employees in collective bargaining units, especially of those who choose not to belong to a union, under present legislation, as well as some employment rights of employees of unorganized firms. The law of the Labor-Management Reporting and Disclosure Act of 1959, insofar as it relates to the regulations of internal union affairs. Mr. Aaron

269. Law, Foreign Policy, and National Security. Various legal considerations and restraints, both national and international, affecting the formulation of foreign policy and protection of national security. The decision-making process, including the constitutional balance between executive and legislative branches, the foreign relations power of the President, the War Powers Resolution and the Treaty Power. The role of bureaucratic politics. The congressional regulation of foreign policy and its attempts to subject intelligence activities to the rule of law. The problem of protecting national security information in a free society and other Bill of Rights issues. The role of international law affecting national security, including the UN Chapter, and multilateral and bilateral arms control obligations. Mr. Trimble

270. International Law. The role of law and legal institutions in international relations and in government foreign affairs decision making, particularly on the part of the United States. Nature and source of international law and how it is applied in the relations of states. The allocation of responsibility for decision making within the international system and how conflicts in the assertion of jurisdiction are resolved. Major limitations on the exercise of authority by states. The use of force by states, paramilitary groups, and international organizations. Mr. Trimble

271. International Business Transactions. The fundamental legal issues that arise in international trade, licensing, and investment. The legal and financial institutional framework within which international business is conducted; national and international limitations affecting the movement of goods, the transfer of technology, and the flow of capital; the organization, financing, and protection of international business undertakings; the use of agents, distributors, and licensees; problems of contract negotiation and dispute resolution in an international setting; and foreign investment. Mr. Alford, Mr. Rosett

272. International Economic Law and Organization. Public international law affecting private economic activity, principally in the areas of trade, investment, and monetary affairs; the roles of the GATT, IMF, World Bank, UNCTAD, and the UN Center on Trans-National Corporations; and the U.S. law governing the negotiation and implementation of international agreements. Mr. Trimble

278. Comparative Law: Chinese Law. 20th-century transformations in Chinese law in the context of their jurisprudential and historical background. A general introduction to the nature and function of law in China; comparative legal analysis. Equips future practitioners to address legal problems arising from commercial interaction with China. Mr. Alford

279. Admiralty Law. A study of the special jurisdictional, procedural, and substantive rules applicable to water-based activities, especially the carriage of passengers and goods by water. The allocation of disputes involving such activities between state and federal courts, the rules of practice applicable to maritime liens, the special procedures for limiting shipowners' liability, and the sources and nature of laws governing maritime torts, contracts, and property. The applicability of traditional maritime doctrines to modern phenomena such as offshore drilling, containerization, and oil spills. Ms. Goldberg-Ambrose

280. Aviation Law. The regulation of aviation and air transport under both international and domestic law. The nature and sources of aviation law, the legal regime of the airspace and the aircraft, and the regulation of users of the airspace, including jurisdiction over hijackings and other offenses committed aboard aircraft. The role of the Civil Aeronautics Board in the regulation of domestic air transport. The regime of liability for international air carriers established by the Warsaw Convention and subsequent instruments, and the liability of aircraft manufacturers, maintenance, repair, and service facilities, and air traffic control and advisory services. Mr. Margo

M285. Governance: State, Regional, and Local (2 to 3 units). (Same as Architecture and Urban Planning M202B.) Legal problems involving local governmental entities; sources and extent of powers and duties with respect to personnel, finance, public works, community development, and related topics.

M286. Public Control of Land Development (2 to 4 units). (Same as Architecture and Urban Planning M202A.) Analysis of the legal and administrative aspects of the regulation of land use and development, and the problems and techniques of urban planning; dwelling legislation, building codes, zoning, subdivision controls, public acquisition of land, tax controls, and urban development. Mr. McGee

M287. Urban Housing and Community Development (2 to 3 units). (Same as Architecture and Urban Planning M231.) Comprehensive consideration of the rebuilding and construction of American cities, with major emphasis on the "housing process" — the way in which shelter and related facilities are created by the institutions which direct housing activities in urban areas. Students are encouraged to undertake research projects, with emphasis on field research, in lieu of a substantial portion of the final examination. Mr. McGee

M290. Environmental Law and Policy (2 to 3 units). (Same as Architecture and Urban Planning M264.) Examination, from perspectives meaningful to legal institutions, of the nature of environmental problems. The means by which law has responded, and can and should respond, to problems of environmental quality. Both common law and legislative and administrative measures considered. The air pollution problem is the primary vehicle for study.

292. Water Law. The basic components of United States water law; the riparian system of allocating water used in the Eastern United States, the appropriation system of allocating water used in the Western United States, and the federal overlay of reserved rights, navigation power, and reclamation. Water use efficiency and conservation, protection of instream water uses, groundwater management, public rights to water-based recreation, and water pollution.

295. Criminal Procedure. The process by which courts decide the guilt or innocence of those accused of crime and the selection of an appropriate penalty. The right to bail and other devices by which accused persons can be released following arrest and pending trial. The process by which the prosecutor decides what charges to file and the limits on charging power, including the grand jury and the preliminary hearing. Criminal pleading, including the process of plea bargaining. The trial process, including the right to trial by jury and sentencing procedures.

299. Federal Criminal Law Enforcement. Federal criminal topics such as RICO (including both its criminal and civil uses), mail fraud, the Bank Secrecy Act, the Hobbs Act, the Travel Act, criminal tax enforcement, and drug offenses. The special features of complex criminal statutes, how federal enforcement priorities are determined, the *Petite* policy, and the nature of the federal criminal role. Federal approaches to the prosecution of white collar crime, organized crime, and political corruption. In recent years there have been a large number of federal prosecutions of business persons. Increasingly, it is becoming useful for corporate counsel, whose practice is largely noncriminal, to be familiar with the federal criminal laws. Gives students a lawyer's understanding of the most important crimes in the federal arsenal, the ways in which the federal criminal law and its enforcement differ from its state counterparts, and how the federal and state criminal systems relate to each other. Mr. Abrams

300. Remedies. The kinds and nature of relief afforded by courts to litigants in civil litigation. The theory and general principles governing the award of compensatory damages, equitable remedies, and restitution. The substantive law of restitution and the history of equity jurisdiction. Mr. Bauman

302. Copyright. A basic introduction to the law of copyright. The large and recently revised federal statute that governs the field. Mr. Wiley

306. Patent Law. Designed for the future general or business lawyer who should to be able to recognize a patent problem or a related intellectual-property problem, and for the prospective patent lawyer. Patents related to trade secrets, copyrights, and trademarks. The classic policy tension between technological progress and free competition, or patents vs. antitrust law. Use of patents to illuminate several general law areas. The constitutional base of the patent system; how the mandate is effectuated or defeated in practice. Broadening of professional responsibility insight by an ethics paradox peculiar to patent law. Patent office negotiations explored as a special application of principles of persuasion.

313. Conflict of Laws. Problems resulting from multistate (both sister state and foreign nation) disputes. The choice of law problem, constitutional limitations on state choice of law, recognition of foreign judgments and jurisdiction. Analysis of the governmental interests implicated in the dispute. Mr. Bauman, Mr. Trimble

317. Family Law. The *de jure* and *de facto* husband-wife relationship. Legal principles and social policies governing the creation, maintenance, and dissolution of the conjugal relationship. Property and support issues, divorce-related child custody, and the legal status of extramarital children. Ms. Blumberg, Ms. Olsen

319. Law and the Political Process. Recommended prerequisite or corequisite: course 201. Ways in which the laws governing the political process affect and reflect political power relationships. Statutory reforms enacted in the past 10 to 15 years at the federal and state levels. Right to vote, reapportionment, political parties, bribery, campaign finance, incumbency, ballot propositions, lobbying, and conflict of interest. Mr. Lowenstein

325. Law and Psychiatry. The law affecting the many persons identified as seriously mentally ill has rapidly changed in the past 30 years, especially with respect to the standards for involuntary civil commitment: the rights of those committed, including the right to treatment and to decline treatment; guardianship; doctor-patient confidentiality; discrimination against the mentally handicapped; the 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 the impact of constitutional adjudication on the law of civil commitment; the different world views of psychiatrists and lawyers regarding dependence and paternalism, and liberty and constraint; whether the imposition of legal rules on medical practices has diminished human suffering. Mr. Goldstein

326. Health Law and Administration. The major programs in health care financing (Medicare, Medicaid, private insurance, medically indigent) and health care organization (private practice, HMOs, preferred providers, etc.). The effects of cost containment and the administration's pro-competitive strategy. Selected 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. Legal issues associated with the regulation of electronic mass media. First Amendment differences between print and broadcasting, broadcast licensing and the content-oriented regulations and policies of the Federal Communications Commission. Industry structures, networking, access to the media, public broadcasting, political broadcasting, fairness doctrine, and entertainment format changes. Regulation of cable TV and the merging of the media with new technologies, including telecommunications carriers, satellites, and fiber optics. Options for rewriting the Communications Act.

329. Women and the Law. A study of ways in which court decisions, statutes, and the operation of the 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, the Equal Rights Amendment, control of childbearing, employment discrimination, and either topics in criminal law (rape, prostitution) or topics in family law (the marriage obligation and grounds for divorce). Ms. Littleton

331. Immigration Law. An overview of the immigration and naturalization process from the 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. Mr. Bracamonte

332. Children and the Law. Judicial and legislative allocation of power and responsibility between parents and the state; the child's economic situation with the family; child custody; adoption; medical treatment of minors; parental right to discipline children; neglect and abuse; state-enforced limitations on the liberty of minors and juvenile delinquency. Ms. Blumberg

335. Religious Legal Systems. The literature and institutions of a religious legal system. Offered from time to time by different instructors in Canon law, Islamic law, and the Rabbinic legal tradition. Content varies depending on the particular tradition under study; emphasis on concerns common to a legal system based on divine authority. The extent of human authority to interpret and modify the received law to meet new circumstances, the relation between law and morality, and the interaction between religious and secular law. Mr. Rosett

336. English Legal History. The growth of the Common Law and Trial by Jury in the period from 1187 to 1765. Mr. McGovern

337. American Legal History, 1776-1984. The history of legal and constitutional thought, together with the history of law's part in social and political change and in everyday life. Consideration of a wide variety of texts and events, with emphasis on the "separation" of law and politics, law's relation to other normative orders in society, the ambiguities of legal "freedom" and "equality," problems of interpretation in law and history. Revolution and constitution-making, the creation of judicial review, courts and the rise of industrial capitalism, black slavery and freedom, achievements and limits of a century of liberal legal reform (comparing experiences of women's, labor, and civil rights movements), legal realism and the rise of the administrative state, history of lawyering. Mr. Forbath

400. Pretrial Lawyering Process (Clinical). Training and practical experience in the full range of skills used by lawyers during the pretrial phases of the civil litigation process. The development of interviewing, case planning, fact-gathering, counseling, pleading, formal discovery, negotiation, and lawyer decision-making skills. Fieldwork offers an opportunity to employ lawyering skills in a law office setting under the supervision of experienced legal services attorneys.
Ms. Menkel-Meadow, Mr. Moore, Mr. Patterson

401. Appellate Advocacy (Clinical). The concepts of logic and the principles of argument and persuasion in the context of appellate advocacy. Students gain practical experience by working in public prosecutorial and defense offices at the federal and state level under the direct supervision of experienced appellate practitioners. Mr. Patterson

402. Fact Investigation and Discovery in Complex Litigation (Clinical). The process of developing and proving facts, the relationship between the discovery of facts and proof at trial, and the range of formal and informal discovery devices available for use in complex litigation. Through fieldwork in public law offices and private law firms, students work on various aspects of discovery in major pieces of litigation under the supervision of an experienced litigator.
Mr. Binder, Ms. Gillig, Mr. Patterson

403. Interviewing, Counseling, and Negotiation (Clinical). Basic interviewing, counseling, and negotiation concepts in the areas of litigation and business planning. The extent to which these principles require modification in the area of business planning. Classroom discussion enhanced by analysis of videotapes of "client" interviews and conducting simulated interviews. Mr. Bergman

405. Trial Advocacy (Clinical). Designed to provide training in the full range of skills needed by a trial advocate. A year-long series of classes emphasizing the 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 the direct supervision of instructors.
Mr. Bergman, Mr. Moore, Mr. Patterson

405. Simulated Trial Advocacy (Clinical). Prerequisite or corequisite: course 211. Enrollment priority to third-year students. The first half of the year-long course 405. Theoretical and practical aspects of the trial process; training in the skills needed to represent clients in pretrial and trial litigation. The principal function of trials — the resolution of disputed questions of fact — and the trial lawyer's role in presenting persuasive evidence to the judges and jurors who perform that function. The 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 a combination of lecture, discussion, demonstration, and simulated role-play exercises. Presentation of a videotaped mock trial at the end of the semester (no fieldwork component).
Mr. Bergman, Mr. Moore, Mr. Patterson

407. Mediation and Alternative Dispute Resolution (Clinical). Issues, principles, and skills implicated in the use of nonadversarial methods of dispute resolution. The 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 the 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 the skills necessary to conduct mediation and arbitration sessions.
Ms. Menkel-Meadow

408. Legal Negotiation (Clinical). The theoretical and practical aspects of the process of negotiating transactions and disputes in our legal system. Negotiation theory, using both legal and behavioral science materials; differences between litigation and transactional negotiations; the context in which particular negotiation strategies and tactics are successfully employed; ethical and normative implications of negotiating; the 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). The theoretical and practical aspects of negotiating and mediating transactions and disputes in our legal system. Negotiation and mediation theory, using both legal and behavioral science materials; the differences between litigation and transactional matters; development of an understanding of the context in which particular negotiation and mediation strategies and tactics are successfully employed; the ethical and normative implications of negotiations and mediations; consideration generally and structurally of the role negotiation and mediation play 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. Menkel-Meadow

445. Planning and Drafting Small Estates (Clinical). The substantive law of estates, wills, trusts, and tax as those laws relate to testamentary disposition of small estates. Interviewing, drafting, and counseling techniques. In fieldwork, 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 in Constitutional Law. Selected topics in constitutional law.
Mr. Karst, Mr. Shiffrin, Mr. Varat

501. Seminar in Taxation: Timing Issues. Comparison of an income tax and a consumption tax, proceeding to various theoretical issues such as the pro per deduction for depreciation, the relationship between the treatment of the payor and the payee, and the role of loans and the interest deduction. Applications of the basic principles to the treatment of such issues as reserved rents, the sale of a life estate, and various rules added to the Code by the 1984 act (e.g., economic performance). Mr. Klein

502. Seminar in Copyright Law. Each student is assigned a specific topic relating to some aspect of copyright law, which is the subject of an in-depth study. The student first makes an oral presentation of the topic to the seminar and thereafter submits a fully researched paper dealing with the topic.

503. Seminar in Criminal Law (Death Penalty). Limited to 15 students. Is the death penalty morally impermissible? Is it immoral even if it has a deterrent effect? Or are there situations in which it is morally improper *not* to apply the death penalty (even if it has no extra deterrent effect)? Exploration of these questions, with emphasis on such topics as the allegedly arbitrary and discriminatory manner in which death sentences are carried out, the risk of executing the innocent, and whether retention or abolition of the death penalty better comports with respect for the sanctity of human life. Mr. Dolinko

503. Seminar in Criminal Law (Rape). The legal definition of rape, the procedural rules applied in the administration of rape statutes, and the sentences provided for rape offenses. In order to determine and critically evaluate the 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 in Theory of Property. A philosophical examination of the foundations of a theory of property. Topics include the concept of property, property rights in the body (including reference to abortion and suicide), and the relation of property to privacy and human nature. Readings from classical and contemporary writers, including Locke and Marx, and from instructor's work in progress. Mr. Munzer

506. Seminar in Comparative Company Law. Prerequisite: course 230. A comparative analysis of the company laws of the United States, the principal nations of the Common Market and, if feasible, several eastern nations. An evaluation of the divergent trends of developing company law in the nations of the world, with particular reference to the differences between United States law and the harmonization directives of the Common Market. Topics include capital structure and finance, disclosure, regulation of securities trading, dividends and distributions, and management and control structure.

507. Seminar in Labor Law. Prerequisite: course 260 or equivalent. Mr. Alleyne

512. Seminar on Selected Problems in Social Welfare and Health. Prerequisite: consent of instructor. Limited enrollment. A 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

516. Seminar in International Law: The Changing International Legal Order — A Chinese Perspective. Doctrines and practices of the People's Republic of China (PRC) regarding the role of law in various international contexts. Issues both of public international law and the law of international trade and investment. The nature and sources of international law; the role of the United Nations and other international organizations; national sovereignty; territoriality; the regulation of natural resources lying within and beyond territorial limits; international human rights standards; the new international economic order; the regulation of foreign trade and investment; the resolution of disputes. Topics considered in light of China's history and her present legal, political, and economic circumstances and as a means of tracing the changing nature of the international legal order. Comparisons to the doctrines and practices of Taiwan, Japan, the U.S., the U.S.S.R., and selected developing nations. Mr. Alford

M524. Seminar: Philosophy of Law. (Same as Philosophy M257.) Prerequisite: consent of instructor. Selected topics in the philosophy of law. May be repeated for credit with consent of instructor.

525. Seminar in Communications Law. Prerequisite: course 327. Students select specific topics in communications law, with emphasis on the effect of new technologies on the legal issues associated with a particular problem, and prepare one or more papers designed to address legislative or litigative solutions to the problem. Students' work may be used in ongoing litigation or in current legislative deliberations. Mr. Firestone

M526. Seminar: Urban Affairs. (Same as Architecture and Urban Planning M202C.) Exploration in a concrete case setting of the application of legal tools to the solution of planning and land-use problems. Real situations are selected in which significant planning problems exist that appear to be amenable to solution by careful analysis and application of legal tools. A number of case studies are selected so that students may choose one issue which directly interests them. For each case, a specific client works with the class in presenting the problem that client is facing and remains available through the course of the project for consultation; the end product for each case is the presentation of a formal report. Clients include the City Planning Commission, the Environmental Quality Board, the Housing Authority, and others. Mr. McGee

532. Seminar in Bankruptcy. In-depth examination of the business reorganization provisions of Chapter 11 of the United States Bankruptcy Code. Conducted in a practical format requiring students to become initimately familiar with the substance and procedure of Chapter 11 business reorganization law in a problem-solving format. Students are expected to research and brief complex issues of reorganization law and to advocate their positions during class.
Mr. Klee

536. Seminar in Appellate Advocacy. Appellate practice and skills necessary for effective appellate advocacy. Generalized principles of brief writing and oral argument. Cases from the current U.S. Supreme Court docket are selected by the class from a list supplied by the instructor. Students are then paired off, two to a case (one for petitioner, one for respondent). Students are required to write an appellate brief of approximately 30 to 50 pages in length and participate in an oral argument before a panel consisting of faculty members and other students in the seminar. Mr. Eule

555. Seminar in Legal Theory/Toward Feminist Jurisprudence. During the past five years, sex discrimination scholarship has moved beyond its initial focus on legal doctrine and constitutional arguments to develop a criticism of the legal system itself. The impact that feminist theory is having on legal philosophy. Reading of the major works in feminist legal theory and discussion on the practical effects these theoretical formulations have on a variety of legal issues of importance to men and women.
Ms. Olsen

560. Seminar in Law and Management (Agency Law). Prerequisite: course 230. Recommended: familiarity with economics or the law and economics literature. A brief review of agency law and various aspects of the agency relationship drawing on both legal and nonlegal material. Emphasis on a theoretical consideration of the major aspects of the agency relationship: creation of the relationship, vicarious liability, authority and fiduciary obligation.
Ms. Anderson

564. Seminar in Evidence. Prerequisite: course 211. Selected topics include the plain error doctrine, problems raised by the testimony of young children, the relationship between scientific conclusions of experts and character evidence, problems in relation to "other crimes" evidence, and expert testimony under the federal rules. Mr. Letwin

565. Seminar in Legal History: Group Litigation. The history of the class action suit. The nature of representation, the phenomenon of class conflicts, the tendency of group litigation to escape formal legal norms, the effect of group structure on litigative power. Mr. Yeazell

565. Seminar in Legal History: Black Slavery and Freedom, 1630-1968. The contested meanings and boundaries of "slavery" and "freedom" in the legal and political cultures of the North and South at critical moments in their histories. How race and class figured in the legal oppression of blacks, and how blacks and others have sought to use law to extend their freedom. Introduction to a variety of ways of doing legal history and of exploring the interplay of law, politics, and society. Topics include genesis of the slave codes, history of the law of slavery, abolitionist jurisprudence and legal activism, the Constitution as a terrain of sectional conflict, emancipation and Reconstruction: ex-masters and ex-slaves contest the boundaries of the new freedom, rise of Jim Crow, emergence of modern civil rights movement and the legacy of antislavery, the desegregation and voting rights struggles, the relations between legal and other forms of political action, and the achievements and limits of the "second reconstruction" of 1954 to 1968. Mr. Forbath

565. Seminar in American Legal History, 1776-1984. Recommended prerequisite: course 337. Designed for students interested in doing original historical research. Reading of a handful of historians whose work illuminates important interpretive or methodological problems. Progress reports and presentations. Mr. Forbath

566. Seminar in Administration of Criminal Justice. Recent American decisions in criminal procedure concerning the rights of persons suspected or accused of criminal offenses, contrasted with the administration of justice in civil law legal systems, particularly those of Mexico and Spain. Comparison of the reaction by the American judiciary to the crisis of violent crime with that of Spanish law enforcement officials confronted with implementing the nation's new constitution while simultaneously attempting to suppress politically motivated violence. The gap between theory and practice, particularly in Mexico and Latin America. Mr. McGee

567. Seminar in Antitrust Law.
Mr. Liebeler, Mr. Wiley

568. Seminar in Political Theory and the Law. The theory of public choice. Since World War II, much democratic theory had tended to center around two questions: (1) On what basis should it be decided whether a type of decision should be made collectively through the government or individually through the market? (2) In what sense are government institutions "representative"? While some earlier writers such as Edmund Burke and James Madison may be considered, focus on contemporary writers, including David Truman, Anthony Downs, Richard Musgrave, Buchanan and Tullock, Moncur Olson, and Brian Barry. Mr. Lowenstein

572. Seminar in American Legal Education. Prerequisite: consent of instructor. Law schools as institutions in the legal establishment. Historical development of legal education; teaching methods; law school politics; recruitment of students and faculty; research and publications; class stratification in legal education; testing and evaluation of students and faculty; advanced legal education; comparative legal education; and the curriculum.
Mr. Bergman, Mr. Graham

572. Seminar: Teaching Assistants. Limited to teaching assistants. Ways to make teaching assistants' work more effective and interesting. The teaching of legal writing; criteria for evaluating legal writing, ways of editing others' work. Consideration of what approaches to first-year student writing are likely to be most effective. The teaching assistants' role in other parts of the first-year curriculum (torts, civil procedure, property, etc.). Consideration of how teaching assistants might help first-year students with their work, develop exercises for small discussion sections, then conduct and evaluate those discussions.
Ms. Anderson, Mr. Yeazell

573. Seminar in International Regulation of Military Power. The role of international law in the regulation of the use of force and the containment of military solutions to world problems. The original United Nations' plan, its invocation in resisting aggression, and its role in various peacekeeping ventures. Multilateral and bilateral arms control negotiations (such as the Comprehensive Nuclear Test Ban negotiations and SALT), the role of law in restraining military buildups and in achieving other national security objectives. Mr. Trimble

574. Seminar in European Economic Community. The structures and institutions of the European communities, their lawmaking processes, and administration. The interaction and conflict between community law and national law and the growing role of the European court in mediating between the nations and the communities. The processes of the court and parallels between American constitutional development and that in Europe. Mr. Rosett

575. Seminar in Business Planning. Prerequisites or corequisites: courses 220, 221, 230. The tax and corporate law aspects of important problems in the life of an enterprise, such as formation of a corporation, compensation of employees, recapitalization, stock redemptions, acquisitions, and corporate divisions. Mr. Asimow

576. Seminar in Arms Control and Legal Process. The role of sanctions and dispute-settlement techniques in arms control agreements. The original plan of the United Nations against the role it has actually played in international peacekeeping. The recent arms control efforts such as the Nuclear Test-Ban Treaty, the Nonproliferation Treaty, and SALT, with a view to assessing the potential for enhancing compliance with these through international institutions. Comparison with the experience of the GATT and the IMF, as well as some of the more theoretical literature on the reasons why nations comply with international law. Mr. Trimble

577. Seminar in Law and the Political Process. The ways in which the laws governing the political process affect and reflect political power relationships. Statutory reforms enacted in the past 10 to 15 years at the federal and state levels. Right to vote, reapportionment, political parties, bribery, campaign finance, incumbency, ballot propositions, lobbying and conflict of interest. Mr. Lowenstein

579. Seminar in Immigration Law (Aliens' Rights). Prerequisite: course 331. Emphasis on three substantive areas of immigration-related law that are legally and politically salient: citizenship and naturalization, refugee and asylum law, and the employment rights of aliens. Introduction to the fundamental law in the topics covered, while simultaneously developing a critical perspective on extant law. The basic statutory framework and traditional judicial gloss placed on various legal requirements and procedures for the attainment of certain status or equality of treatment at the workplace. Development of an understanding of the theories of migration, drawing crucial distinctions between labor and political migration, foreign policy and the rule of law, and the function of citizenship within our legal and political structures. Demonstration that our history of race relations, foreign policy, and economic structures have a predominant effect on our legal structures and have played a fundamental role in the evolution of our law dealing with the rights of aliens. Mr. Bracamonte

Graduate School of Library and Information Science

Robert M. Hayes, Dean

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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.

Photo: The John Dryden collection at the William Andrews Clark Memorial Library.

Graduate School of Library and Information Science

120 Powell Library Building,
(213) 825-4351

Professors

Harold Borko, Ph.D.
Robert M. Hayes, Ph.D., *Chair and Dean*
Russell Shank, D.L.S.
Elaine Svenonius, Ph.D.
Page Ackerman, B.A., B.S.L.S., *Emeritus*
Robert L. Collison, B.A., F.L.A., *Emeritus*
Seymour Lubetzky, M.A., LL.D., *Emeritus*
Lawrence Clark Powell, Ph.D., Litt.D., L.H.D., H.H.D., *Emeritus*
Robert Vosper, M.A., LL.D., *Emeritus*
Raymund F. Wood, Ph.D., *Emeritus*

Associate Professors

Marcia J. Bates, Ph.D.
John V. Richardson, Ph.D.
Diana M. Thomas, Ph.D.

Assistant Professors

Dorothy J. Anderson, Ph.D.
Christine L. Borgman, Ph.D.
Donald O. Case, Ph.D.
William H. Fisher, Ph.D.
Stephen Stern, Ph.D.

Senior Lecturers

Elizabeth R. Eisenbach, M.L.S.
Elizabeth R. Baughman, M.L.S., M.A., *Emeritus*
Betty Rosenberg, M.A., *Emeritus*

Visiting Professors

Nicolas Barker, M.A.
Edward G. Holley, Ph.D.
Arnold Wajnberg, M.A.

Visiting Associate Professor

Jorge R. Schement, Ph.D.

Adjunct and Visiting Assistant Professors

Joseph J. Lauer, Ph.D., *Adjunct*
Cheryl Metoyer-Duran, Ph.D., *Visiting*

Adjunct and Visiting Lecturers

John Bidwell, M.L.S., *Adjunct*
Ronda Breitbard, M.L.S., *Adjunct*
Alison Bunting, M.L.S., *Adjunct*
Richard Chabran, M.L.S., *Adjunct*
Patricia Chittenden, M.L.S., *Visiting*
Susan C. Curzon, Ph.D., *Visiting*
Barbara Duke, M.L.S., *Adjunct*
Esther S. Grassian, M.L.S., *Adjunct*
Mary Greco, Ph.D., *Adjunct*
Jon Greene, M.L.S., *Adjunct*
J. Denny Haythorn, J.D., M.L.S., *Visiting*
Dorothy Ingebretsen, M.L.S., *Adjunct*
Teresa L. Jacobsen, M.S.L.S., *Adjunct*
Joan Kaplowitz, M.L.S., *Adjunct*
Linda Katsouleas, M.L.S., *Visiting*
Julie Kwan, M.L.S., *Adjunct*
Kay MacDonald, M.L.S., *Adjunct*
Holly Millard, M.L.S., *Visiting*
Shirley Nordhaus, M.L.S., *Adjunct*
Constance W. Nyhan, M.L.S., *Adjunct*
Christine Olsen, M.L.S., *Visiting*
Teresa Portilla, M.L.S., *Adjunct*
Mary I. Purucker, M.L.S., *Visiting*
Myra Saunders, M.L.S., *Adjunct*
Oscar Sims, M.L.S., *Adjunct*
Frank H. Spearman III, M.B.A., *Visiting*
Thomas Dan Tonkery, M.S., *Visiting*
Joyce S. Toscan, M.L.S., *Adjunct*
Marie Waters, M.L.S., *Adjunct*
Karin Wittenberg, M.L.S., *Adjunct*
Nancy J. Young, J.D., *Adjunct*
David Zeidberg, M.L.S., *Adjunct*
Diane Zwemer, M.L.S., *Adjunct*

Applicants may write to the Graduate School of Library and Information Science, 120 Powell Library Building, UCLA, Los Angeles, CA 90024, for the school's announcement and application materials.

Degrees Offered

Master of Library Science (M.L.S.)
Post-M.L.S. Certificate of Specialization
Ph.D. in Library and Information Science

Master of Library Science

Admission

Students are admitted in Fall Quarter only. In addition to Graduate Division requirements and application procedures (see Chapter 3), the school requires:

(1) A statement of purpose.

(2) The application for admission provided in the school's announcement.

(3) A report of an interview by the dean of the school or by a person designated by the dean as qualified to conduct the interview.

(4) An official report of a score on the Graduate Record Examination (GRE) taken within the past five years. Applicants must have passed the General Aptitude Test of the examination with a minimum combined score (verbal and quantitative) of 900.

(5) Three letters of recommendation.

(6) Satisfaction of the following entrance requirements: (a) a statistics requirement, satisfied by completing a college-level course with a minimum grade of C; (b) 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 PL/1, FORTRAN, COBOL, PASCAL, and BASIC or data base packages such as dBASE3, KNOWLEDGEMAN, and CONDOR are acceptable); (c) 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 the passing of 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.

The dean may permit postponement of one or more of these requirements for full-time students, but completion of these courses at a later time may represent a serious work overload for the new student. In any case, all requirements must be completed before beginning your fourth quarter in residence. Part-time students may not enroll in the program until they have completed the entrance requirements.

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.

For information on the proficiency in English requirements for international graduate students, refer to "Graduate Admission" in Chapter 3.

Course Requirements

You are normally required to enroll in three courses per quarter in order to complete the program in six quarters. Part-time enrollment may be permitted if you are working in a library or information center.

Eighteen courses (72 quarter units) are required for graduation from the M.L.S. program. 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 nine core courses: Library and Information Science 400, 402, 410, 411, 420, 421, 430, 441, and at least one graduate-level research methodology course such as 205, 240, 241, 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 librarianship, bibliography, or information science. 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 nine additional courses, which may include internships. Relevant coursework in other departments or schools is encouraged.

During the second year, you may apply for an internship of one to three quarters 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; rather, it 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, and complete all nine core courses.

The specialization component of the comprehensive examination requires the completion of a paper or project in the area of your specialization, which demonstrates a considerable amount of work and thought and is of publishable quality. The 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.

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 degrees — 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 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 all application materials from the M.B.A. Admissions Office, Graduate School of Management.

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 librarianship, information science, and bibliography, as well as research competence.

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 quarter of the academic year. If you are admitted for a preliminary quarter to complete prerequisite courses, that quarter will not be 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 made available.

Three general areas of specialization have been authorized: librarianship, bibliography, and information science. 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

In addition to Graduate Division requirements and application procedures, the school requires:

(1) A master's degree or the equivalent from an institution of recognized standing, representing academic preparation equivalent to that required for a comparable degree from the University of California.

(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 400, 402, 410, 411, 420, 421, 430, 441, and at least one graduate-level research methodology course such as 205, 240, 241, or 290.

(3) Satisfaction of the same entrance requirements as listed in item 6 under the M.L.S. degree.

(4) A statement of purpose which identifies your proposed area of specialization, accompanied by appropriate evidence of qualifications for pursuing a doctoral program.

(5) A total score of 1,200 or better on the Graduate Record Examination (GRE) Aptitude Test, with at least 500 in each of the two parts (verbal and quantitative). The examination must have been completed within five years prior to application for admission.

(6) Three letters of recommendation.

(7) Interviews with two faculty members of the school.

(8) The application for admission provided in the school's announcement.

While work experience in a library is not a requirement for admission, consideration is given to such experience in evaluation of candidates.

Major Fields or Subdisciplines

You are expected to specialize in a subfield in one of three major fields:

(1) Information storage, organization, and retrieval.

(2) Communication and information transfer.

(3) Libraries and other information organizations.

The school strictly limits the specific subfields which, at any time, are accepted for doctoral work.

Course Requirements

No courses are required for the Ph.D. other than those for admission. However, you normally take Library and Information Science 272 several times, as well as 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 the historical as well as technical aspects. These are scheduled during one week in a quarter. If you fail one of the sections of the three-part examination, it may be repeated. Should you fail two or three 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 proposal should, in most cases, be completed at the same time or soon after the completion of the written examinations, but it must be completed and accepted within two years after passing the written examinations.

The oral examination covers the methodology and feasibility of your research, as well as the depth of your knowledge in the specific field of your proposed dissertation research.

Your doctoral committee decides, after the oral examination, whether the proposal is accepted as written, is accepted with modification, or is not accepted. The committee also decides whether the oral examination has been passed. If the proposal is not accepted, the examination may not be passed.

Dissertation Research and Final Oral Examination

The third formal requirement of the program is that you research, write, and defend a dissertation. The required final oral examination is administered by members of the doctoral committee, who also evaluate the dissertation.

Upper Division Courses

Upper division courses may not be applied toward the M.L.S. degree.

110. Information Resources and Libraries. Prerequisite: sophomore standing or consent of instructor. Not open for credit to M.L.S. students. An 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.** Afro-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 the basis of its history, economics, technical characteristics, relation to other media, and potential for social change.

140. Computer Programming for Library Operations and Services. Lecture, one hour; laboratory, three hours. Prior knowledge of computers, programming, or MARC is not required. Introduction to programming languages suitable for librarians, students of language and literature, and similar disciplines. Concepts of text manipulation, file handling, and storage management. Programs and examples emphasize processing of textual materials and bibliographic records (including Library of Congress MARC records). Practical experience with computers in processing such records.

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.

M202. Folklore Archiving. (Formerly numbered M202A-M202B.) (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.

205. Historiography of Librarianship, Bibliography, and Information Science. Prerequisite: consent of instructor. Identification of historical source material. Comprehensive and critical review of the historical and biographical literature. Identification of areas in need of research or reinterpretation.

206. Seminar on Library History. Prerequisite: consent of instructor. Special studies in biography and history of librarianship. Relationships to contemporaneous social, cultural, and intellectual history. Research papers on topics identified in course 205.

207. Seminar on International and Comparative Librarianship. Library development and service patterns in European and other countries; comparisons of these with librarianship in the United States. International library organizations and programs.

210. Seminar in 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 in Subject Control of Library Materials. Prerequisites: courses 410, 411, or equivalent. Study of selected problems in the design and use of verbal headings and classification systems. Manual and mechanized systems. May be repeated once.

213. Seminar on Indexing. Prerequisite: consent of instructor. Development of basic concepts as reflected in the history of scholarship. Current problems in the transition from individual to large-scale indexing projects. Contribution made by automation. Future of mechanized indexing. Trend toward international standardization. Acceleration systems in indexing.

214. Seminar on Abstracting and Abstracting Services. Prerequisite: consent of instructor. Historical background and current situation, particularly in science and technology. Possibilities and present limitations of automation. Role in coordination of information services. Problems of standardization to achieve international coordination. Influence of changing needs.

221. Bibliography of Science, Engineering, and Technology. Prerequisites: courses 420, 421. Scientific and technical literature, with emphasis on special types of publications, research material, reference and bibliographical aids to the physical sciences. Importance, purpose, and nature of technical literature searches. Flow of information among scientists.

222. Bibliography of the Health and Life Sciences. Prerequisites: courses 420, 421. Literature of the medical and life sciences: reference and bibliographical works; periodicals and other serials; abstracting and indexing services; audiovisuals; notable books in the history of the biomedical sciences; organization of the literature; patterns of publication; applications of technological developments in the control of the biomedical literature.

223. Literature of the Social Sciences. Prerequisites: courses 420, 421. Seminar on the literature of the social sciences, including a review of the 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. Prerequisites: courses 420, 421. Seminar on the literature of the humanities and fine arts, including a review of the 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 the experience and competency required for future bibliographic and research sophistication as the basis for enhanced research results.

228. Legal Bibliography. An introduction to the source materials of the law, with emphasis on primary authority, but covering as well secondary authority and the indexes and finding aids which the lawyer and professional law librarian use to gain access to legal information.

229A. Afro-American Bibliography. Prerequisite: consent of instructor. Resources for the study of Afro-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 the full range of available information resources, including library collections of books, serials, and computerized data bases.

230. History of Publishing and the Book Trade. 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 Publishing and the Distribution of Information. An in-depth examination of the publishing and distribution of information in contemporary society, most particularly as it relates to libraries. Historical, cultural, and economic factors. Creation of library materials (role of the author, editor, agent). Production and manufacturing. Marketing and promotion. Types of publishers. Structure and organization of publishing firms. Economics of the publication industry. Libraries, publishers, and information distribution — the current scene and future prospects.

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: a course in research methods. Recommended: a course in library automation. Information systems and services from the points of view of their cost and effectiveness in meeting desired objectives. Review of principles of costing. Study of the literature in which measures have been developed to evaluate the 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. Prerequisite: course 240. Survey of principal vocabularies, methods of file organization, and search strategies in the control of publications in mechanized form.

243. Human/Computer Communication. Survey of issues related to human/computer communication. The 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 a term paper on one of the topics covered in the 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 the social evolution of information-oriented societies. Historical factors and current trends explored through discussion of selected international and domestic issues. Implications for information policy.

249. Seminar on Special Topics in Information Science. Prerequisites: course 400 and one from 240, 242, 243, or 405, or consent of instructor. Content varies from quarter to quarter to allow emphasis on specialized topics in information science, such as vocabulary development, file organization, searching procedures, indexing and classification, bibliographic and linguistic text processing, and measures of relevance and system effectiveness. May be repeated for credit with consent of instructor.

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. Reading Interests of Children. Reading interests and correlative types of literature surveyed with reference to the growth and development of children. Emphasis on the role of the librarian in responding to the needs and abilities of children through individualized reading guidance.

260. Historical Bibliography. Early records and the manuscript period; history of the printed book and of periodical publications and newspapers, including materials, methods, and production. Parallel history of scholarship, the book trade, and book collecting in ancient, medieval, and modern Western civilization.

261. Analytical Bibliography. Recommended (but not prerequisite): course 260 or equivalent in background or experience. History and methods of analytical bibliography, with emphasis on recent scholarship. The book as a physical object and its relationship to the transmission of the text. Emphasis on handpress books. Theories of Bradshaw, Proctor, Greg, McKerrow, Pollard, Esdaile, Bowers, Stevenson, Hinman, McKenzie, and others.

262. Seminar on Historical Bibliography. Prerequisite: course 260 or consent of instructor. Special studies in the history of books and publishing. Topics vary from quarter to quarter 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 on Intellectual Freedom (2 or 4 units). Prerequisite: consent of instructor. Investigation of the idea of intellectual freedom: historical and constitutional bases; civil liberties and civil rights; censorship and other restraints on freedom of speech, the press, the arts, and access to ideas and information. S/U grading.

272. Research Seminar in 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.

280. Information Seeking Behavior. Study of the 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 (2 units). Prerequisites: courses 420 and 421, or consent of instructor. An introduction to the information needs of the business world. 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 an overview of records and information management to make students aware of the information processing problems of business and how a coordinated records and information management program can improve information access and utilization.

290. Research Methodology (2 or 4 units). 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. A teaching apprenticeship under the 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. The Information Professions. A historical and comparative overview of the information professions and the functions of libraries and information centers in society. The unity of librarianship and information science, highlighted through discussions of computer applications to information storage and retrieval systems, natural language text processing, and the automation of various library processes.

402. Fundamentals of Bibliography. The development and fundamentals of the several branches of bibliography: historical, physical (analytical or critical, descriptive), enumerative, or systematic; and the organization, control, and elements of bibliographical apparatus. New techniques and tools, theory, methods, and trends in bibliographical research in relationship to librarianship.

405. Automation of Library Processes. Overview of major components of library automation: on-line catalogs, serials, acquisitions, and circulation systems, integrated systems, data conversion, library networks, and developments in new technologies such as local-area networks and optical disks. Emphasis on practical skills and field experience in library automation; liberal use of guest speakers currently involved in automation projects.

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. (Formerly numbered 411A, 411B.) Lecture/discussion. Prerequisite: course 410. Overview of the major alphabetic-subject and systematic indexing languages and their use in manual and on-line environments, including theory and application of the Library of Congress subject headings and of the 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 nonbook materials (e.g., films, maps, pictorial works, sound recordings) as separate collections and integrated collections.

413. Introduction to Subject Access: Thesaurus Construction (2 units). (Formerly numbered 411C.) Overview of major thesauri in use in manual and on-line environments. Emphasis on their construction and evaluation and the 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.

420. Information Resources and Services I. History, methods, and materials of information services. Types of information services and sources in different types of libraries and information centers. Evaluation of sources and services; standards for reference service; economic aspects of service. Sources include dictionaries, encyclopedias, biographical works, fact books, and atlases.

421. Information Resources and Services II. Prerequisite: course 420. Analysis and evaluation of sources of bibliographic control of information. Systems of national and trade bibliography (U.S. and foreign) serials control, indexing and abstracting services. Introduction to on-line data base searching.

425. Computer-Based Information Resources. Prerequisites: courses 420, 421. Emphasis on the use of reference and resource data bases. File structure and hardware requirements. Analyses of the information needs of scientists and business/labor, coupled with investigations into specific data bases addressing those needs.

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 acquisitions departments of public, school, academic, and special libraries. Theory and practice of selecting and ordering books and other materials. Organization and administration of acquisitions departments.

431. Special Problems in the Selection of Materials and Evaluation of Collections. Prerequisite: course 430. Subject and area collecting; special collections and rare books; building new collections. Evaluating and weeding collections. Cooperative collecting — regional, national, and international. Storage centers; subject specialization. Special format materials: films, maps, sound recordings, etc. Copying methods; facsimile reprinting; changing character of research collections.

432. Media Librarianship. Prerequisite: consent of instructor. Films, filmstrips, recordings, tapes, and other nonbook materials in audiovisual collections or instructional media centers. Bibliographical apparatus. Evaluation and collection development. Organization and administration.

433. Serials (2 units). Prerequisites: courses 410, 420. Examination of this form of publication, including problems of recognition, acquisition, cataloging, analysis, and corporate entry. Language barriers, automation, and standardization.

441. Management Issues in Libraries and Other Information Agencies. Prerequisite: consent of instructor. Principles of management, emphasizing management techniques applicable to libraries of various types and to library systems. Special attention to the management of human as well as technical resources.

442. Library Personnel Administration. The basic principles of personnel management. Survey of current personnel practices in libraries; how the basic principles apply or need to be modified to fit the library setting.

444. Information Networks. Problems in the formulation, funding, and operation of information networks. A survey of some of the major networks, including institutional and computer systems.

446. Library Services and Literature for Youth. An overview of the literature and programs which are of interest to young adults (seventh grade and above). Discussion of special problems in working with young people and the psychology of the teenager.

447. Library Space Planning (2 units). Introduction to space planning and programming techniques and how they apply to libraries. Emphasis on use of existing space, but planning new buildings included. Reading blueprints, use of scales, contracts, use of consultants.

461. College, University, and Research Libraries. Organization, administration, collections, facilities, finances, and problems of college and university libraries and their relationships within the institutions of which they are a part. Functions of research libraries and work of their staffs in serving scholars.

463. Public Libraries. The government, organization, and administration of municipal, county, and regional public libraries; developments in the 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 to Children and Adults, Oral Interpretation of Literature. Practical storytelling to children and adults in various situations, with emphasis on the folktale, and oral interpretation with emphasis on modern imaginative literature. Readings and discussion of the function of folklore and fantasy in literature, society, child development, and library programming. Students are required to choose, learn, and tell stories in class and in a library or community setting and to read stories aloud.

467. Seminar on 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, the impact of new technologies, and the 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. Organization, administration, services, and problems of health and life sciences libraries; relationships with institutions of which they are a part and with the community. Several field trips.

472. Law Librarianship. An introduction to the profession of law librarianship; the organization of the professional associations and their activities; the character and distribution of law libraries throughout the United States; the distinctive characteristics of law library problems and their solutions.

473. Government Information. Introduction to the 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 (2 units). (Formerly numbered 487A.) Provides information for administration of conservation programs and decision making in the preservation of library materials. Topics include history of paper production and book structure in relation to the present endangerment of library materials; past and current practices in library storage, retrieval, and use; environmental controls, housekeeping; binding standards; collection processing and handling; rare book curatorship; microfilming; cooperative conservation programs; conservation ethics; disaster preparedness and recovery.

487A-487Z. Special Studies in Library and Information Science (2 to 4 units). 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.:

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 on 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. A historical perspective that compares and contrasts aspects of children's literature in Britain and the United States.

489. Library Service to Special Population Groups. Prerequisite: consent of instructor. Special problems encountered by school, public, academic, special, and research libraries in meeting the needs of minority groups in urban and rural settings. Library service to the aging, the physically handicapped, and the institutionalized population.

490. Professional Communication (2 units). Designed to increase librarians' sensitivity to language in different contexts. Exploration of the range of stylistic and syntactic options open to students for presenting proposals, reports, and research results and covering all aspects of professional communications: written, oral, and visual, including computer-generated. S/U grading.

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.

495. Training and Supervision of Teaching Assistants (2 units). Hours to be arranged (20 hours per quarter). Prerequisite: appointment as a teaching assistant or Extension Division instructor. Orientation, preparation, and supervision of graduate students who are involved in the teaching of 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 an 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. UCLA Internship. Prerequisite: consent of instructor. Supervised professional training in one or more departments or units of the UCLA Library System or other University information centers. Minimum of 120 hours per quarter, including weekly critiques of bibliographical, administrative, and service problems. May be repeated twice. S/U grading.

499. Off-Campus Internship. Prerequisite: consent of instructor. Supervised professional training in a library or information center approved by the faculty of the school. Minimum of 120 hours per quarter, including weekly critiques of bibliographical, administrative, and service problems. 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 the 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.

Graduate School of Management

J. Clayburn La Force, Dean

12

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 the UCLA Graduate School of Management (GSM), consistently ranked among the best in the nation, people prepare to become first-rate managers with 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 in the private, public, and not-for-profit sectors.

GSM's specific objectives, then, are to train professionals who have these qualities, to offer the business community a wide range of continuing education programs providing state-of-the-art information in a variety of fields, and to advance the art and science of management by engaging in, and educating scholars capable of conducting, basic research designed to study fundamental issues and implement a new knowledge.

Students come to GSM from a variety of professional and educational backgrounds; their career goals are as diverse as the business and nonprofit communities themselves. Whether they choose to pursue the professional M.B.A., the academic M.S., or a Ph.D. in Management, they will 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.

Graduate School of Management

3250 Graduate School of Management, (213) 825-7935

Professors

Robert B. Andrews, Ph.D. *(Production and Operations Management)*
John W. Buckley, Ph.D. *(Arthur Young Professor of Accounting)*
Elwood S. Buffa, Ph.D. *(Times Mirror Professor of Management Strategy and Policy)*
Fred E. Case, D.B.A. *(Urban Land Economics)*
Samuel A. Culbert, Ph.D. *(Behavioral and Organizational Science)*
Louis E. Davis, M.S. *(Behavioral and Organizational Science)*
David K. Eiteman, Ph.D. *(Finance)*
Donald Erlenkotter, Ph.D. *(Management Science; Production and Operations Management)*
Eric G. Flamholtz, Ph.D. *(Accounting-Information Systems; Human Resource Management and Industrial Relations)*
Walter A. Fogel, Ph.D. *(Human Resource Management and Industrial Relations)*
Arthur M. Geoffrion, Ph.D. *(Management Science)*
Glenn W. Graves, Ph.D. *(Management Science)*
Martin Greenberger, Ph.D. *(IBM Professor of Computers and Information Systems)*
Alfred E. Hofflander, Ph.D. *(Finance)*
John Hutchinson, Ph.D. *(Human Resource Management and Industrial Relations)*
Harold H. Kassarjian, Ph.D. *(Marketing)*
Larry J. Kimbell, Ph.D. *(Business Economics)*
Paul Kircher, Ph.D., C.P.A. *(Accounting-Information Systems)*
Archie Kleingartner, Ph.D. *(Human Resource Management and Industrial Relations)*
J. Clayburn La Force, Ph.D. *(Business Economics), Dean*
Bennet P. Lientz, Ph.D. *(Computers and Information Systems)*
Steven A. Lippman, Ph.D. *(Management Science)*
James B. MacQueen, Ph.D. *(Management Science)*
Robert Hal Mason, Ph.D. *(Organization and Strategic Studies)*
Fred Massarik, Ph.D. *(Behavioral and Organizational Science)*
David Mayers, Ph.D. *(Finance)*
John J. McDonough, D.B.A. *(Behavioral and Organizational Science; Accounting-Information Systems)*
Bill McKelvey, Ph.D. *(Organization and Strategic Studies)*
Bruce Miller, Ph.D. *(Accounting-Information Systems)*
Daniel J.B. Mitchell, Ph.D. *(Human Resource Management and Industrial Relations)*
Frank G. Mittelbach, M.A. *(Urban Land Economics)*
Rosser T. Nelson, Ph.D. *(Management Science; Production and Operations Management)*
Alfred Nicols, Ph.D. *(Business Economics)*
William G. Ouchi, D.Litt., Ph.D. *(Organization and Strategic Studies)*
Anthony P. Raia, Ph.D. *(Behavioral and Organizational Science; Organization and Strategic Studies)*
Richard W. Roll, Ph.D. *(Allstate Professor of Insurance and Finance)*
Rakesh K. Sarin, Ph.D. *(Production and Operations Management)*
John P. Shelton, Ph.D. *(Finance)*
R. Clay Sprowls, Ph.D. *(Computers and Information Systems)*
J. Fred Weston, Ph.D. *(Warren C. Cordner Professor of Money and Financial Markets; Business Economics; Finance)*
Harold M. Williams, J.D.
James Q. Wilson, Ph.D. *(James A. Collins Professor of Management; Organization and Strategic Studies)*

Emeritus Professors

Armen Alchian, Ph.D., *Recalled*
William F. Brown, Ph.D.
John C. Clendenin, Ph.D.
Ira N. Frisbee, M.B.A., C.P.A., LL.D.
Leo Grebler, Ph.D.
James R. Jackson, Ph.D.
Raymond J. Jessen, Ph.D.
Erwin M. Keithley, Ed.D.
Frederic Meyers, Ph.D.
Frank E. Norton, Ph.D.
George W. Robbins, M.B.A., *Emeritus Dean*
Harry Simons, M.A., C.P.A.
George A. Steiner, Ph.D., Litt.D., *Recalled (Emeritus Harry and Elsa Kunin Professor of Business and Society)*
Robert Tannenbaum, Ph.D., *Recalled*
Robert M. Williams, Ph.D.

Associate Professors

Theodore A. Andersen, Ph.D. *(Finance)*
Joseph D. Carrabino, Ph.D., P.E. *(Organization and Strategic Studies)*
Lee G. Cooper, Ph.D. *(Marketing)*
Thomas E. Copeland, Ph.D. *(Finance)*
Bradford Cornell, Ph.D. *(Finance)*
Robert Geske, Ph.D. *(Finance)*
Richard A. Goodman, D.B.A. *(Organization and Strategic Studies)*
Michael E. Granfield, Ph.D. *(Business Economics), Chair and Associate Dean*
Dominique M. Hanssens, Ph.D. *(Marketing)*
Sanford M. Jacoby, Ph.D. *(Human Resource Management and Industrial Relations)*
Ronald W. Masulis, Ph.D. *(Finance)*
Ephraim R. McLean, Ph.D. *(Computers and Information Systems)*
Alfred E. Osborne, Jr., Ph.D. *(Business Economics)*
Richard P. Rumelt, D.B.A. *(Organization and Strategic Studies)*
Hans Schöllhammer, D.B.A. *(Organization and Strategic Studies)*
Carol A. Scott, Ph.D. *(Marketing), Assistant Dean*
E. Burton Swanson, Ph.D. *(Computers and Information Systems), Assistant Dean*

Assistant Professors

Srinivasan Balakrishnan, Ph.D. *(Organization and Strategic Studies)*
Jay B. Barney, Ph.D. *(Organization and Strategic Studies)*
Sushil Bikhchandani, M.B.A., *Acting (Business Economics)*
David M. Boje, Ph.D. *(Behavioral and Organizational Science)*
Renae F. Broderick, Ph.D. *(Human Resource Management and Industrial Relations)*
Gregory S. Carpenter, Ph.D. *(Marketing)*
Robert J. Chambers, Ph.D. *(Production and Operations Management)*
Imran S. Currim, Ph.D. *(Marketing)*
Connie Gersick, Ph.D. *(Organization and Strategic Studies)*
Mark S. Grinblatt, Ph.D. *(Finance)*
David A. Hirshleifer, Ph.D. *(Finance)*
Patricia J. Hughes, Ph.D. *(Accounting-Information Systems)*
Barbara Kahn, Ph.D. *(Marketing)*
Mitchell P. Koza, Ph.D. *(Organization and Strategic Studies)*
Wayne R. Landsman, Ph.D. *(Accounting-Information Systems)*
Barbara S. Lawrence, Ph.D. *(Organization and Strategic Studies)*
John W. Mamer, Ph.D. *(Management Science)*
M. Lynne Markus, Ph.D. *(Computers and Information Systems)*
Ella Mae Matsumura, Ph.D. *(Accounting-Information Systems)*
Robert J. Meyer, Ph.D. *(Marketing)*
Kent Nakamoto, Ph.D. *(Marketing)*
I.P.L. Png, Ph.D. *(Business Economics)*
Eric B. Rasmusen, Ph.D. *(Business Economics)*
Yoon S. Suh, Ph.D., C.P.A. *(Accounting-Information Systems)*
Siu (Christopher) Tang, Ph.D. *(Management Science)*
Sheridan D. Titman, Ph.D. *(Finance)*
Brett M. Trueman, Ph.D. *(Accounting-Information Systems; Finance)*

Lecturer

Warren H. Schmidt, Ph.D., *Emeritus Senior*

Adjunct Professor

John B. Farrell, M.B.A., C.P.A.

Adjunct Associate Professors

Ichak Adizes, Ph.D.
Marvin M. May, Ph.D.

Adjunct Assistant Professors

Jason L. Frand, Ph.D.
Ernest J. Scalberg, Ph.D., *Assistant Dean*

Adjunct and Visiting Lecturers

Janis S. Forman, Ph.D., *Adjunct, Management Communications Program Director*
Gordon Klein, J.D., *Visiting*
Linda F. Newton, M.B.A., *Adjunct, Management Field Studies Program Director*
David Ravetch, M.A., *Visiting*
Edward V. Sedgwick, Ph.D., *Visiting*
Dennis Sinclair, Ph.D., *Visiting*
Victor C. Tabbush, Ph.D., *Adjunct, Associate Dean*

The UCLA Graduate School of Management 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. A Ph.D. in Management is also offered, as are a certificate Executive Program and research conferences and seminars for experienced managers. For information about these programs, call 825-7935.

The school does not offer an undergraduate major in management; however, several undergraduate courses in management are offered. Enrollment in Management 120, 122, 124, 130, 133, and 140 is open only to students in the Economics/Business 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-GSM 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. A part-time version of the program is available for a limited number of fully employed students, who must be able to attend classes scheduled between the hours of 4 and 10 p.m. at least two days a week.

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 elementary algebra and differential calculus before entering the M.B.A. program. You are required to take the Graduate Management Admission Test (GMAT). Any questions about the GMAT should be addressed to the Educational Testing Service, Box 966, Princeton, NJ 08541, (609) 883-8519 (the local phone number in Los Angeles is 254-5236).

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, which includes the application for admission to graduate standing. Admission is for the Fall Quarter only; completed applications, with full documentation, must be filed with GSM by March 14. Applicants for the arts management program must specify their wish to be considered for admission in that field.

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. 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 from July through mid-March on an appointment basis. Call 825-8874 to arrange attendance.

Applications and information about the M.B.A. program are available in the M.B.A. Program Office, 3371 Graduate School of Management, UCLA, Los Angeles, CA 90024.

Areas of Study

Accounting/information systems; behavioral and organizational science; business economics; computers and information systems; finance; human resource management and industrial relations; management science; marketing; organization and strategic studies; production and operations management; urban land economics. Interdisciplinary programs are offered in arts management, international and comparative management, and public/not-for-profit management. Programs in entrepreneurship and entertainment management are also available.

Course Requirements

The four required elements of the M.B.A. program are the nucleus, the management core, the area electives, and free electives, totaling at least 24 courses (96 units). The nucleus develops professional problem-solving and decision-making skills through experiences ranging from laboratory simulations to consulting projects in ongoing organizations. Management core subjects cover the fundamentals of disciplines which underlie the practice of management. The area of study (area electives) provides specialized knowledge and skills for a particular field of management work. Free electives permit students to pursue additional subjects of personal interest.

Nucleus: The nucleus is a series of three required courses that develops those interpersonal and decision-making skills essential to the practice of management. The first-year nucleus course (Management 440) utilizes experiential teaching methods to guide students in defining problem-solving skills from a personal perspective.

The second-year portion of the nucleus consists of a two-quarter management field study project in which teams of four or five students serve as management consultants to business firms or other organizations. Conclusions are summarized in a report which serves in lieu of a thesis or comprehensive final examination for the members of the team. The field study is judged by standards applicable to professional management consulting.

Management Core: The management core consists of 10 courses on subjects basic to the practice of management. It is divided into three parts: five courses in management, including Management 402, 403, plus three courses from 404, 405, 406, 407; three courses in functional fields selected from 408, 409, 410, 411; and two courses in management processes (Management 412, 420).

Area 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 area electives are required, and you are encouraged to emphasize two or more areas of study.

Free Electives: You must select at least three 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 may be applied toward the 96-unit requirement.

Extracurricular Activities

A variety of student organizations promote 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 GSM, and all students are encouraged to participate.

Concurrent Degree Programs

J.D./M.B.A.

The 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.S.-Computer Science/M.B.A.

The 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 all application materials from the M.B.A. Admissions Office, Graduate School of Management.

M.L.S./M.B.A.

A concurrent degree program jointly sponsored by the 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 all application materials from the M.B.A. Admissions Office, Graduate School of Management.

M.P.H./M.B.A.

The Graduate School of Management and the School of Public Health, Division of Health Services, offer a three-year concurrent degree program designed for students who desire a management career in health care and related fields and who wish in-depth professional preparation for such a career. The program reflects the combined interest of employers, faculty, and students who have recognized the increasing challenges facing managers in the health care industry and the need for individuals who are skilled in dealing with these challenges. Students should request all application materials from the M.B.A. Admissions Office, Graduate School of Management.

M.A.-Latin American Studies/ M.B.A.

The 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.-Architecture/Urban Planning/M.B.A.

The 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 should request all application materials from the M.B.A. Admissions Office, Graduate School of Management.

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 is limited to 50 participants with superior academic records and a minimum of eight years of combined work and managerial experience.

The intensive 22-month 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 GSM on alternating Fridays and Saturdays, with three- to five-day residential sessions held at conference sites at the beginning, middle, and end of the program. Further information and application materials may be obtained by writing to the Assistant Dean, Executive M.B.A. Program, 4383 Graduate School of Management, UCLA, Los Angeles, CA 90024.

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 Doctoral Office, 3379 Graduate School of Management, UCLA, Los Angeles, CA 90024.

Applications are accepted for Fall Quarter admission only; the deadline for submission of applications and complete documentation is January 31.

Program information and application materials may be obtained from the Doctoral Office.

All applicants to the M.S. or Ph.D. program are strongly urged to arrange an interview with at least one faculty member of their proposed area of concentration or major field area. The interview should take place before February 1.

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 Fields or Specializations

Business economics, management science.

Course Requirements

Business Economics: A maximum of 16 courses may be required. It is possible to waive the seven prerequisite courses on the basis of prior coursework. Nine graduate courses (the required and elective major field courses plus four units of Management 598) are required and cannot be waived.

(1) Prerequisites (seven courses): Management 200A, 200B, 213A, 400, 405, 406, 408.

(2) Specialization (eight courses; deviations may be approved by the chair of the business economics academic unit): Five required courses from Management 201A, 201B, 201C, 202B, 202C, 205A, plus three electives (illustrative courses and course sequences) selected from one of the following groups: *industrial organization* — Management 202A, 202D; M203A, M203B, M203C; 231A, 231B, 231C; Economics 204A-204B-204C; 271, 272; *techniques for analysis* — Economics 245A-245B-245C; 247, 248; Management 240A, 240B; *economic forecasting* — Management 201B, 201C, 201D; 205B, 205C; 230.

(3) Master's Thesis (one course): Four units of Management 598.

Management Science: 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, 152A-152B, and two quarters 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 M203A, 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 quarter. Plans for the thesis should be presented to the committee for approval at the beginning of the sixth quarter.

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/information systems; behavioral and organizational science; business economics; computers and information systems; finance; human resources management and industrial relations; international and comparative management; management science; marketing; organization and strategic studies; production and operations management; urban land economics.

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 the 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 taking the oral qualifying examination.

There is no formal major field course requirement. Students, in consultation with a major field adviser, design a course of study which prepares them to pass the major field examination.

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 the 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.

Final Oral Examination

The school requires that students take a final oral examination; this requirement may be waived only under exceptional circumstances.

Lower Division Courses

1A-1B. Elementary Accounting. Prerequisite: sophomore standing. Course 1A is prerequisite to 1B. An introduction to accounting theory and practice. The recording, analyzing, and summarizing procedures used in preparing balance sheets and income statements in the first quarter. Payroll and tax accounting, partnership and corporation accounts, manufacturing and cost accounting, and supplementary statements in the second quarter.

Upper Division Courses

108. Business Law. The essentials of contracts. An examination of the legal forms of business organizations, especially partnerships and corporations. Introduction to federal securities law and antitrust.

120. Intermediate Accounting. Prerequisites: courses 1A-1B or consent of instructor. The preparation of the principal accounting statements. Recording, valuation, and presentation of cash, temporary investments, receivables, inventories, investments, plant and equipment, intangibles, current obligations, long-term debt, paid-in capital, and retained earnings. Statement analysis. Statement of application of funds.

122. Cost Accounting. Prerequisites: course 1B, Economics 40, or equivalent. The 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.

124. Advanced Accounting. Prerequisite: course 122. Partnerships and joint ventures; installment sales and consignment sales; home office and branch relationships; corporate combinations; the preparation of consolidated statements; foreign branches and subsidiaries; receiverships; estates and trusts; governmental units; actuarial science.

130. Business Finance. Lecture, three hours; discussion, one hour. Prerequisites: course 120, Economics 40, or equivalent. A study of the forms and sources of financing business firms large and small, corporate and noncorporate. Emphasis on financial planning and developing judgment in formulating decisions on financial problems. Financial problems considered in their social, legal, and economic effects. Mr. Andersen

133. Investment Principles and Policies. Prerequisite: course 130. 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, 3E, Economics 40, or equivalent. Principles and decision analysis related to the effective utilization of the 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. The 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. An 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. A study of the basic concepts and theory of management. Emphasis on an operational analysis of the manager's role in all types of organizations. Management issues in the 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 quarter 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.

200A. Techniques of Business Economics Analysis: Marginalist Models. Seminar, three hours. Prerequisite: course 405 or consent of instructor. Contemporary business economic principles of resource allocation and the price system. Classical optimization and comparative static techniques, applied to the models of consumer choice and firm and general production-exchange equilibrium models.
Mr. Osborne

200B. Techniques of Business Economic Analysis: Econometrics. Prerequisite: consent of instructor. Standard topics in applied econometric modeling. The assumptions underlying the classical normal linear regression model, special problems in application, and interpretation of results. Practical applications extensively developed in student projects.
Mr. Kimbell

201A. Business Forecasting. Seminar, three hours. Prerequisites: courses 402, 406. The role of business forecasting in managerial planning. Principles and methods of forecasting. Evaluation of the reliability of existing forecasting techniques. Short- and long-term forecasting of industry, regional, and national business trends.

201B. Industry Forecasting. Prerequisite: course 201A. Evaluation of various methooologies found useful in preparing industry forecasts; differences between short- and long-range forecasting techniques, etc.

201C. Regional Economic Forecasting. Prerequisite: course 201A. Forecasting of economic activity in a region, emphasizing special problems such as population and industry migration; the effects of external forces on the regional economy.

201D. Economic Policy and Business Environment. Prerequisite: consent of instructor. Analysis of economic policies shaping the business policy: stabilizing policy instruments; structural policies for efficiency and progress; policy needs for the future. Policy formation and administration, as well as design.

202A. Economic Theories of Business Behavior: Marginal, Managerial, and Behavioral. Prerequisite: course 200A. The economic behavior of the firm and firm groups. Theories extending from those which retain marginal analysis to treat alternative corporate objectives to those viewing the firm as an adaptive mechanism with limited cognitive and information processing capabilities.

202B. Principles of Industrial Organization. Discussion, three hours. Prerequisite: course 405. Application of the principles of microeconomics to actual firm behavior to better understand various firms' strategies for success. Topics include horizontal and vertical integration, mergers, the role of advertising, and price discrimination.
Mr. Granfield, Mr. Weston

202C. Empirical Studies in Industrial Organization. Prerequisite: course 202B. Analyses of factors influencing the size of industries, their size distribution, and the 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

202D. The Organization of Industry and Business Policy. Prerequisite: consent of instructor. Analysis of economic aspects of long-range planning of firms with respect to horizontal expansion, vertical integration, and diversification, especially the review of statutory and legal decisions affecting internal and external expansion policies.

M203A. Economics of Decision. (Same as Economics M203A.) Prerequisites: rudiments of economic theory, calculus, probability, and statistics. Norms and facts of decision making in the household, business, and government. Consistent behavior in terms of personal utilities and probabilities. Multiattribute value theory. Departures from consistency: descriptive theories of behavior and resulting models.
Mr. Erlenkotter, Mr. Sarin

M203B. Economics of Information. (Same as Economics M203B.) Discussion, three hours. Prerequisites: rudiments of economic theory of the firm, calculus, probability, and statistics; course M203A or consent of instructor. Optimal decision and information rules. Risk aversion, stochastic dominance, and their impact on economic decisions in a stochastic environment. Mr. Lippman

M203C. Economics of Organization. (Same as Economics M203C.) Prerequisites: courses M203A, M203B. Rational models of teams. Relation to the theory of games.

205A. International Business Economics. Prerequisites: courses 405 and 406, or consent of instructor. The international business environment, international economic institutions, national and regional trade policies and developments, trends in foreign markets, international monetary problems studied for their influence on the organization and operation of the international corporation. Mr. Mason, Mr. Mitchell

205B. Comparative Market Structure and Competition. Prerequisite: course 205A or consent of instructor. A 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.

205D. The Management of Economic Development in Latin America. Discussion, three hours. Prerequisite: course 405 or Economics 1 or 2. An introduction to economic development in Latin America. The problem of population, human resources development, agriculture, and land reform. Various industrialization strategies, the role of foreign trade, foreign investment, and economic integration in the area's development. Role of inflation and financial intermediation in capital development.

207A. Resource Administration of Nonmarket Activities. Seminar, three hours. Prerequisite: course 405 or consent of instructor. Examination of the behavior of managers in the profit vs. not-for-profit sectors to determine the critical variables that explain the observed differences in behavior. Use of the methodology of microeconomics, particularly utility maximization. Mr. Granfield

207B. 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 impacts on public and private resource allocations. Examination of the proper roles of government and the private sector in the financing and provision of public goods and services.

208. 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. A comprehensive development of the theory and computational methods of linear programming, with applications to business and related disciplinary areas.
Mr. Graves

210B. Applied Stochastic Processes. Discussion, three hours. Prerequisite: Mathematics 150A 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 the 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: course 210A. 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 the keys to successful practical applications. Mr. Geoffrion

211A. Nonlinear Mathematical Programming. Prerequisites: course 210A, Mathematics 32A, or equivalent. Theory, methods, and application of the 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. Geoffrion, 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. Geoffrion, Mr. Graves

212A. Management Science Models I. Prerequisites: course 407, Mathematics 31B. A broad survey of deterministic models, how to solve them, and their application in the management sciences. Solution techniques include linear programming, network optimization, integer programming, nonlinear programming, and dynamic programming. Application areas include allocation, corporate planning, distribution, finance, operations management, production, and project management.
Mr. Erlenkotter, Mr. Geoffrion

212B. Management Science Models II. Prerequisites: course 212A, Mathematics 32A, or equivalent. A 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 the professional skills needed for successful practical applications.

213A. Intermediate Probability and Statistics. Prerequisite: course 402 or equivalent. An introduction to probability theory and hypothesis testing as applied to management. SAS programs used in this course and its sequels. Mr. Mamer

213B. Statistical Methods in Management. Prerequisite: course 213A or consent of instructor. An 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

213C. Introduction to Multivariate Analysis. Prerequisite: course 213B or consent of instructor. An introduction to the 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); a survey of multivariate statistical procedures (e.g., multiple discriminant analysis, multivariate analysis of variance, canonical correlation, and confirmatory factor models).
Mr. Cooper, Mr. Hanssens

214B. Behavioral Science Models. Prerequisite: consent of instructor. Formulation, analysis, and interpretation of mathematical models in the 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

215E. Statistical Design of Surveys. Prerequisite: course 213B or equivalent. Mathematical theory and practices of statistical survey design and analysis.

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.
Mr. Nelson

216B. Advanced Computer Simulation. Prerequisite: course 216A. Advanced use of computer simulation techniques. Major term projects undertaken, either singly or in groups, with the object of developing in students the ability to accomplish all phases of the design and execution of computer simulation.
Mr. Nelson

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.

218D. Current Problems in Management Science (1 to 4 units). Current research on a variety of topics in the general area of management science, presented by invited University and outside speakers. May be repeated for credit.

218X-218Y-218Z. Current Issues in Management Science (1 to 4 units each). Current issues and research on a variety of topics in the general area of management science. May be repeated for credit.

220A. Intermediate Financial Accounting I. Prerequisite: course 403 or consent of instructor. The first of a two-course sequence that deals with the concepts and principles of financial accounting, with emphasis on the pronouncements of the Financial Accounting Standards Board, the Securities and Exchange Commission, and other authorities.
Ms. Hughes, Mr. Miller

220B. Intermediate Financial Accounting II. Prerequisite: course 220A or consent of instructor. The second of a two-course sequence that deals with the concepts and principles of financial accounting, with emphasis on the pronouncements of the Financial Accounting Standards Board, the Securities and Exchange Commission, and other authorities.
Ms. Hughes, Mr. Miller

220C. Advanced Financial Accounting. Prerequisite: course 220B or consent of instructor. A continuation of course 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. Miller

221. Current Issues in Accounting Information Systems. Prerequisite: consent of instructor. A forum for the discussion of contemporary issues in accounting and information systems, in a colloquium format. Drawing on prominent speakers in the field, course requires students to formulate a position paper on each topic presented.
Mr. Buckley, Mr. McDonough

222. Cost Accounting. Prerequisite: course 403. The 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.
Ms. Matsumura, Mr. Miller

223. Verification of Financial Statements. Problems of examination, verification, and presentation of financial statements from the standpoint of the independent public accountant. Legal and professional responsibilities of public accountants; professional ethics. Operational and management auditing.
Mr. Miller

224A. Computer Systems. Discussion, three hours. Prerequisites: courses 225A and either 413A or 413B, or consent of instructor. The 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. Use of case materials and/or actual examples. Mr. Frand, Mr. Lientz

224B. Management of Computer-Based Information Systems. Discussion, three hours. Prerequisites: courses 224A and 224C, or consent of instructor. In-depth coverage of the problems in managing computer-based information systems. Focus on the definition, evaluation, installation, and continuing management of EDP systems. Issues of planning and control, as well as the organizational impact of computer systems. Mr. McLean

224C. Systems Analysis for Computer-Based Information Systems. Discussion, three hours. Prerequisite: course 225A or consent of instructor. The detailed design and specification of computer-based management information systems, including studies of existing systems, economic and organizational analyses of alternatives, and tools for determining user requirements. Use of case materials and/or actual examples. Mr. Sprowls

224D. Generalized Data Base Management Systems. Discussion, three hours. Prerequisite or corequisite: course 224C or consent of instructor. The 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. A field study project may be required.
Mr. Sprowls

224E. Computer Simulation for Management. Discussion, three hours. Prerequisite: course 413A or consent of instructor. Introduction to computer simulation and to general purpose simulation languages (e.g., GPSS, SIMSCRIPT, DYNAMO). Emphasis on the managerial use of simulation and the development of computer-based models for problem solving and policy analysis. Programming assignments.

224F. Telecommunications and Computer Networks. Prerequisite: course 224A or consent of instructor. Distributed processing. Networked minicomputer systems. Data communication technology. Data security in computer networks. Cost/benefit analysis for the design, configuration, and implementation of computer networks. Applications to computer utilities; command and control systems; and commercial, medical, and government networks. Mr. Lientz

224G. Special Topics in Computing. Prerequisite: consent of instructor. An examination in depth of issues or problems concerned with the theory and practice of computing and the management use of EDP systems. Course may have a single theme or may deal with a number of topics. May be repeated for credit.

225A. Introduction to Information Systems. Prerequisite: course 404 or consent of instructor. Basic concepts and uses of information systems in organizations. Fundamental design considerations. The role of data processing. Examples of information systems in profit and not-for-profit organizations.
Ms. Markus, Mr. Swanson

225B. Information Systems for Planning and Control. Prerequisite: course 403 or consent of instructor. Design of systems to produce information for planning and control. Survey of approaches and techniques employed at the strategic, managerial, and operational levels. Special consideration of accounting and budgeting methods. Impact of planning and control information on human behavior.
Mr. Greenberger, Mr. McDonough

225C. Measurement in Information Systems. Prerequisite: familiarity with basic statistics, probability theory, set theory, and accounting, or consent of instructor. A study of the role of measurement in accounting and information systems, from the standpoint of mathematical, economic, behavioral, and organizational consideration. Mr. Swanson

225D. Special Topics in Information Systems. Prerequisite: doctoral standing or consent of instructor. An examination in depth of problems or issues of current concern in information 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.

225X-225Y-225Z. Current Research in Information Systems (1 unit, 1 unit, 2 units). Discussion, two hours. Prerequisite: doctoral standing. A year-long sequence associated with the Computers and Information Systems Colloquium Series. Regularly scheduled presentations of current research and state-of-the-art developments in the information systems field. Study and discussion of the research presented. May be repeated for credit. S/U grading.
Mr. Swanson

226. International Accounting. Prerequisite: graduate standing. 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. Tax Accounting. Prerequisite: course 403. A study of the fundamentals of income taxation, with emphasis on problems in federal and state income, franchise, gift, and estate taxes; study of source material and research methods for ascertaining current rulings and trends in laws and regulations.

227B. Taxation and Business Policy. Tax systems, tax shifting, and burden theory. Impact of taxation law and theory on business decisions. Corporate tax planning. The businessman and tax reform.

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. Mr. Landsman

229A. Accounting Theory. Prerequisite: course 220B. A survey of accounting literature, with emphasis on the development of basic accounting concepts. Contemporary practice as it has evolved in accordance with basic theory and expanding demands for accounting information. Mr. Farrell

229B. Research Methodology in Accounting. Prerequisite: course 229A or consent of instructor. Design of empirical and theoretical research in accounting. Sources of research problems. Research conduct and methodology in accounting and other fields as they relate to accounting. Mr. Landsman

229C. Special Topics in Accounting. Prerequisite: doctoral standing or consent of instructor. An examination in depth of problems or issues of current concern in accounting. 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. Mr. Trueman

229X-229Y-229Z. Accounting and Information Systems Workshop (1 unit, 1 unit, 2 units). Discussion, two hours. Prerequisite: doctoral standing. Designed to develop an ability to critically evaluate research in fields relevant to the study of accounting. Papers are presented in a colloquium format by leading scholars in accounting. Active participation and intellectual interchange encouraged through discussion of the papers in sessions prior to the workshop, as well as during the colloquium. May be repeated for credit. S/U grading. Mr. Trueman

230. Theory of Finance. Prerequisite: course 408. Decision making under uncertainty, the theory of asset prices, and the efficiency of capital markets. Development of the most recent theoretical constructs and application to fundamental issues in corporate financial management (such as capital budgeting, capital structure, and dividend policy).
Mr. Copeland, Mr. Grinblatt, Mr. Titman

231A. Profit Sector Financial Policy. Prerequisite: course 230. Identifying and solving financial problems through the use of cases. The 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. Cases are used. Mr. Eiteman

231C. Working Capital Management. Lecture, three hours. Prerequisite: course 230. More detailed advanced coverage of the short-range problems of financial management. Coverage of current assets, current liabilities, and their interrelationships.
Ms. Luna

232A. Security Analysis. Prerequisite: course 230. Primarily a course in stock market investing, but approach applicable to all investment assets. Techniques of security analysis and security valuation based on financial statements of the organization.
Mr. Mayers, Mr. Roll

232B. Portfolio Management. Prerequisite: course 230. Focus on entire portfolios rather than individual assets. Review portfolio theory as applied to portfolio decision making and the evaluation of achieved portfolio performance. Case studies of portfolio construction. Mr. Grinblatt, Mr. Roll

232D. Option Markets. Prerequisite: course 230. The organization and role of organized put and call markets, arbitrage and hedging relationships, the valuation of options, the implementation of option trading strategies, the perspective of corporate securities as options, the 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 the price determination process in the 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. Masulis, Mr. Roll

233B. Financial Institutions. Prerequisites: courses 230, 233A. Study of the 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. Masulis, Mr. Roll

233C. Speculative Markets. Prerequisite: course 230. Study of the theory and evidence of capital market efficiency, including the stock market, the bond market, commodity future markets, the options market, money markets, and foreign exchange markets.
Mr. Copeland, Mr. Hirshleifer

234A. Multinational Business Finance. Lecture, three hours. Prerequisites: course 408 and either 205A or 230. Financial problems in the management of multinational businesses. The international venture and financial techniques for the daily operation of a multinational firm. Mr. Eiteman

234B. Advanced Studies in International Finance. Prerequisites: courses 230, 234A. Study of current and important issues of international financial management. Major focus on the interrelation of advanced theoretical concepts and their implications for the business firm in its international financial management decisions.

235A. Problems in Insurance Management. Discussion, three hours. Prerequisite: consent of instructor. Advanced consideration of the problems of insurance management. The actuarial, underwriting, investment, marketing, and regulatory problems related to insurance activities. Mr. Hofflander

235B. Risk and Risk Bearing. Lecture, three hours. Prerequisite: consent of instructor. Advanced consideration of the theory of risk and risk bearing. The analysis of alternative ways of meeting risk and uncertainty, the scope and limits of insurance, and the economics of insurance. 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 the theory of exchange developed as an introduction to theoretical literature on the pricing of capital assets. Primarily intended for Ph.D. students, but well-prepared master's students may find the 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 the course useful in their career preparation. Mr. Mayers

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 the course useful in their career preparation. Mr. Roll

239D. Ph.D. Seminar in 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 Workshop (1 unit, 1 unit, 2 units). Discussion, 90 minutes. Prerequisite: doctoral standing. Designed to develop an ability to critically evaluate finance research. Papers are presented in a colloquium format by leading scholars in finance. Active participation and intellectual interchange encouraged through discussion of the papers in sessions prior to the workshop, as well as during the colloquium. May be repeated for credit. S/U grading. Mr. Mayers

240A. Aggregate Planning and Work Force Scheduling. Prerequisite: course 410. Managerial methods for short-term capacity planning and scheduling in aggregate terms. Theoretical models and management practices in manufacturing and service operations. Model formulation that allocates use of regular and overtime labor, inventories where appropriate, backordering shortages, and outside capacity.
Mr. Sarin

240B. Scheduling and Control of Operations. Prerequisites: courses 407 and 410, or consent of instructor. Detailed short-term scheduling and control of productive (production or service) operations. Identification of objectives and performance criteria for evaluating scheduling and control procedures. Classification of production and service systems. Scheduling problems and solution approaches for different types of systems. Mr. Nelson

240C. Design of Operational Systems. Prerequisite: course 410. Issues in selection of the capabilities, characteristics, and configuration of service and manufacturing systems as part of overall strategy for attaining organizational goals; planning of capacity, location, processes/technologies, facilities, organizational structures, and jobs. Mr. Andrews

241. Technological Bases of Jobs and Organizations. Prerequisite: consent of instructor. Technological determinants of operating systems and jobs; productive system design models; behavioral models underlying operating system design, technology, and social system design; operating system variability, control, and measurement.

242A. 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

243A. 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.

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, and continuous time models.

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. Mr. Nelson

244. Operations Strategy and Policy. Discussion, three hours. Prerequisite: second-year graduate standing. 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, the 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

245A. Special Topics in Operations Management. Studies of advanced subjects of current interest in operational management. Emphasis on recent developments and the application of specialized knowledge to operational problems. Topics vary each quarter. May be repeated for credit with topic change.

245B-245C. Survey of Operations Management. Prerequisite: graduate standing. Survey of the research literature in operations management. Seminar reports dealing with special topics.

245X-245Y-245Z. Production and Operations Management Seminar (1 unit, 1 unit, 2 units). Discussion, 90 minutes to three hours. Prerequisite: doctoral standing. Required of all students in the production and operations management concentration during the first two years of their Ph.D. work. Student and faculty presentations of ongoing research. May be repeated for credit. Mr. Sarin

246A. Strategy/Policy Analysis and Formulation in the Public and Private Nonprofit Sectors. Prerequisite: completion of the management analysis requirement for the 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. Mr. Zumeta

246B. Budgeting and Resource Allocations in the 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. Strategy/Policy Implementation in the Public and Private Nonprofit Sectors. Prerequisites: courses 246A and 246B, or consent of instructor. Problems, tactics, techniques for implementing strategies/policies within the organizational context. Relation of public interest needs for accountability and responsibility to the organizational/managerial needs for security and advancement. Consideration of entrepreneurship, personnel management, consulting. Mr. Zumeta

247A. Interorganizational Strategies in the Public/Not-for-Profit Sector. Prerequisite: consent of instructor. Consideration of public/not-for-profit organizations as members of a network, from the point of view of strategies for managing the entire network, and managerial implications for an individual, focal organization. System structure, transactions, levels of collaboration, competition, and dependence. Mr. Boje

248. Special Topics in Public/Not-for-Profit. Prerequisite: consent of instructor. Studies of advanced subjects of current interest in public/not-for-profit management. Emphasis on recent developments and the application of specialized knowledge to public/not-for-profit problems. Topics vary each quarter. May be repeated for credit with topic change. Mr. Zumeta

250A. Labor Relations: Process and Law. (Formerly numbered 251.) Lecture, three hours. Prerequisite: graduate standing. Consideration, at an advanced level, of the collective bargaining process, the labor-management agreement, the administration of the contract, the law of labor-management relations, union structure and goals, and the influence of external labor markets on labor relations. Mr. Fogel, Mr. Jacoby, Mr. Mitchell

250B. Human Resource Management: Process and Law. (Formerly numbered 252.) Lecture, three hours. Prerequisite: course 250A. A systematic exposure to the theoretical and empirical literature concerning the administrative and legal aspects of human resource management. Topics include the processes of managing human resources and the impact of governmental policies on employer-employee relations. Ms. Broderick, Mr. Fogel, Mr. Jacoby

250C. Behavioral Foundations of Human Resources Management. (Formerly numbered 250B.) Lecture, three hours. Prerequisite: course 250B or consent of instructor. Topics include development and training; human resources 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. (Formerly numbered 250A.) Lecture, three hours. The management of people in organizations, intended for managers as well as personnel specialists. Organized at three related but distinct levels of analysis: (1) the day-to-day utilization of people as organizational resources to achieve optimal productivity, satisfaction, retention, and development; (2) the personnel management function or system that performs specialized human resources functions; and (3) the issues facing top management which involve the 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. (Formerly numbered 250C.) Lecture, three hours. 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. Conflict Resolution in Labor-Management Relations. (Formerly numbered 253B.) Lecture, three hours. 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

254. Analysis of Labor Markets. Prerequisite: consent of instructor. Problems of verifying hypotheses concerning labor market behavior and the application of data to managerial problems. Problems of operationally defining labor market concepts. Critical evaluation of available labor market data. Case studies applying these data to managerial problems. Mr. Jacoby, Mr. Mitchell

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. The institutions, philosophies, and ideologies of labor, management, and government, and the interaction of their power relationships; the substance and manner of determination of "web of rules" governing the rights and obligations of the parties; and the resolution of conflicts. Mr. Hutchinson

256. Seminar in 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. Ms. Broderick

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. An 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. Employment Planning and Evaluation. Lecture, three hours. Prerequisite: course 254. Development of programs and practices to meet the human resource needs of organizations, including staffing, training, management development, career progression, and evaluation. Mr. Fogel

259B. Equal Employment Opportunity Management. Lecture, three hours. Prerequisite: course 254. The development and administration of programs to provide equal employment opportunities in employing organizations. Current statutory and case law and administrative agency requirements. Ms. Broderick

260A. Advanced Marketing Management. Prerequisite: course 411 or consent of instructor. A decision-oriented course concerned with the solution of product, price, promotion, and distribution channel problems. Extensive use of case studies. Ms. Meyers-Levy, Mr. Nakamoto, Ms. Scott

260B. Marketing Strategy and Planning. Prerequisite: course 260A or consent of instructor. Development of a framework for strategic marketing planning. The analysis of a few, yet powerful, conceptual frameworks which have broad application. Within the framework of the strategic marketing plan, development of key elements in the annual marketing planning process. Ms. Kahn

261A. Management in the Distribution Channel. Prerequisite: course 260A or consent of instructor. An examination of decisions in the distribution channel. Issues of power in the distribution channel and the trade-offs between alternative channel systems.

261B. International Marketing Management. Prerequisite: course 260A or consent of instructor. Opportunities, distinctive characteristics, and emerging trends in foreign markets, including an exploration of alternative methods and strategies; 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. Prerequisite: course 260A or consent of instructor. Consideration of such concepts as product classification, demand, competition, and costs, as they apply to price making. The theory of price leadership, geographical pricing, price discrimination, price warfare, and leader pricing studied in relation to the price-making process. In addition, attention to the price policies of individual firms in which these concepts are applicable. Mr. Png

263A. Consumer Behavior. Prerequisite: course 411 or consent of instructor. A study of the nature and determinants of consumer behavior. Emphasis on the influence of sociopsychological factors such as personality, small groups, demographic variables, social class, and culture on the formation of consumers' attitudes, consumption, and purchasing behavior. Mr. Kassarjian, Ms. Meyers-Levy, Mr. Nakamoto

263B. Theory of Marketing Stimulation. Prerequisite: course 263A. Analysis of factors influencing consumer demand. Techniques for stimulating demand evaluated in relation to specific marketing objectives. Material from economics, psychology, sociology, anthropology, and marketing research.

264A. Marketing Research: Design and Evaluation. Prerequisite: course 411 or consent of instructor. Methods of measuring and predicting the forces affecting marketing, including quantitative aspects of demand, consumer reaction to product characteristics, effectiveness of advertising and other promotional devices, influence of rewards and organizational systems on sales efficiency, and effectiveness of competitors' strategies. Mr. Cooper, Mr. Currim, Mr. Meyer

264B. Mathematical Models in Marketing. Prerequisite: course 260A or equivalent or consent of instructor. A study of the utilization of models for the solution of marketing problems. Discussion on models concerned with such problems as brand switching, media selection, pricing, competitive strategy, scheduling, allocation problems, and waiting time.
Mr. Gupta, Mr. Hanssens, Mr. Meyer

264C. Seminar in Multidimensional Scaling. Prerequisite: consent of instructor. A seminar providing for the study of recent developments in metric and nonmetric multidimensional scaling. Mr. Cooper

265A. Marketing and the Law. Prerequisite: course 260A or consent of instructor. A detailed study of the legislative enactments (federal, state, or local) which influence the operation of institutions engaged in marketing activities, together with an analysis of the judicial decisions which have interpreted these laws.
Mr. Kassarjian

265B. Social Issues in Marketing. Prerequisite: course 260A 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. Prerequisite: course 260A. Development of a framework for identifying and appraising alternative growth strategies of the firm. Product addition, modification, and deletion decisions, and the processes by which these decisions can be made in an optimal manner.
Mr. Currim, Mr. Meyer

266B. Advertising Policy. Prerequisites: courses 260A and 263A, or consent of instructor. A study of the formulation of advertising policies, involving an analysis of cases dealing with the role of advertising in marketing, the definition of advertising objectives, strategy, appropriation policy, media selection, evaluating advertising results, and the organization of the advertising function. Mr. Nakamoto

266C. Sales Force Management. Prerequisite: course 411 or consent of instructor. Development of a logical framework for the solution of problems in sales force management. The role of selling in the marketing mix, the selling interaction, and key problems in planning, organizing, evaluating, and controlling the sales force.

267. Macromethodological Issues in Research on People. Prerequisite: consent of instructor. A systematic approach to the special issues concerning research on people; criteria for evaluating macromethodologies; development of scientific concepts, models, theories, and law; the problem of private report, and the question of data language.

268. Selected Topics in Marketing (1 to 6 units). Prerequisite: course 260A or consent of instructor. A study of selected areas of marketing knowledge and thought. Specific subjects vary each quarter depending on the particular interests of the instructor and students. Individual projects and reports. May be repeated for credit.

269A. Theory in Marketing. Prerequisite: consent of instructor. Serves as a mechanism to introduce students to the development of marketing thought. Issues pertaining to the general topic of theory development and testing. Prepares students for conducting theoretically grounded research in marketing.
Mr. Nakamoto

269B. Research in Marketing Management. Prerequisite: consent of instructor. Intended for Ph.D. students. Study of research issues associated with marketing management decisions. Recent research in the areas of strategic marketing, marketing 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 a 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. Currim, Mr. Hanssens, Ms. Kahn, Mr. Meyer

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. Kassarjian, Ms. Meyers-Levy, Mr. Nakamoto, 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. Workshop in Marketing (1 unit, 1 unit, 2 units). Prerequisite: doctoral standing. Required of all students during the 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.

270. Environment of the Art World. Prerequisite: consent of instructor. Consideration and analysis of the political, social, economic, and environmental forces in American society as they affect the existence and development of arts institutions in the U.S. Exploration of present policies and trends and potential future developments.

271. Law and the Arts. Prerequisite: consent of instructor. Exploration of the way in which law and the arts relate, the 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.

272. The Role of Management in Artistic Decision Making. Prerequisite: consent of instructor. A descriptive study of the criteria for decision making in artistic institutions, including the role of the institution in society, the economic environment of the arts, and the artistic value systems of arts organizations.

274. Current Issues in Arts Management. Prerequisite: consent of instructor. Examination of current issues in the management of artistic organizations. Relevant combinations of lectures, discussions, case studies, and team research projects.

275A. Urban Issues and Problems. Discussion, three hours. Prerequisite: course 175 or consent of instructor. Identification and analysis of emerging issues and problems in turbulent urban environments; land utilization and regulations, transportation, real estate and building industries, urban sprawl, taxation, city size and efficiency, environmental pollution, and related topics. Mr. Mittelbach

275B. Urban Land Markets. Discussion, three hours. Prerequisite: course 175 or 405 or consent of instructor. Development and use of economic and management principles and methods to analyze and project urban land uses and land values; study of demand for and supply of industrial, commercial, retail, and residential space in the context of urban growth, structure, and change. Mr. Mittelbach

275C. Alternative Urban Futures. Discussion, three hours. Prerequisites: completion of first-year M.B.A. requirements, consent of instructor. Intended primarily for students seeking a course which specifically relates real estate analysis to the array of management courses taught at GSM. Use of case studies to examine various managerial strategies for creating or acquiring and managing private real estate projects intended to respond to anticipated alternative urban futures. Use of business techniques and economic principles to define new areas of potential growth and to prepare financial, marketing, and management plans for realizing these potentials through private residential, commercial, or industrial development. Emphasis on forecasting, spread sheets, and financial analysis. Mr. Case, Mr. Mittelbach

276A. Theory of Urban Property Valuation. Discussion, three hours. Prerequisite: course 408 or equivalent. Use of a systems approach to prepare feasibility and valuation studies which systematically analyze the factors which create value in private or public property developments. Analysis of the particular social, economic, political, and physical forces which can influence property values. Students encouraged to use computer-based analysis.
Mr. Case, Mr. Mittelbach

276B. Comparative and International Urban Land Studies. Discussion, three hours. Analysis of private and public decisions shaping urban growth and change in developed and developing nations. Emphasis on economic, social, and institutional forces influencing urban structure, land-use patterns, and growth and distribution of jobs and people in the built environment. Mr. Case, Mr. Mittelbach

276C. Urban Dynamics: Degeneration and Regeneration. Discussion, three hours. Prerequisite: consent of instructor. Use of the local urban area as a laboratory to identify the forces which have caused changes — good and bad — in the area and to prepare market and financial feasibility studies of private development opportunities in such areas. Fieldwork is an integral part of the course, with students encouraged to organize into development teams.
Mr. Case, Mr. Mittelbach

277A. Housing Market Systems. Discussion, three hours. Prerequisite: consent of instructor. Concepts, models, and methods to study and forecast local, regional, and national housing markets; consumer and investor behavior; residential land development and building; primary and secondary residential mortgage markets; private and public forces influencing housing costs and prices. Mr. Case, Mr. Mittelbach

277B. Housing Policy. Discussion, three hours. Prerequisite: consent of instructor. Alternate housing strategies, policies, and programs; housing for low and moderate income groups; urban renewal; community services to improve housing environment; stimulating innovation and efficiency in production, distribution, and delivery of residential capital and housing services; the roles of private enterprise.
Mr. Case, Mr. Mittelbach

278A. Urban Real Estate Financing and Investing. Discussion, three hours. Prerequisite: consent of instructor. An 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 the development of investment strategies.
Mr. Case, Mr. Mittelbach

278B. Sources, Uses, and Flows of Real Estate Capital. Discussion, three hours. Analysis of money, capital, and mortgage markets to determine the potential availability and costs of mortgage money from alternative sources. Evaluation of various sources of funds to determine factors influencing the decisions to make mortgage loans. Examination of all types of lending instruments, particularly mortgage instruments, for their impacts on real estate investment decisions. Mr. Case, 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. Mr. Case

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 an individual or cooperative basis. All work is computer-based; however, students are provided an introduction to the 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 urbania and its problems; prospects and prescriptions for the 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 the 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. A broad introduction to objectivist and subjectivist philosophies of science, and the 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 a setting where students may explore their own professional values in the process of testing and learning the values and standards important in the 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 the 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 the preparation of research proposals.

280E. Tutorial in Human Systems Research. Prerequisite: course 280D or consent of instructor. Provides an opportunity for students to offer and receive constructive comment on the design, data analysis, and writing of their Ph.D. research papers.

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. Mr. Boje

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 the sociotechnical systems analytic approach and understanding the 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. Ms. Lasko

281C. Situational Factors in Management. Prerequisite: graduate standing. Application of a situational, contingency, or "it all depends" perspective to important managerial issues such as personality, motivation, leadership, conflict management, and design of jobs and organizations. Development of a diagnostic way of thinking that is fundamental to managerial effectiveness in diverse organizational situations.

282. Task Group Processes. Prerequisite: course 281A or 281B or consent of instructor. The structures, processes, and interrelations of work groups in sociotechnical systems. Emphasis on an understanding of how group activities interrelate with the physical technical environment. Imparts a practical knowledge of task group functioning through class exercises and field observations. Mr. Culbert

283A. Environmental Settings of Sociotechnical Systems. Prerequisite: course 281A or consent of instructor. The complexity and uncertainty of organizational environments. Analysis of environments along sociocultural, political, and economic dimensions, their interrelationships, and their relations to technology. Organizational responses to various environments. Mr. Davis

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 the microdesign of jobs to the 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 the 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. The relative effectiveness of various leadership styles, different motivation theories, and power tactics from a 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 application to the department. Development of cognitive and experiential understanding of the dynamics of sensitivity training groups and their facilitation. Relevant theory, research findings, and case studies; translation of these inputs into practice.

288A. Special Studies in Managing Organization Behavior. Prerequisite: M.B.A. standing or consent of instructor. An examination in depth of problems or issues of current concern in managing organizational behavior. Emphasis on recent theories, research findings, and professional applications of special interest to M.B.A. students and faculty. May be repeated for credit. Mr. Davis

288B. Selected Topics in Behavioral Science. Prerequisite: doctoral standing or consent of instructor. Philosophies and theories of human behavior fundamental to the 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 the analysis and design of organizations as sociotechnical systems engaged with various technologies and environments, emphasizing design approaches emanating primarily from Europe and the United States. 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.

288E. Selected Topics in Organization Theory. Prerequisite: doctoral standing or consent of instructor. In-depth treatment of organizations as units of analysis. Emphasis on recent theoretical and empirical development, methodological issues in organizational research, and concepts of organization structure, process, and effectiveness. 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 Workshop (1 unit, 1 unit, 2 units). Discussion, two hours. Prerequisite: doctoral standing. Designed to expose Ph.D. students to the research within the field while at the 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 the theory and practice of the 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 the theory and practice of the managerial function of planning and control. The implementation of objectives through policy formulation, decision making, and control. Individual projects and reports. Mr. Carrabino, Mr. Steiner

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 the systems changes recommended in the sociotechnical field study.

292C. Comprehensive Planning in the Public Sector. Prerequisite: consent of instructor. Evolving modes of planning under complexity, with particular emphasis on the 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.

292D. Management in the Public and Private Nonprofit Sectors. Prerequisite: graduate standing. Examination of the 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

293. Business and Society. Prerequisite: consent of instructor. A study of the business enterprise as a social institution, with emphasis on the changing purposes of social action. Adjustments of the firm to changes in the social environment. Ethical problems in management. Social responsibilities of the business manager.

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. An exploration in entrepreneurship particularly concerned with the 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 the identification and analysis of characteristic operating problems of small firms and the application of appropriate methods or techniques for their solution. 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 the context of a multinational corporation, with emphasis on problems of adaptation to different sociological, cultural, legal, political, and economic environmental characteristics on planning, the structuring of organizational relationships, coordination and control in multinational firms. 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 the design and the conduct of international/comparative management research. Mr. Mason

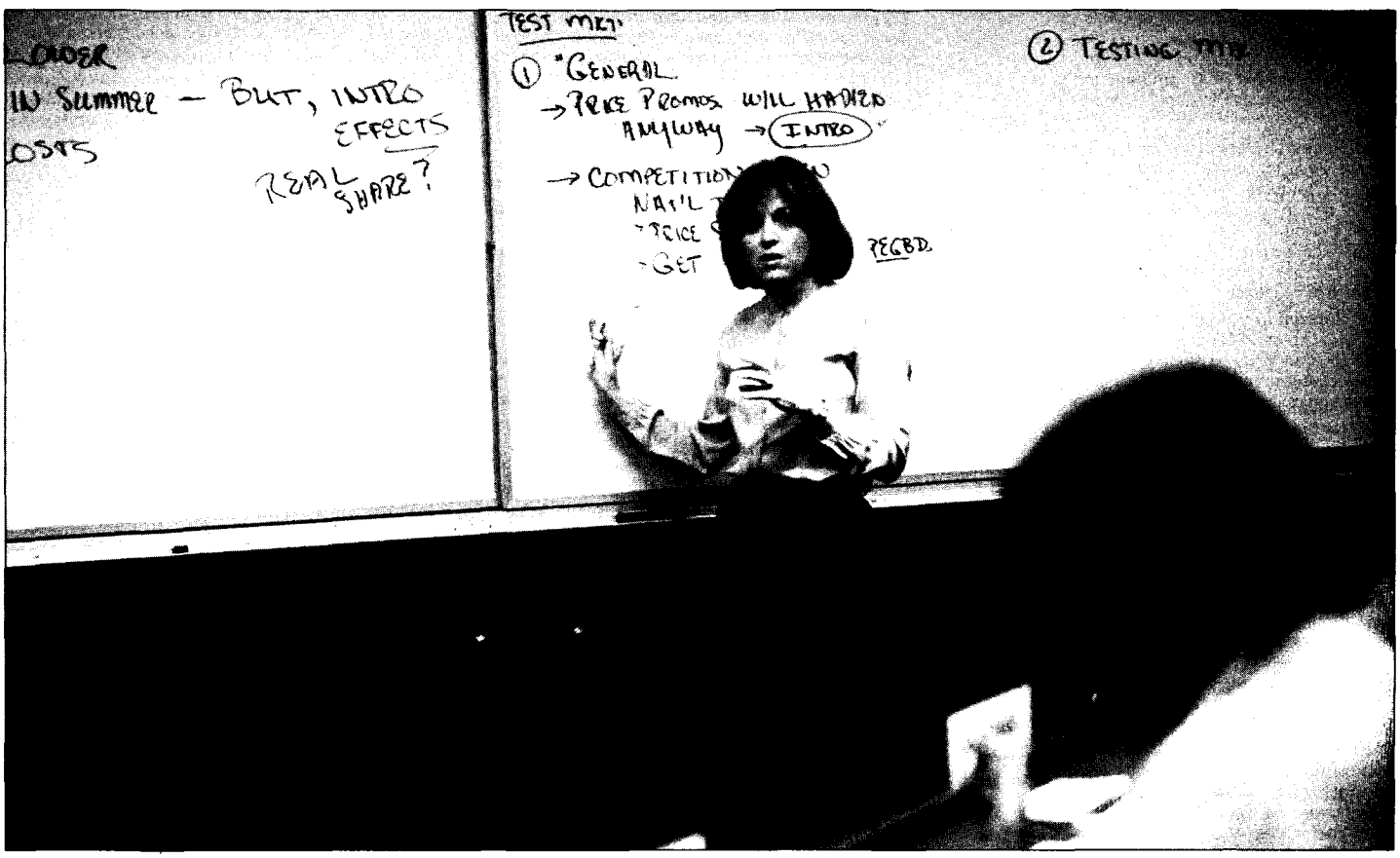
297A. Comparative and International Management. Prerequisite: course 412 or consent of instructor. A comparative study of the practice of management in selected foreign countries, as affected by their social environments and the development of management theory.

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.

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.

298A. Special Topics in Management Theory. Prerequisite: doctoral standing or consent of instructor. An 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. An 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. An 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). Prerequisite: doctoral standing or consent of instructor. An 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 Workshop (1 unit, 1 unit, 2 units). Discussion, three hours. Prerequisite: doctoral standing. Designed to develop an ability to critically evaluate research in fields relevant to the study of management strategy and policy. Papers are presented in a colloquium format by leading scholars in management strategy and policy. Active participation and intellectual interchange encouraged through discussion of the papers in sessions prior to the workshop, as well as during the colloquium. May be repeated for credit. S/U grading. Mr. Goodman

299M. Ph.D. Seminar in Research Methodology. Discussion, three hours. Prerequisite: doctoral standing. Methodological issues in management research. Emphasis on the identification of research opportunities and the 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 the research requirement. Quarterly meetings to discuss expectations of the research committee and the Doctoral Office. Students must enroll the quarter 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. A teaching apprenticeship under the 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 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 the measurement and determination of economic activity in the aggregate and to the role of prices in the 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. An introduction to statistics for graduate students who have had no previous course with emphasis on application to business problems.

403. Managerial Accounting. Prerequisite: graduate standing. An introduction to fundamental systems and procedures in financial and managerial accounting, with emphasis on income measurement, marginal analysis, standard and direct costing. Provides a firm understanding of how to read and interpret published financial statements.
Mr. Buckley, Mr. Kircher, Mr. Landsman

404. Managerial Computing. Prerequisite: graduate standing. An introduction to the use of computers for management applications. Computer hardware, software, and programming concepts. Programming problems, using both batch and interactive approaches. Mr. Frand, Mr. McLean

405. Managerial Economics: The Organization. Analysis of decision making in the firm, competitive policies and market structure, revenue and cost behavior. Mr. Granfield, Mr. Nicols, Mr. Osborne

406. Managerial Economics: Forecasting. Prerequisite: graduate standing. Sales, costs, and profit forecasting. General business forecasting and cyclical mechanisms. Mr. Kimbell, Mr. Norton

407. Managerial Model Building. Prerequisite: course 400 or 402 or equivalent. A survey of the 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 the organization's resources.
Mr. Copeland, Mr. Hofflander, Mr. Weston

409. Personnel Management and Labor Relations. Prerequisite: graduate standing. Human resources evaluation. Compensation practices. Collective bargaining impacts. Governmental policy impacts on public/private sectors regarding labor-management relations, affirmative action, occupational safety, pension reform. Concepts of labor markets and manpower planning. Innovations such as employee participation and flextime.

410. Production and Operations Management. Prerequisite: course 407 or equivalent. Principles and decision analysis related to the effective utilization of the factors of production in manufacturing and nonmanufacturing activities for both intermittent and continuous systems. Production organizations, analytical models and methods, facilities design, and the design of control systems for production operations.
Mr. Andrews, Mr. Buffa, Mr. Sarin

411. Elements of Marketing. Principles of market-driven managerial decision making: the definition of target markets, assessment of consumer needs, demand forecasting, market segmentation, and customer behavior. Management of the marketing function: product and pricing decisions, channels of distribution, sales force, and advertising.

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.
Mr. Barney, Mr. McKelvey, Mr. Spender

413A. Business Computer Programming. Prerequisite: course 404 or Computer Science 10C or equivalent experience. Programming business and management applications in a general purpose programming language. Choice of language used (e.g., PL/1, COBOL) may vary each quarter. Issues of program structure; input, output, and editing considerations; data and file structures; and characteristics of commercial data processing. Extensive programming assignments.
Mr. Lientz, Mr. McLean, Mr. Sprowls, Mr. Swanson

413B. Interactive Computer Programming. Prerequisite: course 404 or Computer Science 10C or equivalent experience. Use of interactive computer programming (e.g., in APL) to solve management problems. Emphasis on formulating algorithms for unstructured problems and ad hoc queries. Several computing environments (i.e., large central computers; minicomputers and microcomputers) featured. Extensive programming assignments.
Mr. Lientz, Mr. McLean, Mr. Sprowls, Mr. Swanson

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. Mr. Barney, Mr. Mason, Mr. Rumelt

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. Mr. Raia

435. Organizational Behavior and Management Processes. Prerequisite: graduate standing. A system approach to the theory and practice of management in complex organizations. An integrated view of human behavior and managerial processes in a dynamic organizational society.

440. Managerial Problem Solving: Individual. Prerequisite: graduate standing. Study and practice of individual decision making and problem solving, including the impacts of personality, motivation, interpersonal communication, and various decision-making techniques. The relationships among the individual, managerial roles, and complex organizations as they influence the managerial process.

441. Managerial Problem Solving: Complex Systems. Prerequisite: course 440. 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 quarters in the 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 interpersonal, 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 quarters of the M.B.A. program, consent of the supervising faculty and the director of the 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 the teaching of management. Seminars, workshops, and practice teaching. May not be applied toward the M.B.A., M.S., or Ph.D. degree requirements. S/U grading. Mr. Frand

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 GSM graduate adviser and assistant dean, and host campus instructor, department chair, and graduate dean. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. 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 the individual's diagnostic and decision-making skills. Use of readings, cases, decision simulations, and discussions to explore the areas of charting job and career progress, working with others, and shaping the work culture. Mr. Ouchi

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. Granfield

463. Data Analysis and Management Decisions under Uncertainty. Survey of statistical model building, with emphasis on the managerial interpretation of the statistical summary of data. Classical statistics covered through multiple regression to support the courses in finance and marketing that follow. The fundamental approaches to decision making under uncertainty. Mr. Hanssens

464. Managerial Accounting. Familiarizes the manager with the functions of accounting by focusing on the use of external financial reports for evaluating corporate performance and the use of accounting information for internal planning and control. Mr. Buckley

465. Quantitative Methods for Managers. A survey of modeling approaches to managerial planning and decisions. Emphasis on the 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. Geoffrion

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. Copeland, Mr. Cornell

467. Management Information Systems (2 units). Information systems for management decision making. Emphasis on support of strategic planning and management control functions; computer-based decision support systems; organizational arrangements for performance measurement and control; programming and budgeting systems. Mr. Greenberger

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 the impacts of monetary and fiscal policy; macroeconometric techniques applicable to business decisions. Mr. Kimbell

469. Management of Human Resources. An introduction to the major areas of human resource management — personnel management, labor economics, labor law, and labor relations — accomplished by examining some of the major concepts, theories, and research related to each of these topic areas, as well as some of the practical problems for managers posed by each. Mr. Flamholtz

470A. Introduction to Action Research and Policy Analysis (2 units). Provides methods of organizational and strategic analysis to determine the relationship of the organization with its environment. Techniques for action research such as experimental design, survey design, and research methods.

470B-470E. Action Research and Policy Analysis Project (2 units, 1 unit, 1 unit, 2 units). Four quarters of supervised study of an organization in relation to complex environmental changes. Competitive and environmental analysis of the organization. Development of an action research project and managerial policy scenarios; examination of their organizational implications; and recommendations for managerial and organizational response to deal with environmental changes. Mr. Goodman, Mr. Raia

472. Marketing Strategy and Policy. Strategic marketing decisions, including the development of marketing objectives and strategies and the implementation of these strategies through pricing, channel, promotion, and new product decisions. Ms. Scott

473. Managerial and Organizational Processes. Development of an understanding of the workings of large, complex organizations, with emphasis on the macroanalytic, rather than on the microanalytic, approach. Mr. Raia

474. Production and Operations: Systems, Strategies, and Policies. Analysis of strategic and operating policies and decisions for systems that produce goods and services in enterprises. Examination of the role of broad-level planning, inventories, scheduling of resources, organization of resources, distribution systems, system location. Comprehensive operating problems. Mr. Sarin

475. International Managerial Policies and Strategies. Study of economic and business decisions in an international context, with emphasis on the formulation and implementation of management strategies in multinational enterprises. Application of concepts of international economic analysis and exploration of international corporate strategies. Mr. Schöllhammer

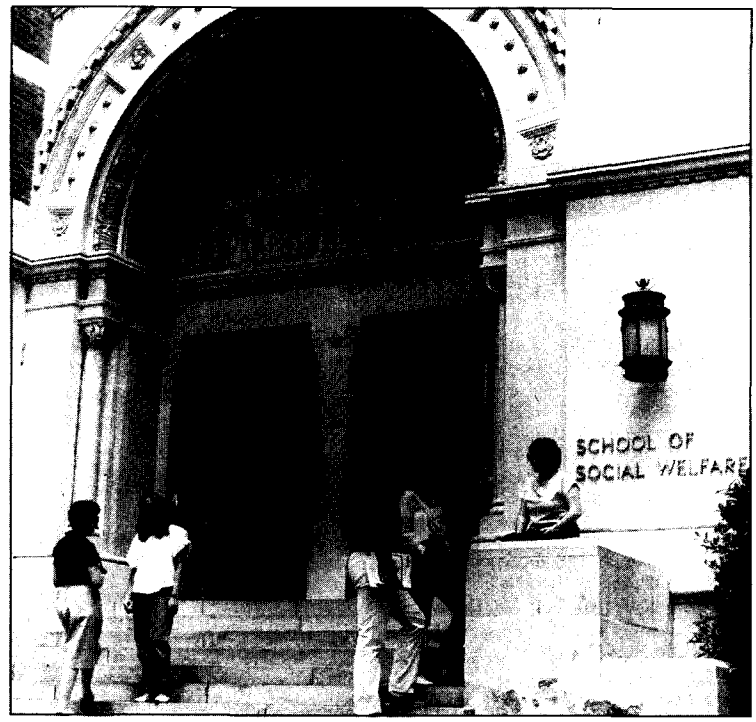
476. Competitive Strategy and Business Policy. The study of the general management task of forging a corporate competitive strategy. Emphasis on the economics of business rivalry within a variety of industrial settings and the implications of changing environments on business strategy. Mr. Rumelt

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, the basic economic structure, and social responsibility. Mr. Ouchi

478. Seminar on Management Strategy and Policy (2 units). Broad policy issues relevant to strategic planning and management. Group methods of problem solving, including a case study involving the top management team from a prominent corporation in an analysis of the corporation's competitive environment and strategic planning.

School of Social Welfare

Leonard Schneiderman, Dean



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The profession of social work is one of the principal helping professions. Social workers are employed as policymakers, administrators, community organizers, managers, and practitioners in all of the human services, including physical and mental health, education, income security, housing and the social services, family and child welfare, manpower development and training, corrections, etc. Social work services are offered under public auspices, at all levels of government, under private-for-profit and not-for-profit auspices, and in the workplace. In each setting social work concerns focus on the restoration of impaired social functioning of individuals, groups, communities; the provision of resources, social and individual, which will enhance social functioning; and the control of factors which threaten effective and satisfying social functioning. Social work is also concerned with the causes, treatment, and prevention of personal and social ills and with the broader social and economic issues in society.

In its professional education and practice, social work collaborates with disciplines in the field of health, including physical, mental, and public health programs; law, including the areas of corrections, civil rights, and social legislation; education, with reference to social work in the schools, special needs of handicapped children, and programs developed for children in deprived areas. There is also close collaboration with the applied social sciences in the study of social institutions and social change.

UCLA's School of Social Welfare is considered among the top schools of its kind in the country based on the quality of its programs, its research grants, and its publications. The school's primary objective is to prepare graduate students not only for successful careers but also for imaginative leadership in the social welfare field.

School of Social Welfare

200 Dodd Hall, (213) 825-2892

Professors

Rosina Becerra, Ph.D., *Associate Dean*
Jerome Cohen, Ph.D.
Jeanne M. Giovannoni, Ph.D.
Doris S. Jacobson, Ph.D.
Harry H. L. Kitano, Ph.D.
Manuel R. Miranda, Ph.D.
Jack Rothman, Ph.D.
Leonard Schneiderman, Ph.D., *Dean*
Nathan E. Cohen, Ph.D., *Emeritus*
Maurice F. Connery, D.S.W., *Emeritus*
Alfred H. Katz, D.S.W., *Emeritus*
Elliot T. Studt, D.S.W., *Emeritus*

Associate Professors

Diane de Anda, Ph.D.
Alex J. Norman, D.S.W.
Harry Wasserman, D.S.W.

Assistant Professors

James E. Lubben, D.S.W.
Judith Rosenthal, D.S.W.
Ruth Zambrana, Ph.D.

Adjunct and Visiting Lecturers

Lourdes Arguelles, Ph.D., *Visiting*
Margaret Bonnefil, M.S.W., *Visiting*
Mary Ann Fraser, M.S.W., M.B.A., *Visiting*
Wanda Houck, M.S.S.W., *Visiting*
Maxine B. Jackson, M.S.W., J.D., R.N., *Visiting*
Mary Ann Jimenez, Ph.D., *Visiting*
Rosalie Kane, D.S.W., *Visiting*
Barrie Levy, M.S.W., *Visiting*
Rose M. Monteiro, M.S.W., *Visiting*
Idele Natterson, Ph.D., *Visiting*
Susan Price, Ph.D., *Adjunct*
Wanda Refuerzo, M.S.W., *Visiting*
Philip Ringstrom, Ph.D., *Visiting*
Terrence J. Roberts, Ph.D., *Adjunct, Assistant Dean of Student Services*
Jean Sanville, Ph.D., *Visiting*
David Shapiro, Ph.D., *Visiting*
Bernice Sokol, M.S.W., *Adjunct*
Julie Steckel, M.S.W., *Visiting*
Gloria Waldinger, D.S.W., *Adjunct, Director of Postgraduate Education and Development*

Fieldwork Consultants

Katherine M. Kolodziejski, Ph.D., *Coordinator*
Jane E. Kurohara, M.S.W.
Joseph Nunn, M.S.W.
Winifred E. Smith, M.S.W., *Emeritus*

Degrees Offered

Master of Social Welfare (M.S.W.)
Doctor of Social Welfare (D.S.W.)

The UCLA School of Social Welfare offers an M.S.W. program in Social Welfare and a doctoral program of study leading to the D.S.W. The programs are designed to prepare candidates who wish to train for careers in teaching, research, administration, and 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 science or social welfare subjects as prerequisite undergraduate preparation for graduate study in the field of social work. Completion of courses in psychology and sociology is desirable, and a course in statistics 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 a 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 Aptitude 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 Aptitude score achieved will be 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 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.

Admission to the school requires simultaneous application to (1) the School of Social Welfare and (2) the Graduate Division. Both applications and the school brochure can be obtained by writing to the School of Social Welfare Admissions, 247 Dodd Hall, UCLA, Los Angeles, CA 90024, or by calling 825-7737.

Major Fields or Subdisciplines

Direct social work practice with individuals, families, and small groups, community organization, and social welfare administration are offered as social work methods. Concentrations 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, five courses in social welfare research, plus six quarters 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 the consent of the instructor and the 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 completion 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 the Spring Quarter of the second year of study. The examination may cover the entire range of the program.

Doctor of Social Welfare

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 occasionally be waived if an applicant possesses a postgraduate degree and professional experience in a related field. Such candidates, however, are 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 Aptitude 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.

Five letters of recommendation and a typewritten 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 the Graduate Division. Both applications and the school brochure are available by writing to the School of Social Welfare Doctoral Program, 200 Dodd Hall, UCLA, Los Angeles, CA 90024.

Major Fields or Subdisciplines

The core curriculum is the same for all students. Programs of specialized study relevant to the substantive area of the dissertation, which include courses in other schools and departments of the University as well as seminars and tutorials within the school, are developed in consultation with the adviser.

Course Requirements

Courses required for the degree normally cover a two-year span of study. All first-year course requirements must be completed before taking the qualifying examinations.

Required courses for the first year are Social Welfare 225A-225B, 245A-245B-245C, and 286A-286B-286C. In addition, a one-quarter course may be required in an area to be selected by the doctoral program committee, depending on the educational needs and interests of the first-year class.

Required courses for the second year are Social Welfare 210A-210B. A third course, which may be a seminar or individual or small group tutorial, is also required.

In addition to these requirements, you must take a minimum of three quarters in a graduate school or department outside the School of Social Welfare in an area related to your professional objectives, with consent of your adviser. In exceptional instances, you may obtain either a waiver of or substitution for a required course. Ordinarily, students in full-time study are expected to enroll in at least 12 units of study each quarter during the first two years and at least eight units per quarter thereafter.

A practicum may be required as a component of one or more courses, although it is not a general program requirement.

Qualifying Examinations

Before the formation of a doctoral committee, you must pass a written qualifying examination in each of the three core areas, as follows: (1) social welfare policy, history, and philosophy; (2) social work practice theory; and (3) research and scientific inquiry (philosophy and values, research methodology, research design, and behavioral concepts utilized in social welfare). The emphasis in these examinations is on your ability to integrate the knowledge gained from the several substantive areas for dealing with problems and issues of the field of social welfare at various levels — theoretical, operational, and evaluative.

The written qualifying examinations are graded on a pass/fail basis. If you fail one or two of the three examinations, you may be granted permission to retake those examinations. You ordinarily are required to take the examinations in June of your first year of study; any retaking of examinations ordinarily takes place in September.

The University Oral Qualifying Examination for advancement to candidacy covers the dissertation proposal and related areas and is administered by your doctoral committee, which consists of faculty from within and outside the school. The written qualifying examinations must be successfully completed prior to the oral examination.

Final Oral Examination

A final oral examination may be required at the option of the doctoral committee.

Graduate Courses

201A-201B-201C. Dynamics of Human Behavior I, II, III (2 units each). Biopsychosocial factors associated with individual and group behavior and development as applicable in the 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: Deviance IV, V (2 units each). Prerequisites: courses 201A-201B-201C. Deviations and pathologies or stresses in the physical, emotional, and social areas of human functioning as those problems relate to the role and function of the social worker.

203. Integrative Theory and Research in Human and Social Behavior (2 units). An integrative course which brings together the preceding courses in the human behavior and social environment series by examination at an advanced level of the major theoretical strands and the identification of problem areas requiring further research.

204A. Social Systems in Social Welfare (2 units). The application of social system theory to the problems of social welfare and social work. Analysis of the network of community relationships, values, stratification, institutions, and subcultures as related to the premises and services of social work.

204B. Small Groups in Social Welfare (2 units). Application of theory and knowledge of small group functioning to problems of working with groups in social work settings. Analysis of group formation, structure of interaction and communication patterns, and leadership and morale problems. Application to family, peer, and special-purpose groups.

205. Group Conflict and Change (2 units). Study of the 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.

210A-210B-210C. Social Ecology. Lecture, two hours. Prerequisites: doctoral standing and/or consent of instructor. Exploration of data, theories, and research from the biological and policy sciences regarding ecological relationships. Review of current sociocultural, demographic, and political changes as they affect human society, its institutions and, more particularly, social welfare needs and the study of them.

220. History and Philosophy of Social Welfare (2 units). The history of social work as a field: body of knowledge, method and process, and point of view analyzed within the context of the economic, political, social, philosophical, and scientific climate of the period.

221A. Social Welfare Policy and Services I (2 units). 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.

221B. Social Welfare Policy and Services II (2 units). Understanding of the 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.

222A-222B-222C. Social Welfare Administration I, II, III (2 units each). Prerequisites: graduate standing and/or consent of instructor. Study of methods by which welfare policies are formulated and translated into action; the nature of organizational and research processes involved in welfare administration; role of welfare agency personnel in policy formulation, implementation, and evaluation.

223. Seminar on the Social Work Profession (2 units). The 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.

224A-224B-224C. Advanced History and Philosophy of Social Welfare. Prerequisites: doctoral standing and/or consent of instructor. Analysis of long-term trends in welfare policies and programs in relation to political, economic, and other relevant factors. Philosophical foundations underlying social welfare theories, programs, and methods; values, assumptions, and attitudes historically affecting social welfare.

225A-225B-225C. Social Welfare Systems. Prerequisites: doctoral standing and/or consent of instructor. Analysis of theories of organizational behavior affecting social welfare systems (including supranational systems transcending national boundaries), their directions, goals, values, and relationships to social work. Application of organizational theory to planning, organizing, and administering welfare agencies.

227A-227B-227C. Comparative Social Welfare Theories and Programs. Prerequisites: doctoral standing and/or consent of instructor. Analysis of interrelationships between nations' welfare services and the social, economic, religious, and broader cultural milieus within which they develop. Special attention to social theories, value systems, and other elements of culture which particularly affect welfare programs.

230A-230B-230C. Theory of Direct Social Work Practice I, II, III (2 units each). Corequisite: required social work practicum. An introduction to the theory of social work with individuals and small groups and to the principles of practice which are derivative of this and related theory.

231A-231B-231C. Advanced Theory of Direct Social Work Practice IV, V, VI (2 units each). (Formerly numbered 231A-231B.) 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. Theory of Social Work Practice in Community Organization I, II, III (2 units each). Corequisite: required social work practicum. Historical and theoretical developments in community organization; understanding the community as a social system; role of the practitioner in identification, analysis, and evaluation of needs, existing programs, policies, structures, and strategies of intervention.

241A-241B-241C. Advanced Theory of Social Work Method (Community Organization) IV, V, VI (2 units each). (Formerly numbered 241A-241B.) 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 the context of community planning; emerging patterns of physical, economic, and social planning within the framework of social change theory.

M242. Counseling Families of Handicapped Children (2 units). (Same as Psychiatry M254.) Prerequisite: consent of instructor. 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. Gottlieb (W)

245A-245B-245C. Development of Social Work Practice Theory. Lecture, two hours. Prerequisites: doctoral standing and/or consent of instructor. Critical analysis of social work practice theories and selected social sciences theories in historical, social, and scientific contexts, with attention to how theory becomes modified over time.

258. Critical Problems in Social Welfare. Prerequisites: doctoral standing and/or consent of instructor. Current problems in the field of social welfare. Specific topics vary depending on the research and educational interests and needs of the class. May be repeated for credit.

M275. Family Process: Psychological and Social Perspectives on the Family. (Same as Psychology M275.) Various theoretical perspectives applicable to the analysis of family structure and dynamics. Critical issues in the application of family constructs to clinical problems. Mr. Cohen, Mr. Goldstein

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 the development of research knowledge and techniques for social work practice. In Progress grading.

285A-285B-285C. Research in Social Welfare. Prerequisites: doctoral standing and/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.

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. Seminar in Social Work (2 units each). A 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 to 4 units). (Same as Public Health M241.) Lecture, three hours; discussion, one hour. Prerequisites: two upper division social science courses, two upper division biological science courses, or equivalent, consent of instructor. The social and economic context of older women's aging, the major physical and psychological changes older women experience, the delivery of health services to this population, and the policies that respond to their health needs.

401A-401B-401C. Practicum in Social Work. 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 in Social Work (6 units each). 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.

Mr. Jeske

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. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. 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 D.S.W. Candidates (2 to 8 units). Prerequisites: doctoral standing and/or consent of instructor. S/U or letter grading.

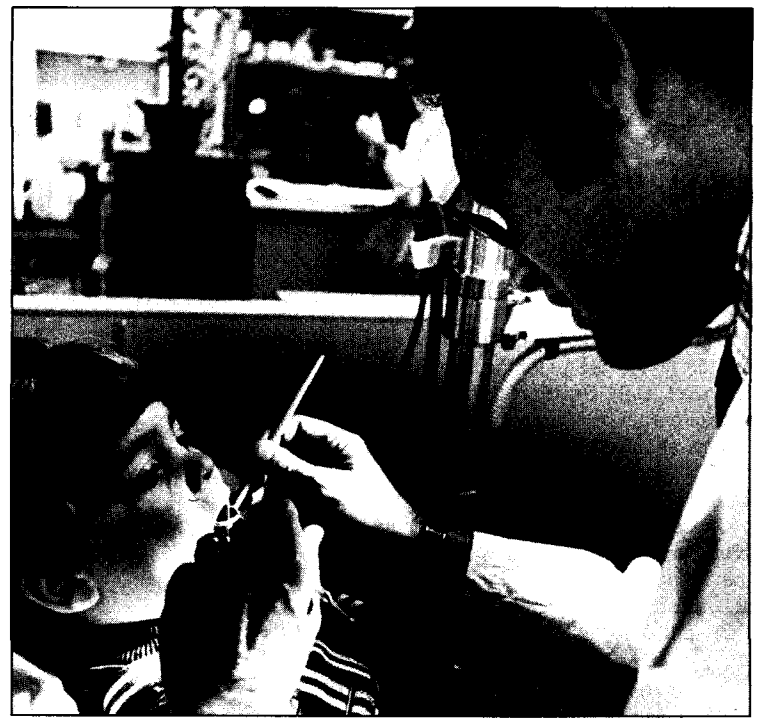
597A. Preparation for M.S.W. Comprehensive Examination (2 to 8 units). Prerequisite: consent of instructor.

597B. Preparation for D.S.W. Qualifying Examinations (2 to 8 units). Prerequisites: doctoral standing and/or consent of instructor.

599. D.S.W. Dissertation Research (2 to 8 units). Prerequisites: doctoral standing and/or consent of instructor.

School of Dentistry

James R. Hooley, Dean



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The UCLA School of Dentistry has developed a national and international reputation for its teaching and research activities. Challenging educational and training 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 dental care early 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 will do in a private or group practice.

Opportunity exists for dental students to undertake programs designed to meet their special needs; senior-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 Venice Dental Clinic and the Mobile Dental Clinic, the latter in conjunction with the University of Southern California. Postdoctoral study can be undertaken in one of several dental specialties, and an active continuing education program through University Extension provides a variety of short courses for members of the dental profession and their auxiliaries.

School of Dentistry

A3-042 Dentistry, (213) 825-6141

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 an Oral Biology M.S. degree program. Concurrent D.D.S. and M.S. or certificate programs are also available. This catalog provides detailed information only on the M.S. program 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 in Oral Biology

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 two required summer quarters between the sophomore/junior and junior/senior 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 science courses, didactic dental courses, and clinical experience. The first two years of the curriculum are chiefly devoted to didactic coursework in the basic health and dental sciences. 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. You are also referred to Chapter 5 for details on the three-year predental curriculum offered by the College of Letters and Science.

Postdoctoral Programs

The School of Dentistry offers the following opportunities for postdoctoral study: a one-year general practice residency 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, and prosthodontics.

Information on these postdoctoral programs can be obtained by writing directly to their respective directors, UCLA School of Dentistry, Los Angeles, CA 90024.

Oral Biology

63-050 Dentistry, (213) 825-1955

Professors
George W. Bernard, D.D.S., Ph.D.
John Beumer III, D.D.S., M.S. *(Restorative Dentistry)*
Angelo A. Caputo, M.S., Ph.D. *(Biomaterials Science)*
Fermin A. Carranza, Jr., D.D.S., Dr. Odont. *(Periodontics)*
Spiro J. Chaconas, D.D.S., M.S. *(Orthodontics)*
Glenn Clark, D.D.S., M.S. *(Gnathology)*
Andrew D. Dixon, D.D.S, M.D.S., Ph.D., D.Sc. *(Orthodontics)*
Colin K. Franker, Ph.D.
Jay A. Gershen, D.D.S., Ph.D. *(Pediatric Dentistry)*
Louis J. Goldberg, D.D.S., Ph.D., *Chair*
Douglas Junge, Ph.D.
E. Barrie Kenney, D.D.S., M.S. *(Periodontics)*
Frank J. Kratochvil, D.D.S. *(Removable Prosthodontics)*
Larry S. Luke, D.D.S., M.S., *Clinical (Pediatrics)*
Carol M. Newton, M.D., Ph.D. *(Biomathematics)*
No-Hee Park, D.M.D., Ph.D.
George R. Riviere, D.D.S., M.S., Ph.D. *(Pediatric Dentistry)*
Max H. Schoen, D.D.S., M.P.H., Ph.D. *(Public and Preventive Dentistry)*
G. Douglas Silva, F.D.S., M.R.C.S. *(Oral Medicine)*
William K. Solberg, D.D.S., M.S.D. *(Restorative Dentistry)*
Robert P. Thye, D.M.D., M.S., *Clinical (Restorative Dentistry)*
Stuart C. White, D.D.S., Ph.D. *(Oral Radiology)*
John A. Yagiela, D.D.S., Ph.D.
Fred Herzberg, D.D.S., M.S., *Emeritus*
Norman S. Simmons, D.M.D., Ph.D., *Emeritus*

Associate Professors
Russell Christensen, D.D.S., M.S. *(Oral Diagnosis)*
Joseph P. Cooney, D.D.S., M.S. *(Restorative Dentistry)*
Donald F. Duperon, D.D.S., M.Sc. *(Pediatric Dentistry)*
Patrick Turley, D.D.S., M.Ed. *(Orthodontics)*

Assistant Professor
Lawrence Wolinsky, D.D.S., Ph.D.

Adjunct Professor
Bernard G. Sarnat, M.D., D.D.S.

Adjunct Associate Professor
Michael G. Newman, D.D.S. *(Periodontics)*

Adjunct Assistant Professor
Mark L. Torbiner, D.M.D.

Scope and Objectives

The M.S. program in Oral Biology is intended to prepare students for teaching and research careers in dentistry while introducing them to modern approaches to research in the biology of the oral-facial area. The core curriculum is made up of basic science courses in embryology and histology, microbiology, immunology, physiology, neurophysiology, biology of bone, biochemistry of caries, pharmacology, and therapeutics, all directly related to oral-facial problems. In addition, students take concurrent courses in research methods and scientific writing, a course in biostatistics, and any of several electives in related areas.

All students carry out a thesis project, working in a laboratory in the School of Dentistry, Dental Research Institute, or other divisions of the Center for the Health Sciences. Each is exposed to modern research methodology and is supervised by a faculty member with research experience. Many students are in cooperative D.D.S./M.S. programs or resident programs in specialty areas, and many are dentists trained in other countries.

Master of Science Degree

Admission

Applicants are expected to have an acceptable bachelor's degree with a strong background in the biological and chemical sciences or a Doctor of Dental Surgery degree or the equivalent (i.e., D.M.D.) from an accredited university. The Graduate Record Examination (GRE) and the Dental Aptitude Test (DAT) are not required but may be submitted. Three letters of recommendation are required as part of the admissions packet. There is no separate application

form other than that required by the Graduate Division. 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, for more information.

Major Fields or Subdisciplines

Areas of specialization or subdisciplines which may be followed to complement or complete the degree requirements include anatomy, biological chemistry, cell biology and virology, immunology, microbiology, pharmacology, and physiology.

Course Requirements

The program requires a total of nine courses, five of which must be at the graduate level. Seven graduate core courses are required: Oral Biology 202, 204, M205, M206, 207, 208, M214. These should be taken during your first year of graduate study. Course 490, which focuses on the preparation of scientific writing and communication, and Biomathematics 170A are both required for completion of the degree.

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.

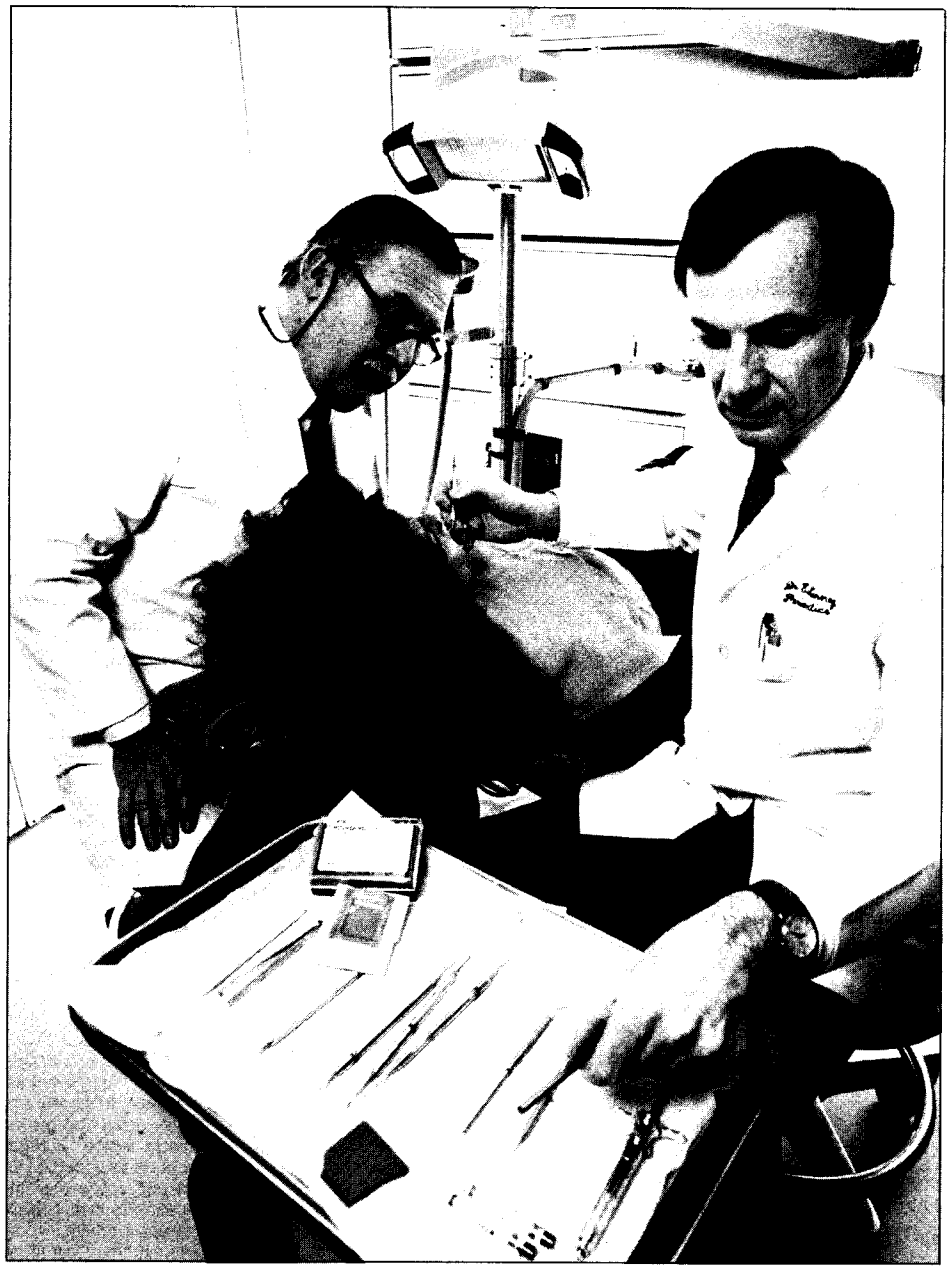
Thesis Plan

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 graduate adviser and by the faculty member who will direct the work of the thesis. After completing course requirements, you should prepare and send to your graduate committee a brief description of the proposed research project. The committee then discusses the proposal with you and makes suggestions.

The thesis should be prepared mainly in consultation with the sponsor, although other committee members are available for assistance. At least two weeks should be allowed between completion of the thesis and termination of the program, to allow committee members to read and comment on the manuscript.

Final Oral Examination

A final oral defense of your thesis is usually required.



Articulated Degree Program

The M.S. degree in Oral Biology has been structured so that students pursuing a dental degree or certificate in the UCLA School of Dentistry have an opportunity to participate in the program. These students must submit a separate application to the Graduate Admissions Office.

Graduate Courses

202. Principles and Methods of Research. Lecture, one hour; laboratory, three hours. Designed to familiarize students with the experimental method and its application to basic and applied research, including experimental method and design and interpretation of data. Research instrumentation and the advantages and limitations of various investigative tools.
Mr. Junge and the Staff (W)

M203. Oral Embryology. (Same as Anatomy M203.) Lectures and laboratory instruction in the development and histological structure of the facial region and the oral and peri-oral organs and tissues.
Mr. Bernard and the Staff (Sp)

204. Antibiotics and Antimicrobial Agents (2 units). A summary of current information on the chemistry, synthesis mode of action, and mechanism of resistance for generically grouped antimicrobial substances. Emphasis also on pharmacokinetic complications of antibiotic usage. Mr. Franker (F)

M205. Oral Physiology. (Same as Physiology M203.) Lecture, one hour; discussion, one hour. The organ-level and cellular physiology of the following systems, discussed in a somewhat flexible framework: (1) salivary glands, including the mechanisms of secretion, abnormalities such as Mikulicz-Sjorgren syndrome, and effects on the dentition; (2) dental pulp: development, normal physiology, and reparative mechanisms; (3) organization of sensory systems, receptors, pathways, and central projections; (4) dentinal pain mechanisms, hydrodynamic theory, and electrical recordings from dentin; (5) taste receptors: mechanisms of perception of four basic tastes, alterations of taste caused by drugs, diseases, and aging; (6) oral touch and temperature receptors: comparison with similar systems in the skin, assessment of sensory dysfunction; (7) speech: phonation, resonance, and articulation in speech production, normal time-course of development of various sounds in children. Classes supplemented with audiovisual materials and many references from the literature. Mr. Junge (F)

M206. Secretory and Gastrointestinal Immunity (2 units). (Same as Microbiology and Immunology M206.) Review of anatomy and physiology of the oral cavity, the intestines, and the related lymphatic and blood vascular systems in reference to the immune system. The secretory and systemic immune systems, with particular emphasis on the unique properties of SIgA. Discussion in terms of recent experimental findings of the ability to process enteric antigens, to respond, and to regulate enteric immunity. The role that enteric immunity may play in diseases of the GI tract, such as dental caries and inflammatory bowel diseases. Students participate in discussions following each lecture and present seminars based on a review of the relevant scientific literature.
Mr. Riviere (Sp, alternate years)

207. Brainstem Control of Rhythmical Movements (2 units). Discussion of the central nervous system mechanisms which coordinate and control the contraction patterns of the muscles which are involved in behaviors such as suckling, chewing, swallowing, speech, respiration, and locomotion. Emphasis on the interaction among brainstem reflexes, pattern generators, and "voluntary" control centers. Mr. Goldberg

208. The Biochemistry of Saliva and Dental Caries (2 units). A seminar on current research in the field of saliva biochemistry and its relationship to the development of dental caries. Each student is expected to present a current article for discussion.
Mr. Wolinsky (Sp)

M214. Biology of Bone (2 units). (Same as Anatomy M225.) Lecture, two hours; discussion, one hour. Prerequisite: consent of instructor. Embryology of bone tissue; bone as an organ; growth and development of specific bones; biochemistry and physiology of bone; remodeling of bone; crystallography of hydroxyapatite; pathological calcifications; pathology of bone; mechanisms and lineage of calcification; clinical correlations. Mr. Bernard (W)

M224A-M224B. Structure and Chemistry of Connective Tissue (2 units each). (Same as Anatomy M224A-M224B.) Prerequisites: histology, biochemistry. A seminar course designed for graduate students in dentistry, medicine, or basic science. Fundamental information on the fine structure and chemical composition of bone, dentin, cementum, cartilage, and cells of connective tissue in general, as well as enamel, with emphasis on the biosynthesis of collagen, noncollagenous proteins and glycoproteins, and glycosaminoglycans (mucopolysaccharides). The possible roles of the cellular and noncellular elements in the process of biological mineralization and correlation of biological processes to periodontal pathology. In Progress grading.
Mr. Weinstock and the Staff (F,W, alternate years)

225. Gross Postnatal Craniofacial Growth and Development (2 units). Designed primarily to develop a critical sense in the evaluation of the research literature and an appreciation of the dynamic complexity of postnatal craniofacial growth. At each session students present reviews and critiques of original articles, followed by group discussion. Specific aspects of the following general topics on growth of bone and bones considered in detail: historical review; modes of growth; general and craniofacial (mandible, midface, cranium) growth; methods of assessing; factors affecting; and conflicting hypotheses. Students are encouraged to pursue their particular interest.
Mr. Sarnat (Sp)

226A-226B. Craniofacial Growth and Development (2 units each). Prerequisite: strong background in histology and embryology. Students acquire, from scientific literature discussed in a lecture/seminar format, advanced knowledge of relevant aspects of human biology as they apply to classic and current concepts of the principles governing growth and development of the craniofacial region. Students are required to present seminars on assigned topics which aid their understanding and analysis of the course content that has application to their specific and professional fields. In Progress grading.
Mr. Dixon and the Staff (F,W)

227. Dental Embryology and Histology (1 unit). Description and interpretation of important stages in the development of the orofacial apparatus and histological features of its component tissues. Critique of scientific literature relevant to the course content and analysis of the current state of knowledge about selected features of the orofacial apparatus which are of significance to the clinical dental specialist.
Mr. Dixon (F)

228. Dental Pharmacology and Therapeutics (2 units). Lecture, three hours. A survey of pharmacology, with particular emphasis on how drugs interact with dentistry. General principles of drug action and drug effects on the autonomic and central nervous systems. Mr. Park, Mr. Yagiela (W)

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, Mr. Seeger (W)

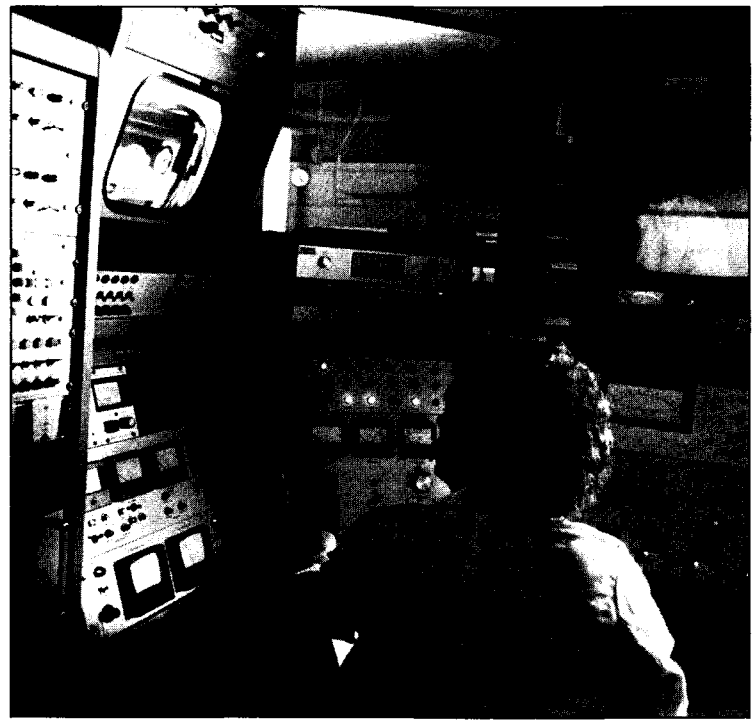
490. Professional Writing for Dentistry (2 units). Prerequisite: consent of instructor. Workshop in scholarly publication. Analysis of syntactic, rhetorical, and stylistic features of scientific prose to help students see the relationship of language to abstract thought and of writing to research. Coordinates with course 202. May be repeated once for credit. S/U grading. Ms. Gregory (W)

596. Directed Individual Study or Research (2 to 4 units). S/U grading.

598. Thesis Research and Preparation (2 to 4 units). S/U grading.

School of Medicine

Kenneth I. Shine, Dean



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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 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, 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 11 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 one of the nation's eight hospital-based biomedical cyclotrons producing shortlived radioisotopes for research and diagnostic nuclear medicine procedures.

Photo: Technician operates UCLA's biomedical cyclotron.

School of Medicine

12-109 Center for the Health Sciences, (213) 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, 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.

Graduate Degrees Offered

Anatomy	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 Biobehavioral Sciences	
Social Psychiatry	M.S.P.**
Clinical Psychology Internship	Certificate
Radiological Sciences (Biomedical Physics)	M.S., Ph.D.

*The department admits only applicants whose objective is the Ph.D.
**Not admitting new students at this time.

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 and laboratory sessions, 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 are urged to 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. 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 Graduate Division in the following fields: anatomy, nurse anesthesia, biological chemistry, biomathematics, biomedical physics (Department of Radiological Sciences), microbiology and immunology, neuroscience, experimental pathology, pharmacology, physiology, and psychiatry and biobehavioral sciences. 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 six to 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 associate dean for Education in Medical Science at 891-2335.

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 therapist, vocational nurse, medical technologist, nurse anesthetist, operating room nurse, physician's assistant, physical therapist, prosthetist-orthotist, radiologic electronics specialist, radiologic technologist, radiation therapy technologist, and ultrasound technologist.

Information relative to these programs may be obtained from the Office of Allied Health Programs in the UCLA Center for the Health Sciences (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

73-235 Center for the Health Sciences, (213) 825-9555

Professors

George W. Bernard, D.D.S., Ph.D.
P. Dean Bok, Ph.D. *(Dolly Green Professor of Ophthalmology)*
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.
Earl Eldred, M.D., *Vice Chair*
Jerome Engel, M.D., Ph.D.
Louis J. Goldberg, D.D.S., Ph.D.
Roger A. Gorski, Ph.D., *Chair*
Ronald M. Harper, Ph.D.
Lawrence Kruger, Ph.D.
Richard N. Lolley, Ph.D., *in Residence*
David S. Maxwell, Ph.D.
Arnold B. Scheibel, M.D.
John D. Schlag, M.D.
José P. Segundo, M.D.
G. Douglas Silva, F.D.S., M.R.C.S., L.R.C.P. *(Dentistry and Medicine)*
M.B. Sterman, Ph.D., *in Residence*
Anna N. Taylor, Ph.D., *in Residence*
Bernard Towers, M.B., Ch.B., M.R.C.S., L.R.C.P.
Jaime R. Villablanca, M.D., *in Residence*
Charles D. Woody, M.D., *in Residence*
Richard W. Young, Ph.D.
Mary A.B. Brazier, Ph.D., *Emeritus, in Residence*
John D. French, M.D., *Emeritus*
H.W. Magoun, Ph.D., *Emeritus*
Richard E. Ottoman, M.D., *Emeritus*
Daniel C. Pease, Ph.D., *Emeritus*
Charles H. Sawyer, Ph.D., *Emeritus*

Associate Professors

Anthony M. Adinolfi, Ph.D.
John H. Campbell, Ph.D.
Emilio E. Decima, M.D.
John K. Lu, Ph.D.
Guido A. Zampighi, D.D.S., Ph.D.
Emery G. Zimmermann, M.D., Ph.D.

Assistant Professors

Robin S. Fisher, Ph.D., *in Residence*
Carolyn R. Houser, Ph.D., *in Residence*
Paul E. Micevych, Ph.D.

Adjunct, Clinical, and Visiting Professors

Stanley J. Gross, M.D., *Adjunct*
Frances S. Grover, Ph.D., *Adjunct*
Raymond J. Last, M.D., F.R.C.S., *Visiting*
Alfred Weinstock, D.D.S., Ph.D., *Clinical*

Adjunct and Clinical Associate Professors

Earle E. Crandall, M.D., Ph.D., F.A.C.S., *Clinical*
Carlos A.E. Lemmi, Ph.D., *Adjunct*
James F. McGinnis, Ph.D., *Adjunct*
Anselmo R. Pineda, M.D., *Clinical*

Adjunct Assistant Professors

Margaret N. Shouse, Ph.D.
Gary C. Sieck, Ph.D.

Scope and Objectives

The Department of Anatomy offers advanced training leading to the Ph.D. degree. The great majority of students graduating with a doctoral degree in anatomy can look forward to an academic career in medical or dental schools 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 morphology or in some related area. An M.S. degree is also available to individuals whose major interests and training lie in allied fields. The department does not offer an undergraduate degree. An informational brochure may be obtained by writing to the Vice Chair, Department of Anatomy, 73-235 CHS, UCLA, Los Angeles, CA 90024.

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, elementary statistics, and the philosophy of science 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 Advanced Test in Biology or in your undergraduate major; (3) at least three letters of recommendation from professors stressing 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 an admissions committee of faculty and graduate students.

Major Fields or Subdisciplines

The major fields in which graduate research may be undertaken include (1) neuroanatomy and neurophysiology, (2) neuroendocrinology, and (3) cell biology, including immunology.

Master of Science Degree

The M.S. degree in Anatomy is available to applicants who have specialized objectives (e.g., students in bioengineering, medical illustration, physical therapy, and other paramedical specialties), as well as to international students who can plan only a limited stay in this country. Provision can also be made for medical and dental professionals at the postdoctoral level who wish to pursue a limited research project and will satisfy all requirements of the program.

Course Requirements

A total of 36 units of coursework is required, 20 of which must be in graduate-level courses. Eight units of Anatomy 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 101 (eight units), M206A (five units), M206B (seven units), and 207A-207B (12 units); one departmental seminar; other courses essential to the student's program; courses in the minor field (for those under the comprehensive plan).

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, usually at the start of your second academic year. 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 anatomy, as well as an understanding of some related field that is relevant to your objectives.

Ph.D. Degree

Course Requirements

(1) Basic knowledge of the fields of gross and microscopic anatomy and of the physiology and biochemistry of the mammalian organism. Normally this requirement is satisfied by successful completion of these major courses: (a) human gross anatomy, (b) human microscopic anatomy, (c) neurosciences, (d) mammalian physiology, and (e) biological chemistry.

(2) Participation in at least two departmental seminars.

(3) Completion of such other courses as are essential for your research interest.

(4) Completion of a "breadth requirement" which consists of the equivalent of eight units of work selected to augment the dissertation project. This may be satisfied by a foreign language examination.

Teaching Experience

Since the anatomy profession generally imposes relatively heavy teaching obligations, it is strongly recommended that students seek opportunities to gain teaching experience in the major anatomy courses, gross anatomy in particular.

Qualifying Examinations

The written comprehensive examination is intradepartmental and intended to evaluate your capacity to organize and integrate information gained in the major core courses. All students are required to take the examination at the end of the second 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 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 qualified and 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.

Final Oral Examination

After you complete the research and writing of the dissertation, you must defend it in a final oral examination before the doctoral committee in closed session. You are also expected to give a final public seminar on your findings.

Upper Division Courses

101. Microscopic Anatomy and Cell Biology (8 units). Lecture/laboratory, four three-hour sessions (12 weeks). Prerequisite: medical student standing or consent of instructor. Microscopic study of the structure and function of tissues and cells, with special reference to the human body.
Ms. Dirksen, Mr. Young, and the Staff (F)

102A-102B. Gross Anatomy of the Human Body (2 units, 8 units). Lecture, one hour; laboratory, four hours (Winter). Lecture, four hours; laboratory, 12 hours (Spring). Prerequisite: dental student standing or consent of instructor. Course 102A is prerequisite to 102B. Systemic and topographical human anatomy, with dissection of the human cadaver. Emphasis on head and neck. In Progress grading.
Mr. Harper and the Staff (W,Sp)

103A-103B. Basic Neurology (1 unit, 3 units). Lecture/laboratory, one four-hour and two one-hour sessions (Winter — last six weeks); one two-hour, one three-hour, and two one-hour sessions (Spring). Prerequisite: medical student standing or consent of instructor. Corequisites: Physiology 103A-103B. Lectures, conferences, demonstrations, and laboratory procedures necessary for an understanding of the functions of the human nervous system. In Progress grading. Mr. Schlag and the Staff (W,Sp)

104. Mammalian Histology (6 units). Lecture/laboratory, three three-hour sessions. Prerequisite: dental student standing or consent of instructor. Lectures, demonstrations, and laboratories dealing with the structural organization of tissues and organs at the microscopic level. Mr. Campbell and the Staff (F)

105A-105B. Gross and Developmental Anatomy for Medical Students (8 units, 4 units). Lecture/laboratory, four four-hour sessions (Fall — 12 weeks); one- to four-hour sessions (total of 20 hours) on an irregular schedule (Winter — first four weeks). Prerequisite: medical student standing. Gross anatomy, embryology, and radiological anatomy of the human body as taught by lectures, demonstrations, and dissection. In Progress grading.
Mr. Maxwell and the Staff (F,W)

106. Functional Neuroanatomy. Lecture/laboratory, three two-hour sessions. Prerequisite: dental student standing or consent of instructor. Lectures, demonstrations, and laboratories dealing with the structure and functional organization of the nervous system.
Mr. Adinolfi and the Staff (W)

199. Individual Special Studies (2 to 8 units). Prerequisite: consent of instructor. Studies in anatomy and related subject areas appropriate for the 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. Structure and Function of Cells and Tissues (2 units). Lecture, one hour; discussion, one hour. Prerequisites or corequisites: course 101, consent of instructor. Current topics on structural and functional aspects of microscopic anatomy. May be repeated for credit. S/U grading.
Ms. Dirksen, Mr. Young, and the Staff (F)

M203. Oral Embryology. (Same as Oral Biology M203.) Lectures and laboratory instruction in the development and histological structure of the facial region and the oral and peri-oral organs and tissues.
Mr. Bernard and the Staff (Sp)

M206A. Neurosciences: The Introductory Course for Graduate Students (5 units). (Same as Neuroscience M206A). Lecture, four hours; laboratory/demonstrations, three hours. Prerequisites: a college-level course in biology or zoology, some familiarity with the subjects of electronics and electricity, consent of instructor. Introductory course on the principles of organization and function of the nervous system, intended for graduate students in relevant disciplines and as background for more advanced courses for students specializing in the neurosciences.
Mr. Decima, Mr. Scheibel, Mr. Segundo (W)

M206B. Neurosciences: The Intermediate Course for Graduate Students (7 units). (Same as Neuroscience M206B.) Lecture, six hours; laboratory, two hours; tutorial contacts. Prerequisites: course M206A or 103A-103B, or equivalent, consent of instructor. Neuronal excitability and integration, sensory mechanisms, and motor control as related to behavior.
Mr. Decima, Mr. Scheibel, Mr. Segundo (Sp)

207A-207B. Gross and Developmental Anatomy for Graduate Students (8 units, 4 units). Lecture/laboratory, four four-hour sessions (Fall); one- to four-hour sessions (total of 20 hours) on an irregular schedule (Winter — first four weeks). Prerequisite: consent of instructor. Gross anatomy, embryology, and radiological anatomy of the human body as taught by lectures, demonstrations, and dissection. **207A.** Trunk and Extremities; **207B.** Head and Neck. Each course may be taken independently for credit.
Mr. Maxwell and the Staff (F,W)

208A-208B. Electronics for Neuroscientists. Lecture, two hours; laboratory, four hours. Prerequisite: consent of instructor. Development of an understanding of electronic methods used in neuroscience. Basic principles of passive networks, operational amplifiers, semiconductor theory, digital logic, waveform generation, signal conditioning, data acquisition methods, and neurophysiological instrumentation systems. S/U or letter grading. (F,W)

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)

213. Multigene Families (2 to 4 units). (Formerly numbered M213.) Lecture, one to two hours; discussion, one to two hours. Prerequisite: consent of instructor. Analysis of the molecular structure, developmental regulation, and evolution of multigene families. Topics include the hemoglobins, immunoglobulins, histones, ribosomal RNAs, satellite DNAs, and histocompatibility antigens. S/U or letter grading.
Mr. Campbell (W)

M221A-M221B. Cellular and Molecular Neurochemistry. (Same as Biological Chemistry M221A-M221B, Neuroscience M221A-M221B, Pharmacology M221A-M221B, and Psychiatry M221A-M221B.) Lecture, three hours. Prerequisites: Biological Chemistry 101A-101B-101C or equivalent. Contemporary neurochemistry for students with a general background in biochemistry. Relates the biochemical and structural properties of the nervous system to its development and functions and introduces students to disorders that result from alterations in the fundamental biochemistry of the nervous system. Although the subject is treated in an interdisciplinary manner, course progresses from structure through chemistry to function in precise manner and biological terms.
Mr. de Vellis, Mr. Eiduson, Mr. Olsen (W,Sp)

M223. Paradigms of Evolution. (Same as Biology M231A.) Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. The range of conceptual foundations underlying evolutionary studies in various fields of biology, biochemistry, geology, and physics today. S/U or letter grading.
Mr. Brunk, Mr. Campbell

M224A-M224B. Structure and Chemistry of Connective Tissue (2 units each). (Same as Oral Biology M224A-M224B.) Prerequisites: histology, biochemistry. A seminar course designed for graduate students in dentistry, medicine, or basic science. Fundamental information on the fine structure and chemical composition of bone, dentin, cementum, cartilage, and cells of connective tissue in general, as well as enamel, with emphasis on the biosynthesis of collagen, noncollagenous proteins and glycoproteins, and glycosaminoglycans (mucopolysaccharides). The possible roles of cellular and noncellular elements in the process of biological mineralization and correlation of biological processes to periodontal pathology. In Progress grading.
Mr. Weinstock and the Staff (F,W, alternate years)

M225. Biology of Bone (2 units). (Same as Oral Biology M214.) Lecture, two hours; discussion, one hour. Prerequisite: consent of instructor. Embryology of bone tissue; bone as an organ; growth and development of specific bones; biochemistry and physiology of bone; remodeling of bone; crystallography of hydroxyapatite; pathological calcifications; pathology of bone; mechanisms and lineage of calcification; clinical correlations. Mr. Bernard (W)

M226. Brainstem Control of Rhythmical Movements. (Same as Kinesiology M243; lecture is the same as Oral Biology 207, which is two units only.) Lecture, two hours; discussion, two hours. Discussion of the central nervous system mechanisms which coordinate and control the contraction patterns of the muscles which are involved in behaviors such as suckling, chewing, swallowing, speech, respiration, and locomotion. Emphasis on the interaction among brainstem reflexes, pattern generators, and "voluntary" control centers. Mr. Chandler, Mr. Goldberg

M235. Gut and Brain Peptides (2 units). (Same as Neuroscience M235 and Physiology 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, Mr. Reeve, Ms. Tache (W)

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)

252. Seminar on Basic and Quantitated Neurophysiology (2 units). Lecture, 90 minutes; discussion, 90 minutes. Prerequisite: consent of instructor. Lecture series on basic neurophysiology. Early lectures by invited specialists on their specific fields. Later lectures by each student on a topic selected and prepared in collaboration with the instructor.
Mr. Segundo (Sp, even years)

253. Communication and Coding in Nervous Systems. Lecture/discussion, one two-hour and two 90-minute sessions. Prerequisite: consent of instructor. Presentation, discussion, and critique of efforts to quantify neuronal function where the essence of the mathematics is expressed in qualitative and physiologically meaningful terms (e.g., stability, neurons as analyzers of spike trains, identification of synaptic operators). Mr. Segundo (Sp, odd years)

M255A-M225D. Seminars in Neural and Biobehavioral Endocrinology (3 units, 2 units, 3 units, 2 units). (Formerly numbered 255A-255D.) (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.

Mr. Gorski (W, M255A, M255C; Sp, M255B, M255D)

256. Seminar in Cell Structure and Function (2 units). Lecture, one hour; discussion, one hour. Prerequisite: consent of instructor. Selected topics in cell biology emphasizing those areas which are of current interest. An analysis of the various techniques being used to study the cell.

Ms. Dirksen and the Staff (W,Sp)

258. Seminar in 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/discussion, three hours. Prerequisites: courses M206A, M206B, or equivalent. A seminar with strong emphasis on specific reading assignments. An integrated view of neuronal circuit analysis at an advanced level; the layout and performance of a variety of basic neuronal circuits serving different control functions.

Mr. Schlag (W)

265. Evolution of Cancer (2 units). Prerequisite: consent of instructor. Review of current literature emphasizing the appearance of tumors and neoplasms in representative invertebrates, fishes, amphibians, and reptiles. Theories of cancer development from the evolutionary viewpoint. Mr. Cooper (W)

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 the instructor and student. S/U grading.

390A-390B. The Peer Review System (2 units each). Prerequisite: advancement to candidacy in integrative or systems biology or consent of instructor. Introduction to the peer review system for the evaluation of research proposals. After consideration of the grant review process, each student prepares an 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)

490. Communicating Scientific Information (2 units). Prerequisite: graduate standing in anatomy. Student papers and lectures as the basis for group discussions of the art and science of effective written and oral communication of scientific information. May be repeated for credit. S/U grading. (W)

495A-495F. Preparation for Teaching in the Anatomical Sciences (2 to 4 units each). Prerequisites: graduate standing, consent of vice chair and instructor. Observation and practice of the 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. A 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. Course is used to record enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. 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*
L.R.C. Agnew, M.D., *Emeritus*
Mary A.B. Brazier, Ph.D., *Emeritus, in Residence*
Franklin D. Murphy, M.D., Sc.D., *Emeritus*

Associate Professor

Robert G. Frank, Jr., Ph.D., *Division Chief*

Adjunct Lecturer

Elizabeth R. Lomax, M.D., Ph.D.

Upper Division Courses

107A-107B. Historical Development of Medical Sciences. Lecture, three hours. The major contributions of medicine and medical personalities from earliest times. **107A.** The contributions of medicine and medical personalities from earliest times through 1650. **107B.** The 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)

Graduate Courses

240A-240B. History of Medical Sciences (2 units each). Lecture, one hour. Survey of the development of scientific and medical thought from ancient times to the present. (F,W)

241A-241B. History of Clinical Sciences (2 units each). Lecture, one hour. Survey of the development of the clinical specialties and comparison of medical practice in Western civilization with that developed in other parts of the world. (F,W)

242. History of Pathology (1 unit). Survey of the history of pathology and related sciences from antiquity to the 20th century, tracing the development of pathological theory, practice, organization, and education and comparing them to current practice. (F)

243. History of Surgery (1 unit). Survey of the history of surgery and related sciences from antiquity to the 20th century, tracing the development of surgical theory, practice, organization, and education and comparing them to current practice. (W)

244. History of American Medicine (1 unit). Survey of the history of medicine in the United States from the Colonial period to the present. (Sp)

246. History of Neurophysiology: Its Impact on Psychology and Medicine (2 to 4 units). Lecture, one hour; seminar, two hours. The development of experimental neurophysiology from its scientific roots in the 17th century through the recognition of the excitability of the nervous system, to the use of this characteristic in revealing the functions of the central nervous system. Discussion of the interaction of neurophysiological ideas with contemporaneous philosophy and medicine. Lectures may be taken independently. Ms. Brazier, Ms. Lomax, Ms. O'Neill (Sp)

250. History of Medical Psychology (2 units). Lecture, one hour. An examination of the themes underlying modern mental health theories. Beginning with a review of contemporary thinking, lectures focus on the various factors shaping present concepts of mental disorders and provide a framework for the understanding of 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 the advice and direction of the instructor. Individual reports and conferences. (F,W,Sp)

Anesthesiology

56-125 Center for the Health Sciences, (213) 825-4123

Professors

Gerald D. Allen, M.D.
Robert O. Bauer, M.D.
Theresa Ferrer-Brechner, M.D.
Werner E. Flacke, M.D., *in Residence, Vice Chair*
Ronald L. Katz, M.D., *Chair*
Lawrence Kruger, Ph.D.
Ching-mu Lee, M.D., *Vice Chair*
Richard Patterson, M.D.
Eduardo Rubinstein, M.D., Ph.D.
Stuart F. Sullivan, M.D., *Executive Vice Chair*
Leonard F. Walts, M.D.
John B. Dillon, M.D., *Emeritus*

Associate Professors

Kenneth A. Conklin, M.D.
Jordan D. Miller, M.D.
Robert C. Reynolds, M.D.
Susan A. Ward, Ph.D.

Assistant Professors

Nicholas Durant, Ph.D., *in Residence*
Rosamaria Durazo, M.D., *in Residence*
Patricia Kapur, M.D.
Marie Kuffner, M.D., *in Residence*
John Reeves, Ph.D., *in Residence*
Naomi Saucier, M.D., *in Residence*
Stanley Stead, M.D.
Denham S. Ward, M.D., Ph.D.
Ronald Wender, M.D., *in Residence*

Adjunct Professors

Edward C. DeLand, Ph.D.
Joan W. Flacke, M.D.

Adjunct and Clinical Associate Professors

John DeAngelis, M.D., *Clinical*
George P. Herr, M.D., *Adjunct*
Leah E. Katz, CRNA, Ed.D., *Adjunct*
Robert D. Kaufman, M.D., *Adjunct*
Maurice Lippman, M.D., *Adjunct*
Young Zin Sohn, M.D., *Adjunct*
Elaine C. Yang, M.D., *Adjunct*

Adjunct and Clinical Assistant Professors

Lori Berke, M.D., *Adjunct*
Byron C. Bloor, Ph.D., *Adjunct*
Joseph Cadranel, M.D., *Clinical*
Linda S. Finander, CRNA, M.S., *Adjunct*
Sandy Frye, CRNA, M.S., *Adjunct*
Charles A. Griffis, CRNA, M.S., *Adjunct, Program Director*
Marshall Kaplan, M.D., *Adjunct*
Jill L'Armand, M.D., *Adjunct*
Suha Murad, M.D., *Adjunct*
Evelyn Norel, M.D., *Adjunct*
Jeannette F. Peter, CRNA, M.Ed., *Adjunct*
Con Gia Pham, M.D., *Adjunct*
Lois J. Remely, CRNA, M.S., *Adjunct*
John Ritter, M.D., *Adjunct*
Shannon L. Steck, CRNA, M.A., *Adjunct*

Scope and Objectives

The Department of Anesthesiology in the School of Medicine offers a program leading to the M.S. degree in Nurse Anesthesia. This program prepares qualified Registered Nurses in the specialty of anesthesiology and qualifies the graduate to sit for the certification examination given by the Council on Certification of Nurse Anesthetists. The graduate attains 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 and the teaching of nurse anesthesiology with the opportunity for participating 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) Licensure as a Registered Nurse prior to entry into clinical coursework. Evidence of status as a Registered Nurse in the State of California is mandatory.

(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) Aptitude 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) Interview with the program director or designee and with members of the final selection committee, and observation in the clinical practicum.

Approximately five to six students are selected for admission in Fall Quarter by the final selection committee which meets annually in January. Information regarding the program may be obtained by writing to the Department of Anesthesiology, 56-125 CHS, UCLA, Los Angeles, CA 90024. All applicants must apply to both the department and the Graduate Division. Separate applications are needed.

Foreign Language Requirement

There is no foreign language requirement for the M.S. degree.

Course Requirements

Total courses required for the degree: 13¼; all must be graduate-level courses.

Required: Anesthesiology 210A, 210B, 210C, 215A, 215B, 220A, 220B, 220C, 221, 223, 225A-225B, 290, 400A through 400G, 401, 402, 597 or 598A, 598B.

Completion of courses 597 or 598A and 598B is required. Course 598B may be repeated twice, but only two of the courses may be applied toward the degree. Letter grading may be utilized in 500-series courses.

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 the Winter or Spring Quarter of your second year. You must take a written comprehensive examination for course completion.

Comprehensive Examination Plan

Students electing this option must demonstrate didactic and clinical competence in the field and must complete selected education courses.

If you elect the oral examination option, you must, in addition to the required curriculum in anesthesia, successfully complete designated courses in curriculum, testing and evaluation, and instruction to meet the accreditation requirements for teachers of anesthesia. 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 didactic and clinical work to earn the Master of Science degree.

(2) The program does not discriminate on any basis unless a handicap is determined by the selection 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 the requirements for application to sit for the Certification Examination of the AANA for program completion.

Graduate Courses

210A. Chemistry and Physics of Nurse Anesthesia I (2 units). Lecture, two hours; discussion, one hour. A study of the principles of chemistry and physics as applied specifically to the practice of anesthesia. Mr. Katz

210B. Chemistry and Physics of Nurse Anesthesia II (2 units). Lecture, two hours; discussion, one hour. Prerequisite: course 210A. A continuation of the study of the principles of chemistry and physics as applied specifically to the practice of anesthesia. Mr. Katz

210C. Chemistry and Physics of Nurse Anesthesia III (2 units). Lecture, two hours; discussion, one hour. Prerequisite: course 210B. A continuation of the 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. Katz

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. A study of uptake and distribution, mechanism of action, fate, and toxicology as related to anesthetic agents. Mr. Flacke and the Staff

215B. Pharmacology of Nurse Anesthesia II. Lecture/discussion. A study of the pharmacology of adjunct drugs influencing anesthesia administration, including their uptake and distribution, mechanism of action, fate, biotransformation, and toxicology. Mr. Flacke and the Staff

220A. Respiratory Anatomy and Physiology for Nurse Anesthetists I (2 units). Lecture, two hours; discussion, one hour. A study of the structure and function of the respiratory system, with emphasis on anatomy and physiology at the cellular level. Ms. Ward

220B. Respiratory Anatomy and Physiology for Nurse Anesthetists II (2 units). Lecture, two hours; discussion, one hour. A continuation of respiratory anatomy and physiology, with emphasis on the respiratory system as related to anesthesia administration and relevant problems. Ms. Ward

220C. Respiratory Anatomy and Physiology for Nurse Anesthetists III (2 units). Lecture, two hours; discussion, one hour. A continuation of the study of respiratory anatomy and physiology as related to anesthesia administration and relevant problems. Ms. Ward

221. Cardiovascular Anatomy and Physiology for Nurse Anesthetists. Lecture, four hours; discussion, one hour. An integrated study of the anatomy and physiology of the C-V system as related to the management of anesthesia administration. Ms. Ward

M222. Biological Control Systems. (Same as Electrical Engineering M243.) Prerequisite: Electrical Engineering 141 or equivalent. Introduction to the application of control theory to the modeling and analysis of biological control systems, such as the respiratory system, cardiovascular system, and neuromuscular system. Emphasis on solving problems of current interest in biomedicine. Mr. Wiberg

223. Anatomy and Physiology of the Endocrine and Excretory Systems for Nurse Anesthetists. Lecture, four hours; discussion, one to two hours. An integrated study of the endocrine and excretory systems as related to the management of anesthesia administration. Mr. Katz

225A-225B. Anatomy and Physiology of the Nervous System for Nurse Anesthetists (2 units each). (Formerly numbered 225.) Lecture, two hours; discussion, one to two hours. An integrated study of the anatomy and physiology of the nervous system as related to the management of anesthesia administration. Mr. Rubinstein

M268. Behavioral Management of Pain Problems (2 units). (Same as Psychiatry M268.) Prerequisite: consent of instructor. Review of current knowledge and skills involved in the behavioral assessment and management of acute and chronic pain problems. The behavioral perspective integrated with related physiological and medical considerations. Mr. McCreary, Mr. Reeves (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. Ward and the Staff

400A. Basic Clinical Anesthesia for Nurse Anesthetists I (2 units). Lecture, three hours; laboratory, 30 hours. Prerequisite: course 402. Correlation of techniques of anesthesia administration with basic science knowledge as applied in the clinical area with supervised practice. S/U grading. Ms. Frye and the Staff

400B. Basic Clinical Anesthesia for Nurse Anesthetists II (2 units). Lecture, two hours; laboratory, 30 hours. Prerequisite: course 400A. A continuation of the practice of techniques of anesthesia administration as applied in the clinical area with supervised practice. S/U grading. Ms. Frye and the Staff

400C. Basic Clinical Anesthesia for Nurse Anesthetists III (2 units). Lecture, two hours; laboratory, 30 hours. Prerequisite: course 400B. A continuation of techniques of anesthesia administration as applied in the clinical area with supervised practice. S/U grading. Ms. Frye and the Staff

400D. Clinical Anesthesia for Nurse Anesthetists IV (2 units). Lecture, two hours; laboratory, 30 hours. Prerequisite: course 400C. A practice of refinements of anesthesia techniques, with emphasis on specialized areas of anesthesia administration in supervised practice. S/U grading. Ms. Frye and the Staff

400E. Clinical Anesthesia for Nurse Anesthetists V (2 units). Lecture, two hours; laboratory, 30 hours. Prerequisite: course 400D. A practice of refinements of anesthesia techniques, with emphasis on specialized areas of anesthesia administration in supervised practice. S/U grading. Ms. Frye and the Staff

400F. Clinical Anesthesia for Nurse Anesthetists VI (2 units). Lecture, two hours; laboratory, 30 hours. Prerequisite: course 400E. A practice of refinements of anesthesia techniques, with emphasis on specialized areas of anesthesia administration in supervised practice. S/U grading. Ms. Frye and the Staff

400G. Clinical Anesthesia for Nurse Anesthetists VII (2 units). Lecture, two hours; laboratory, 30 hours. Prerequisite: course 400F. A practice of refinements of anesthesia techniques, with emphasis on specialized areas of anesthesia administration in supervised practice. S/U grading. Ms. Frye and the Staff

401. Orientation to Nurse Anesthesia (2 units). Lecture, two hours; discussion, 30 minutes to one hour. Orientation to history, ethics, and legal aspects of nurse anesthesia. Psychology related to patient undergoing surgery and anesthesia. Ms. Katz

402. Fundamentals of Anesthesia Practice for Nurse Anesthetists (6 units). Lecture, six hours; discussion, one to two hours. Introduction to basic principles of anesthesia administration, including preanesthetic assessment, physical examination, techniques and procedures, and anesthesia for specialized techniques and surgery. Mr. Katz and the Staff

597. Preparation for M.S. Oral Qualifying Examination (2 units). Prerequisite: consent of instructor. Opportunity to pursue comprehensive study in anesthesiology and related areas on an individual basis, with the opportunity for discussion of the material with the instructor. Mr. Katz, Ms. Ward

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 the oral comprehensive examination for completion of the M.S. program. Ms. Ward

598B. Research in Anesthesia II (2 units). Prerequisite: course 598A. Opportunity to pursue anesthesia research outlets for thesis preparation. Independent research of quality suitable for publication required. May be selected instead of the oral comprehensive examination for completion of the M.S. program. May be repeated twice for credit. Ms. Ward

Biological Chemistry

33-257 Center for the Health Sciences, (213) 825-6545

Professors

Roslyn B. Alfin-Slater, Ph.D.
Robert J. DeLange, Ph.D.
Edward M.F. De Robertis, M.D., Ph.D. *(Sprague Professor of Molecular Oncology)*
John Edmond, Ph.D.
Peter Edwards, Ph.D., *in Residence*
Samuel Eiduson, Ph.D., *in Residence*
Armand J. Fulco, Ph.D.
Dohn G. Glitz, Ph.D., *Vice Chair*
Isaac M. Harary, Ph.D.
Harvey R. Herschman, Ph.D.
Bruce D. Howard, M.D.
Elizabeth F. Neufeld, Ph.D., *Chair*
James C. Paulson, Ph.D.
Larry J. Shapiro, M.D., *in Residence*
David S. Sigman, Ph.D.
Marian E. Swendseid, Ph.D.
William T. Wickner, M.D.
Irving Zabin, Ph.D., *Associate Dean, School of Medicine*

Emeritus Professors

Robert M. Fink, Ph.D.
Ralph W. McKee, Ph.D.
James F. Mead, Ph.D.
Joseph F. Nyc, Ph.D.
John G. Pierce, Ph.D.
George J. Popjak, M.D., D.Sc.
Sidney Roberts, Ph.D.
Emil L. Smith, Ph.D.
Stephen Zamenhof, Ph.D.

Associate Professors

Kathryn L. Calame, Ph.D.
Leonard H. Rome, Ph.D.
Patrice J. Zamenhof, Ph.D.

Assistant Professors

Reid Johnson, Ph.D.
Kevin McEntee, Ph.D.
S. Larry Zipursky, Ph.D.

Scope and Objectives

Modern biochemistry is both intellectually and methodologically a wide-ranging and expanding field of science; it has grown well beyond its initial definition as the chemistry of living things. People who call themselves biochemists work in areas as diverse as medical research, nutrition, pharmacology, crystallography, virology, genetic manipulation, and cellular or molecular biology, as well as the "traditional" studies of metabolism, enzymology, and molecular structure.

The Biological Chemistry Department at UCLA attempts to provide students with the necessary background for continued growth in this fast-changing science. As a part of the School of Medicine, the department is involved in the basic education of students who will be practicing physicians, as well as medical research specialists. But through its graduate program and its interactions with other graduate departments, it deals with students whose primary interests are in biochemistry and other related sciences.

The department emphasizes biochemical research leading to the Ph.D. degree; the faculty represents a variety of research areas, and graduates find employment in a multiplicity of research or research-related fields, as well as in teaching. The department also offers limited opportunities for research or nonresearch study toward the M.S. degree.

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), physical 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) Aptitude 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 Advanced Test in either Biology or Chemistry. 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.

Course Requirements

All graduate students must take the four core courses (Biological Chemistry M253, M255, M263, and M267) unless excused by the graduate adviser. (See additional course requirements under each degree program.)

Written Qualifying Examination

After completing the core course requirements (see above), you must take the departmental written examination (usually given in July; may be given in January or at other times if there is sufficient need). 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 and makes a recommendation to the departmental faculty of one of the following: (1) pass at the Ph.D. level of achievement; (2) pass at the master's level of achievement; (3) fail.

The departmental faculty can approve or change the recommended action and can authorize a reexamination in case of failure (consent is rarely given to take the test a third time). The faculty may also recommend or require additional coursework in specific areas prior to taking the examination a second time, or before taking final action on the results of the written examination.

Master of Science Degree

Course Requirements

In addition to the core course requirements described above for all students, elective courses 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. All three courses are graded S/U and may be taken as often as necessary.

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 at the master's level of achievement (see above). 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 quarter 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) Three or four elective courses (total of 10 to 12 units) 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 quarters 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 or dental students (usually one day a week for one quarter during the second year) and by assisting in the grading of examinations (usually one to two times per quarter starting in the second year).

Qualifying Examinations

If you have passed the departmental written examination at the Ph.D. level of achievement (see above), you should consult with the department chair, who is responsible for nominating faculty members to serve on your doctoral committee.

The University Oral Qualifying Examination, which must be passed before you can be advanced to candidacy, consists of the presentation and defense of a research proposal to the doctoral committee. This proposal should not be in the area of your dissertation research. The doctoral committee determines whether you pass the examination and whether reexamination is allowed in case of failure. The examination may be repeated only once. It is expected that students will complete the University Oral Qualifying Examination by the beginning of the 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 applications 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

101A-101B-101C. Biological Chemistry. Lecture, three hours. Prerequisite: organic chemistry. Required in the medical curriculum; consent of instructor required for nonmedical students. (F, 101A; W, 101B; Sp, 101C)

101E. Biological Chemistry Laboratory. Laboratory, seven hours. Required in the medical curriculum; consent of instructor required for nonmedical students. Experiments illustrating some of the procedures employed in clinical chemistry, enzymology, and metabolic studies. (Sp)

102A-102B. Biological Chemistry Lecture (Dental Students). Lecture, three hours. Prerequisites: courses necessary for admission to dental school. Required in the dental curriculum; consent of instructor required for nondental students. The biochemical properties and structures of living systems, with special emphasis on mineral metabolism and nutrition. (F, 102A; W, 102B)

102C. Biological Chemistry Seminar (Dental Students) (1 unit). Seminar, four hours (five weeks). Required in the dental curriculum; consent of instructor required for nondental students. The seminars, given by the students to small discussion groups, involve presentation of material from current research dealing with biochemical studies. (W)

Graduate Courses

201A-201B. Biological Chemistry. Lecture, three hours. Prerequisites: organic chemistry, an undergraduate course in biochemistry other than a beginning survey course, consent of instructor. A graduate-level course in fundamentals of biochemistry, with emphasis on mammalian biochemistry. Structure, function, and metabolism of major cell constituents. (F, 201A; W, 201B)

220A-220B-220C. Research Laboratory Rotations (2 to 8 units each). Lecture, one hour; laboratory, six hours. Prerequisite: consent of instructor. Students arrange apprenticeships in the 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 the selection of a thesis/research adviser. S/U grading.
Mr. Fulco and the Staff (F, 220A; W, 220B; Sp, 220C)

M221A-M221B. Cellular and Molecular Neurochemistry. (Formerly numbered 221.) (Same as Anatomy M221A-M221B, Neuroscience M221A-M221B, Pharmacology M221A-M221B, and Psychiatry M221A-M221B.) Lecture, three hours. Contemporary neurochemistry for students with a general background in biochemistry. Relates the biochemical and structural properties of the nervous system to its development and functions and introduces students to disorders that result from alterations in the fundamental biochemistry of the nervous system. Although the subject is treated in an interdisciplinary manner, course progresses from structure through chemistry to function in precise manner and biological terms.
Mr. de Vellis, Mr. Eiduson, Mr. Olsen (W,Sp)

222. Biochemistry of the Synapse (2 units). Prerequisite: course M221A. Detailed analysis of the research literature dealing with biochemistry of the synapse. Metabolism, storage, and release of transmitter; transmitter receptors and functions; neuronal plasticity. Mr. Howard

M248. Molecular Genetics. (Formerly numbered 248.) (Same as Biology M248.) Lecture, three hours; discussion, one hour. Prerequisite: consent of instructor. Basic concepts in modern genetics, drawing examples from both eukaryotic and prokaryotic systems. Emphasis on the 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.
Ms. Calame, Mr. McEntee, Mr. Miller, Mr. Shapiro (Sp)

M253. Macromolecular Structure (6 units). (Same as Chemistry M253.) Lecture or recitation, five hours. Prerequisites: courses 101A-101B or 201A-201B, or Chemistry 110A, 156, 157A, and 157B, or equivalent, or consent of instructor. Chemical and physical properties of proteins, nucleic acids, and other macromolecular complexes, with emphasis on theory and methodology; correlation of structure and biological properties; chemical synthesis and properties of polypeptides and polynucleotides. Ms. Calame (F)

M255. Biological Catalysis (2 units). (Same as Chemistry M255.) Prerequisites: course 101A or 101B or Chemistry 156, 157A, or 157B, and 110A, or equivalent, or consent of instructor. Reaction mechanisms in molecular biology; experimental approaches for the study of enzymes, including kinetics, isotopic labeling, stereochemistry, chemical modification, and spectroscopy; the design of pharmacologically active agents and artificial enzymes. Mr. Sigman (Sp)

M257. Physical Chemistry of Biological Macromolecules (2 units). (Same as Chemistry M257.) Prerequisite: Chemistry 25 or 110A or consent of instructor. Theory of hydrodynamic, thermodynamic, and optical techniques used to study the structure and function of biological macromolecules. (W)

M261. Advanced Chemistry and Biochemistry of Lipids. (Same as Chemistry M261.) Lecture, three hours; discussion, one hour. Prerequisites: courses 101A-101B or 201A-201B or Chemistry 157A and 157B, or equivalent. Comprehensive treatment of lipid nutrition and metabolic-nutrient interactions.
Ms. Alfin-Slater, Mr. Edmond, Mr. Mead (W)

M263. Metabolism and Its Regulation. (Formerly numbered M255.) (Same as Chemistry M263.) Lecture, three hours. Prerequisites: course 101A or 101B or Chemistry 156, 157A, or 157B, 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. Mr. Atkinson, Mr. Weiss (Sp)

M264A-M264B-M264C. Molecular Basis of Atherosclerosis: Selected Topics (2 units each). (Same as Chemistry M264A-M264B-M264C.) Prerequisites: course M261 or equivalent, consent of instructor. The biochemistry, morphology, and physiology of atherosclerosis. Emphasis on the chemistry of lipoproteins and the role of plasma lipoproteins in the regulation of tissue lipid metabolism and the development of atherosclerosis. Each course may be taken independently for credit.

265. Seminar in the Biochemistry of Nucleic Acids (2 units). Lecture or recitation, one hour. Prerequisite: course M253 or equivalent. Biochemistry and chemistry of nucleic acids and nucleotides.
Mr. Glitz

266A-266B-266C. Seminar in the Biochemistry of Differentiation (2 units each). Lecture or recitation, one hour. Prerequisite: consent of instructor. A review of the current literature in the areas of specific expression of function and control of enzyme synthesis; metabolism in developing systems; and the control of gene expression pertaining to the biochemistry of development. Mr. Harary, Mr. Herschman

M267. Macromolecular Metabolism and Subcellular Organization (6 units). (Same as Chemistry M267.) Lecture or recitation, five hours. Prerequisites: courses 101A-101B or 201A-201B or Chemistry 157A and 157B, or equivalent. Recommended: course M253. Metabolism of nucleic acids and proteins; biosynthesis of complex lipids and polysaccharides; structure and properties of cellular organelles. Mr. Herschman, Mr. Martinson (W)

M269. Developmental Biochemistry (2 units). (Same as Chemistry M269.) Prerequisite: course M267 or consent of instructor. Biochemical aspects of development, specific tissue and cell function, and differential gene expression. The biochemistry of cell division, macromolecular synthesis, chromatin function in gene expression, cell-cell interactions, membrane organization, and growth as they contribute to such topics as hormone induction, morphogenesis, and viral transformation. Emphasis on the use of differentiating *in vivo* systems and cell culture as models. Mr. Harary, Mr. Herschman

M298. Seminar on 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. committee. 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). Laboratory, to be arranged. Prerequisite: consent of graduate adviser. S/U 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, (213) 825-5018

Professors

Abdelmonem A. Afifi, Ph.D.
Virginia A. Clark, Ph.D.
Robert M. Elashoff, Ph.D.
Donald J. Jenden, M.D., Ph.D. (h.c.)
Robert I. Jennrich, Ph.D.
Kenneth L. Lange, Ph.D., *Chair*
Frank J. Massey, Ph.D.
Carol M. Newton, M.D., Ph.D.
Michael E. Phelps, Ph.D.
M. Anne Spence, Ph.D., *in Residence*
Wilfrid J. Dixon, Ph.D., *Emeritus*

Associate Professors

Susan E. Hodge, D.Sc., *in Residence*
Henry Huang, D.Sc., *in Residence*
Edward Korn, Ph.D., *in Residence*
Roderick J.A. Little, Ph.D., *Vice Chair*

Assistant Professor

Elliot M. Landaw, M.D., Ph.D.

Adjunct Professors

Edward C. DeLand, Ph.D.
Janet D. Elashoff, Ph.D.
Alan B. Forsythe, Ph.D.
Arthur Peskoff, Ph.D.

Adjunct Assistant Professors

Eli Engel, M.D., Ph.D.
David Greenberg, Ph.D.
Daniel F. Heitjan, 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 human genetics, 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 Aptitude and Advanced 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 Graduate Admissions Office application 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 departmental forms, should be sent to the Chair, Graduate Admissions Committee, Department of Biomathematics, AV-617 CHS, UCLA, Los Angeles, CA 90024.

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

In fulfilling the University's minimum requirement of nine courses, master's candidates must complete at least five graduate-level courses in biomathematics, of which Biomathematics 201, 202, and 203 are required.

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 committee consisting of at least three faculty members 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 is 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, 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, 207A, M207B, 208, 209.

Mathematics: Five graduate courses from an approved list, with two substitutions possible if especially appropriate to your research field. (Consent may be given by the advisory committee at the time of admission to the program 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 must 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.

With consent of the advisory committee, a student who does not plan to pursue an academic teaching career may, for one quarter, participate at the level of one 596 course in the individual-instruction activities of a member of the department faculty (e.g., informal instruction of biomedical scientific collaborators, planning and guiding individual reading programs, developing and administering term projects in research).

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 joint action of the curriculum and advisory committees 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

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 (Sp)

M153. Introduction to Computational Statistics. (Same as Public Health M101D.) Lecture, three hours; discussion, one hour. Prerequisite: Mathematics 150C or 152B or equivalent. Statistical analysis of data by means of package programs. Regression, analysis of variance, discriminant analysis, and analysis of categorical data. Emphasis on understanding the connection between statistical theory, numerical results, and analysis of real data. Mr. Jennrich

CM156. Human Genetics. (Same as Biology CM156.) Lecture, three hours; discussion, one hour. Prerequisites: Biology 8, Chemistry 25. The 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 the methodologies appropriate to answer such questions. Concurrently scheduled with course CM256. Mr. Merriam, Ms. Spence (Sp)

160. Introductory Biomathematics for Medical and Biomedical Research. Lecture, four hours; discussion, 90 minutes. An 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. Ms. Elashoff (W)

170A. Computer-Based Introductory Biomathematics for Medical and Biological Experimenters. (Not the same as course 170A prior to Fall Quarter 1985.) Lecture, four hours; discussion, 90 minutes. An intensive elementary statistics course emphasizing the 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. Mr. Little (F)

170B. Statistical and Mathematical Modeling in Medical and Biological Research. (Not the same as course 170B prior to Spring Quarter 1986.) Lecture, four hours; discussion, 90 minutes. A 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 the opportunity to design their own experiments and analyze them on the computer, and to analyze previously collected data. Mr. Korn (Sp)

172. Design, Conduct, and Analysis of Clinical Investigations (2 units). Lecture, two hours; discussion, two hours. 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. P/NP grading. Mr. Elashoff (Sp, five weeks)

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 quarters and for a total of at least eight units. Thesis required. Ms. Spence (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 appropriate training of students. (F,W,Sp)

Graduate Courses

200. Research Frontiers in Biomathematics (2 units). Prerequisite: consent of instructor. A series of presentations by the faculty 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 the 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 the theory of Fourier transforms and Fourier series from the 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 the fast Fourier transform. Mr. Lange (W)

203. Stochastic Models in Biology. Prerequisite: Mathematics 150A or equivalent experience in probability. The mathematical description of biological relationships, with particular attention to areas where the conditions for deterministic models are inadequate. Examples of stochastic models drawn from genetics, physiology, ecology, and a variety of other biological and medical disciplines. Mr. Lange (Sp)

204. Biomedical Data Analysis. Prerequisite: consent of instructor. The quantity and quality of observations have been greatly affected by the present-day extensive use of computers. A problem-oriented study of the latest methods in statistical data analysis and the use of such arising in laboratory and clinical research. Mr. Little (Sp)

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. Modeling of Cellular Systems (2 to 4 units). Students who can contribute to the class either as biologists or theoreticians may attend. Expected performance is based on each individual's background. Study of recently reported characterizations of differentiating systems, flow cytometry, etc. Development of deterministic, stochastic, and computer simulation models from simple dividing systems through special cell populations. Biological assumptions, indications for various approaches, and relationships to laboratory research and clinical applications. Ms. Newton (W)

207A. Theoretical Genetic Modeling. Lecture, three hours; discussion, one hour. Prerequisite: upper division mathematics or human genetics or consent of instructor. The theoretical foundations underlying models and techniques used in mathematical genetics and genetic epidemiology. Topics include use of likelihood methods, segregation analysis, ascertainment bias, linkage analysis, genetic heterogeneity, and complex genetic models. Course complements M207B; students may take either and are encouraged to take both. Ms. Hodge (F, odd years)

M207B. Applied Genetic Modeling. (Formerly numbered M207.) (Same as Anthropology M222R.) Lecture, three hours; discussion, one hour. Prerequisites: Anthropology M222Q and graduate standing, or consent of instructor. Methods of computer-oriented genetic analysis. Topics include segregation and linkage analysis, polygenic (quantitative) models, and population structure. Includes a laboratory for hands-on computer analysis of genetic data; laboratory reports required. Course complements 207A; students may take either and are encouraged to take both. Ms. Spence (F, even years)

208. Modeling and Analysis of Neuroelectric Data. Designed for biologists (especially neuroscientists), but open to other science majors. Application of mathematical approaches for modeling and developing neural theory to basic neurophysiological phenomena and neural models. Appropriate practical approaches. (Sp)

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 the research literature. Development and demonstration of the 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)

210. Introduction to Biomedical Computation. Lecture, three hours; laboratory, three hours. Prerequisite: graduate standing. An introduction to FORTRAN programming, with a survey of biomedical computer applications and data processing techniques for both clinical and physiological experiments. Pace is rapid and subjects biologically oriented. Not recommended for students who merely wish an introductory course in FORTRAN programming. Prior knowledge of computers is not required even though the programming skills that are attained by the end of the quarter are quite substantial. (F)

213. Biomedical Laboratory Computing (Biomedical Minicomputing). Analysis of computational and data management problems encountered in the use of small digital computers for biomedical research. Practical experience acquired with the department's minicomputer in system generation and patching, documentation, interfacing, file management, assembler language, and higher order language programming with computer graphics. Selected laboratories used for experience in the direct processing of physiological data and in controlling laboratory experiments. (W)

215A. Advanced Biomedical Computation: Graphics. Lecture, four and one-half hours. Prerequisite: FORTRAN programming skills. Survey of biomedical graphics applications, rationale. Graphics hardware, software. Graphical representation: glyphs, projections, hidden lines. Interactive graphics programming, individual term projects. S/U or letter grading. Ms. Newton (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. Special Topics: Statistical Methods for Categorical Data. (Same as Public Health M201E.) Lecture, three hours; discussion, one hour. Prerequisites: Public Health 100B or 101B, Mathematics 150C or 152B, or equivalent, consent of instructor. Statistical techniques for the analysis of categorical data; discussion and illustration of their applications and limitations. Mr. Korn (W)

M232. Statistical Analysis of Incomplete Data. (Same as Public Health M202F.) Lecture, three hours; laboratory, one hour. Prerequisites: Public Health 100B or 101B, Mathematics 150C or 152B, or equivalent, consent of instructor. Discussion of the statistical analysis of incomplete data sets, with material from the 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 the methods to applied problems, as well as on the underlying theory. S/U or letter grading.
Mr. Little (Sp, odd years)

M233. Simultaneous Statistical Inference. (Same as Public Health M202G.) Lecture, three hours; discussion, one hour. Prerequisites: Mathematics 150C, Public Health 200C, M205A. Methods and theory of simultaneous statistical inference.
Mr. Korn (Sp, odd years)

M234. Applied Bayesian Inference. (Same as Public Health M202H.) Lecture, three hours; discussion, one hour. Prerequisites: Mathematics 150C, Public Health 200C, and M205A, or consent of instructor. The Bayesian approach to statistical inference, with emphasis on biomedical applications and concepts rather than mathematical theory. Topics include large sample Bayes inference from liklihoods, 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 (Sp, even years)

M246. Probability Models and Statistical Methods in Genetics. (Same as Anthropology M222Q.) Lecture, three hours. Prerequisites: Anthropology 222P, Mathematics 3A, two quarters of statistics, graduate standing. An introduction to probability models and statistical methods in genetics. Maximum likelihood methods for estimating genetic parameters introduced and discussed in detail. Mr. Read (W)

CM256. Human Genetics. (Same as Biology CM256). Lecture, three hours; discussion, one hour. Prerequisites: Biology 8, Chemistry 25. The 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 the methodologies appropriate to answer such questions. Concurrently scheduled with course CM156. Independent research project required of graduate students. Mr. Merriam, Ms. Spence (Sp)

M270. Optimal Experiment Design and Control for Biological and Other Dynamic Systems. (Same as Computer Science M270D and Medicine M270D.) Prerequisites: Computer Science 270B and M270C, or consent of instructor. Theory and algorithms for designing optimal experiments for quantifying or optimal inputs for controlling dynamic systems in engineering and life sciences. Optimal sampling schedules for parameter estimation. Control optimization and variations for designing optimal test-inputs. Algorithms, software, and applications in medicine and engineering. Mr. Landaw (W)

M280. Computational Statistics. (Same as Mathematics M280 and Public Health M207J.) Lecture, three hours. Prerequisites: Mathematics 115A, 150C, or equivalent. Introduction to theory and design of statistical programs: pivoting and other technologies used in stepwise regression, nonlinear regression algorithms, algorithms for balanced and unbalanced analysis of variance, including the mixed model, iterative rescaling, and other methods for log-linear models. Mr. Jennrich (F)

M281. Survival Analysis. (Same as Public Health M201K). Lecture, three hours; discussion, one hour. Prerequisites: Public Health 100C and Mathematics 150C or 152B, or equivalent, consent of instructor. Statistical methods for the analysis of survival data.
Mr. Elashoff (F)

M282. Problems of Statistical Consultation. (Same as Public Health M202E.) Lecture, two hours; discussion, one hour; laboratory, two hours. Prerequisite: graduate course in applied statistics. Textbook and original problems requiring special expertise in design and analysis. Use of computer packages to diagnose failure of assumptions, suitability of models, and alternate analyses. Mr. Little (W)

596. Directed Individual Study or Research in Biomathematics (2 to 12 units). Individual study on topics not yet covered by the offerings of the 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)

Medicine

32-127 Center for the Health Sciences, (213) 825-6275

Acting Executive Chair

Roy T. Young, M.D.

Chairs

Lawrence R. Freedman, M.D. *(Wadsworth VA)*
Richard J. Glassock, M.D. *(Harbor-UCLA)*
A. Paul Kelly, M.D., *Acting (King/Drew)*
Stanley G. Korenman, M.D. *(Sepulveda VA)*

Vice Chairs

Robert S. Sparkes, M.D. *(Academic)*
Roy T. Young, M.D. *(Training and Clinical)*

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* by 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 sophomore, junior, and senior years of medical school, with the junior and senior years constituting a continuum of clinical experience. Students become integrated into a ward team and 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.*

Microbiology and Immunology

43-239 Center for the Health Sciences, (213) 825-5661

Professors

Benjamin Bonavida, Ph.D. *(Immunology)*
John L. Fahey, M.D. *(Immunology)*
Sydney M. Finegold, M.D., *in Residence (Bacteriology)*
Sidney H. Golub, Ph.D., *in Residence (Immunology)*
Marcus A. Horwitz, M.D. *(Bacteriology)*
Dexter H. Howard, Ph.D. *(Mycology), Vice Chair*
David T. Imagawa, Ph.D. *(Virology)*
James N. Miller, Ph.D. *(Bacteriology)*
Debi P. Nayak, B.V.Sc., Ph.D. *(Virology)*
George R. Riviere, D.D.S., Ph.D. *(Immunology)*
Jack G. Stevens, D.V.M., Ph.D. *(Virology), Chair*
Jerrold A. Turner, M.D. *(Parasitology)*
Randolph Wall, Ph.D. *(Immunology)*
Felix O. Wettstein, Ph.D. *(Virology), Vice Chair*
Telford H. Work, M.D., M.Ph.H., D.T.M.&H. *(Virology)*
Ruth A. Boak, M.D., Ph.D., *Emeritus*
David McVickar, M.D., Ph.D., *Emeritus*
Margret I. Sellers, Ph.D., *Emeritus*
Henry E. Weimer, Ph.D., *Emeritus*
Stephen Zamenhof, Ph.D., *Emeritus*

Associate Professors

Asim Dasgupta, Ph.D. *(Virology)*
Ronald H. Stevens, Ph.D. *(Immunology)*
Jacob Zighelboim, M.D. *(Immunology)*

Assistant Professors

Rafi Ahmed, Ph.D. *(Virology)*
John Bramhall, Ph.D. *(Immunology)*
David A. Campbell, Ph.D. *(Parasitology)*
Lawrence T. Feldman, Ph.D. *(Virology)*
Mitchell Kronenberg, Ph.D. *(Immunology)*
Michael Lovett, M.D., Ph.D. *(Bacteriology)*
Virginia L. Scofield, Ph.D. *(Immunology)*

Lecturers
Margery L. Cook, Ph.D. *(Virology)*
Nina Dabrowa, Ph.D. *(Mycology)*
Maurice L. White, Ph.D. *(Bacteriology)*

Adjunct Associate Professor
George Fareed, M.D. *(Virology)*

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, 43-204 CHS, UCLA, Los Angeles, CA 90024.

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 202A, 202B, 202C, 202D are required and must be completed during your first year of study.

(2) Course 596 is required. You complete a laboratory rotation program during your first year of study.

(3) Courses M258A and M258B are required.

(4) Biological Chemistry M253 and six additional units of graduate biochemistry (Biological Chemistry M267 is recommended) are required.

(5) Additional course requirements are determined by your major field and your major professor.

Teaching Experience

Teaching assignment in one laboratory section of Microbiology and Immunology 201, 212, or another laboratory course presented by the department is 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 a three-hour written test in your major (immunology, medical microbiology, or virology) and two three-hour tests in two additional minor field topics selected from bacteriology, genetics, immunology, molecular biology, mycology, parasitology, and virology. 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 is separately scheduled at the end of your first year and may be repeated once if failed.

You have the option of completing the University Oral Qualifying Examination by the end of either the second year (Plan I) or the third year (Plan II). Advancement to candidacy is awarded after successful completion of this examination. If inadequacies are encountered, you may be required to repeat the examination, in which case Plan II becomes mandatory.

Plan I (passed within 24 months) includes the preparation and defense of a research proposal (the topic is the same as the research that you intend to use as your thesis work) and the demonstration of general knowledge of microbiology and immunology.

Plan II (passed within 36 months) includes the preparation and defense of a research proposal (the topic is in a different area and uses a different approach from that of your thesis project and research, but within the fields of interest in the department), an explanation of the research and results, and the demonstration of general knowledge of microbiology and immunology.

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 presented in the University-required format.

Final Oral Examination

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

M185. Immunology. (Same as Biology M185 and Microbiology M185.) Lecture, three hours; discussion, one hour. Prerequisites: Biology 8, Chemistry 23, 25. Recommended corequisite: Chemistry 152 or 156. Introduction to experimental immunobiology and immunochemistry; cellular and molecular aspects of humoral and cell immune reactions.
Mr. Clark, Mr. Sercarz (F)

M186. Experimental Design in Immunology. (Same as Biology M186 and Microbiology M186.) Laboratory, 12 hours. Prerequisites: course M185, consent of instructor. Corequisite: course M187. Emphasis on a limited number of situations designed to train the student in organizing and evaluating immunological laboratory experiments.
Mr. Clark, Mr. Sercarz (W)

M187. Immunology Seminar (2 units). (Same as Biology M187 and Microbiology M187.) Prerequisites: course M185, consent of instructor. Corequisite: course M186. Student presentation of selected papers from the immunology literature. Designed to serve as a forum for the critical analysis of research papers. Mr. Clark, Mr. Sercarz (W)

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, first weeks in September)

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 the fungi which cause human and animal diseases. Study of the morphology, biology, host-parasite relationship, public health problems, and control of protozoa, helminths, and arthropods parasitic in and on humans and animals. (F)

M206. Secretory and Gastrointestinal Immunity (2 units). (Same as Oral Biology M206.) Review of the anatomy and physiology of the oral cavity, the intestines, and the related lymphatic and blood vascular systems in reference to the immune system. The secretory and systemic immune systems, with particular emphasis on the unique properties of SIgA. Discussion in terms of recent experimental findings of the ability to process enteric antigens, to respond, and to regulate enteric immunity. The role that enteric immunity may play in diseases of the GI tract, such as dental caries and inflammatory bowel diseases. Students participate in discussions following each lecture and present seminars based on a review of the relevant scientific literature.
Mr. Riviere (Sp, alternate years)

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 an interest in any field of biology or chemistry. An overview of animal viruses, including viral structure, virus cell interaction, virus replication, and viral oncogenesis. Special emphasis on understanding the molecular mechanism involved in the 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). Prerequisites: course M185, Microbiology 101, C103A, C103B. Recommended: Microbiology 110 (consent of instructor may be obtained in special cases). A study of the morphology, physiology, and pathogenicity of fungi causing human and animal diseases.
Mr. Howard (Sp)

210L. Medical Mycology (2 units). Prerequisites: course M185, Microbiology 101, C103A, C103B. Recommended: Microbiology 110 (consent of instructor may be obtained in special cases). Laboratory application of principles discussed in course 210. Laboratory must be taken by undergraduate students. Mr. Howard (Sp)

212. Laboratory Procedures in Immunological Research (2 units). (Formerly numbered M212.) Prerequisites: course M185 or equivalent, consent of instructor. Limited to 25 students. A series of intensive laboratory workshops designed to acquaint students with the advanced methodologies utilized for immunological research. Workshops offered at regular intervals and last two to three days. Successful completion of four workshops constitutes the requirements for the course. May be repeated for credit with topic change. S/U grading. (F,W,Sp)

214. Bacterial Pathogenesis. Lecture, two hours. Prerequisites: course 202B and/or consent of instructor. A study of the genetic and biochemical properties of bacteria and factors of the host which are relevant to the pathogenesis of bacterial diseases. S/U or letter grading. Mr. Lovett, Mr. Miller (W)

M215. Interdepartmental Course in Tropical Medicine (2 units). (Same as Medicine M215, Pathology M215, and Pediatrics M215.) Prerequisites: basic courses in microbiology and parasitology of infectious diseases in the School of Medicine or Public Health. Course draws on expertise in the Departments of Medicine, Pediatrics, Pathology, and Microbiology and Immunology to present current knowledge about diseases prevalent in tropical areas of the world. Use of lectures, demonstrations, and audiovisual materials to describe diseases which are prevalent in or localized in certain geographic areas. Major emphasis on infectious diseases, with coverage of problems in nutrition and exotic noninfectious diseases. A syllabus supplements the topics covered in the classroom. S/U grading.
Mr. Turner (Sp, alternate years)

222. Membrane Behavior. (Formerly numbered M222.) Lecture, two hours; discussion, two hours. Prerequisite: consent of instructor. Description and relation of membrane structure and biogenesis to the function of membranes as both barriers to and mediators of normal and pathological biological responses. Development of general principles of membrane behavior from studies of simple and complex model systems. Mr. Bramhall

M223. Membrane Research Seminar (2 units). (Same as Microbiology M223.) Prerequisite: consent of instructor. Critical discussions of the current literature in membrane research, with emphasis on the relationship between structure and function in lipid bilayers. May be repeated for credit.
Mr. Bramhall, Ms. Wisnieski

250. Cell and Molecular Biology. Lectures and student seminar presentations. A review of selected current topics in molecular and cellular biology. Topics include recent experimental results on the organization, expression, and regulation of genes in eukaryotic cells. S/U or letter grading. Mr. Feldman (W)

251. Seminar in Microbiology and Immunology (2 units). Consideration of the history of infectious diseases, their host-parasite relationships, etiology, pathogenesis, epidemiology, diagnosis, and immunity. S/U or letter grading. Mr. Howard (W)

252. Seminar in Viral Pathogenesis (2 units). Prerequisites: course 201 and Microbiology 102, or equivalent, or consent of instructor. A consideration of basic phenomena involved in pathogenesis of viral disease, using carefully selected examples. Emphasis on those systems which have been meaningfully dissected by quantitative immunological and molecular biological methods. Mr. Stevens (F)

254. Immunogenetics (2 units). 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.
Ms. Scofield (Sp)

255. Seminar in Medical Mycology (2 units). Corequisite: course 210. Review of current and recent literature in the field of medical mycology, with emphasis on the host-parasite relationships in the human and animal mycoses. Students are expected to prepare reviews of selected subjects and to discuss contributions of various workers from the standpoint of experimental methods, results, their interpretation, and evaluation. S/U grading.
Mr. Howard (Sp)

M256. Seminar in Viral Oncology (2 units). (Same as Pathology M256.) An advanced research seminar designed to consider the current developments in the field. Selection of current subjects and publications dealing with tumor viruses, oncogenesis, development, and cellular regulation. Mr. Baluda

M258A. Molecular Genetics of the Immune System (2 units). (Same as Biology M250A and Microbiology M258A.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or 202A or equivalent or consent of instructor. Reading and discussion of current research articles on immunoglobulin I and II, oncogenes of the immune system, T cell antigen receptor, and loci affecting differentiation. S/U or letter grading.
Mr. Wall and the Staff (W, five weeks)

M258B. T and B Cell Function (2 units). (Same as Biology M250B and Microbiology M258B.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or 202A or equivalent or consent of instructor. Reading and discussion of current research articles on ontogeny, activation, and effector function of T and B cells. S/U or letter grading.
Mr. Bonavida and the Staff (W, five weeks)

M258C. Major Histocompatibility Complexes (2 units). (Same as Biology M250C and Microbiology M258C.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or 202A or consent of instructor. Reading and discussion of current research articles on the structure of human and murine MHC chromosomal regions and genes, MHC polymorphism, MHC-like systems, MHC-linked genes, MHC and disease, and nonimmune function of MHC. S/U or letter grading.
Mr. Clark, Ms. Scofield (Sp, five weeks)

M258D. Immunopathology (2 units). (Same as Biology M250D and Microbiology M258D.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or 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. Fahey, Mr. Porter (Sp, five weeks)

M258E. Immunoregulation (2 units). (Same as Biology M250E and Microbiology M258E.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or 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)

M258F. Immunochemistry (2 units). (Same as Biology M250F and Microbiology M258F.) Lecture, two hours; discussion, two hours. Prerequisite: course M185 or 202A or consent of instructor. Reading and discussion of current research articles on the immunochemistry of antibodies, antigens, and complement, antigenic recognition, antibody restriction. S/U or letter grading.
Mr. Schumaker, Ms. Wisnieski (F or Sp, five weeks)

M260. Immunology Forum (2 units). (Same as Microbiology M260.) Prerequisite: course M185. A broad range of current topics in immunology presented and discussed at an advanced frontier level. A continuing UCLA-wide, general graduate-level seminar involving faculty, postdoctoral immunologists, and graduate students from diverse departments. S/U or letter grading. Mr. Sercarz (F,W,Sp)

261. Tumor Immunology (2 units). Prerequisites: courses M258A, M258B, or equivalent. Experimental basis for investigation of immune response to tumors; review of cell-mediated immunity and related humoral immunity; evidence for tumor-associated antigens in man; evaluation of attempts at immunotherapy of tumors. S/U or letter grading.
Mr. Golub (Sp, alternate years)

262. Seminar in Immunobiology of Cancer (2 units). Prerequisite: consent of instructor. Review of recent literature in the fields of immunology, biology, and biochemistry of cancer, with emphasis on fundamental studies involving cell-mediated immunity, humoral response, tumor specific antigens, and new techniques. Reports on scientific meetings discussed and evaluated. S/U grading. Mr. Bonavida (W)

M263. Cellular Immunology Seminar (2 units). (Same as Microbiology M263.) Prerequisite: consent of instructor. Critical discussions of the current literature in T and B cell immunology, with emphasis on molecular mechanisms. Mr. Sercarz (F,W,Sp)

264. Molecular Microbiology and Cell Biology (2 units). Prerequisites: courses 202A, 202B, 202C, 202D, and 250, or consent of instructor. Discussion of selected current topics related to microbiology and cell biology, with special emphasis on an understanding of the basic phenomena at the molecular level. S/U grading. Mr. Wettstein (F)

270. Immunology in Disease (2 units). Lecture, one hour; discussion, one hour. Prerequisite: basic immunology. Introduction to the 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 the role of immunity in infection). Students prepare a 20- to 30-minute presentation on a selected topic. Mr. Fahey (W, alternate years)

271. Research Seminar in Virology (2 units). Prerequisite: consent of instructor. Selected topics in virology, including viral structures, host virus interaction, and regulation of viral and host gene expression, presented and discussed in depth. Mr. Nayak (Sp)

M282. Major Histocompatibility Complexes: Genetics, Biochemistry, and Biology (2 units). (Same as Biology M282.) Lecture, one hour; discussion, one hour. Prerequisites: course M185 or equivalent, genetics, biochemistry. Lectures and discussion of key papers underlying the present concepts of MHC structure and function. Emphasis on the murine MHC (H-2), but where appropriate and illustrative, the human MHC discussed. Mr. Clark (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 on 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. committee. 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 the graduate student with the advice of the 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

1-239 Reed Neurological Research Center, (213) 825-5647

Acting Chair
Robert W. Baloh, M.D.

Vice Chairs
Mark A. Goldberg, M.D., Ph.D., *in Residence (Harbor-UCLA)*
Christian Herrmann, Jr., M.D.
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 clinical examination of the normal nervous system; in the second year, neurological history taking and neurological examination of afflicted patients are stressed. The third year consists of a clerkship at an affiliated hospital, 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.*

Neuroscience
(Interdepartmental)

73-346 Center for the Health Sciences, (213) 825-8153

Professors
Larry L. Butcher, Ph.D. *(Psychology), Chair*
Carmine D. Clemente, Ph.D. *(Anatomy)*
Samuel Eiduson, Ph.D., *in Residence (Psychiatry and Biological Chemistry)*
Jerome Engel, M.D., Ph.D. *(Neurology)*
Joaquin M. Fuster, M.D. *(Psychiatry)*
Ronald M. Harper, Ph.D. *(Anatomy), Vice Chair*
Michael T. McGuire, M.D. *(Psychiatry)*
Richard W. Olsen, Ph.D. *(Pharmacology)*
Stephen Zamenhof, Ph.D., *Emeritus (Microbiology and Immunology)*

Associate Professors
Michael S. Letinsky, Ph.D. *(Physiology)*
Peter M. Narins, Ph.D. *(Biology)*

Scope and Objectives

Few research fields have greater potential and importance to mankind than neuroscience. The brain is responsible for every human thought, emotion, action, and accomplishment. It is a miraculous organ which orchestrates and paces human maturation; permits us to learn, remember, reason, and behave as we do; and coordinates the function of every other organ and structure in the body.

To understand this complex organ completely is, perhaps, an unapproachable objective since it is the principal organ responsible for mankind's evolution and is itself constantly evolving. Yet, basic questions relating to neural function and dysfunction are approachable, and the solutions to many human neurological and psychiatric disorders can be achieved only through brain research.

The interdisciplinary program of graduate training leading to the Ph.D. in Neuroscience utilizes facilities, resources, and activities of the Brain Research Institute and is administered by an interdepartmental degree committee.

Ph.D. Degree

Admission

All applicants must satisfy the University minimum requirements. In addition, Graduate Record Examination (GRE) or Medical College Admission Test (MCAT) scores are required. Recommended preparation includes mathematics through calculus and at least one year each of general chemistry, organic chemistry, physics, and basic biology. Three letters of recommendation are required.

Information regarding the program may be obtained by writing to the Neuroscience Office, 73-346 CHS, UCLA, Los Angeles, CA 90024.

Major Fields or Subdisciplines

Biobehavioral sciences; neuroanatomy; neurochemistry; neurocybernetics and communication; neuroendocrinology; neuroimmunology; neuropathology; neuropharmacology; neurophysiology.

Foreign Language Requirement

The program does not have a language requirement but does have a breadth requirement which can be satisfied in one of the following ways:

(1) Passing the Graduate School Foreign Language Test in one of the approved languages (French, German, or Russian) with a score of 500 or better. Any exceptions must be approved by the neuroscience committee.

(2) Completing an in-depth minor in an area related to your field. A minor is defined as at least eight units of study beyond the introductory level.

No student is advanced to candidacy who has not met this breadth requirement.

Course Requirements

Basic course requirements include Biology 171 (or Physiology 213, 214, or 215 with approval of the neuroscience committee), Biomathematics 170A, 210, Neuroscience M201A-M201B, M206A, M260B, M221A-M221B, 233, and electives and laboratory experience as determined in consultation with your adviser.

Substitutions to the basic requirements may be made, depending on your background, with consent of the graduate adviser. You are expected to complete the core courses within your first two years of study.

Teaching Experience

Teaching experience is not required for the degree. However, such experience is obtained by virtually all students in Neuroscience 233, which is required.

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, to locate and interpret literature, and to apply research problems.

After passing the written qualifying examination, you and your adviser select your doctoral committee to administer the University Oral Qualifying Examination, which is normally taken after the written qualifying examination and the breadth requirements have been completed.

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 optional with your doctoral committee.

Graduate Courses

200A-200B-200C. Clinical Concepts in the Neurosciences (2 units each). Information concerning neurological and psychiatric disorders for students from basic science backgrounds. S/U grading.
(Odd years)

M201A-M201B-M201C. The Functional Organization of Behavior (2 units each). (Same as Psychiatry M201A-M201B-M201C.) Prerequisite: consent of instructor. Course M201A is prerequisite to M201B, which is prerequisite to M201C. **M201A.** The development of behaviors within different species and the functional uses of behaviors; use of an evolutionary biological perspective as the framework. **M201B.** Research studies designed to take into account the functional behavior of animals. **M201C.** Special questions of interest to students.
Mr. McGuire, Mr. Woody (F,W,Sp)

M204. Structure and Function of the Limbic System (2 units). (Same as Neurology M204.) Prerequisite: consent of instructor. Current knowledge of the 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. The pathophysiology of limbic epilepsy, related to normal limbic system structure and functions. Mr. Babb

205. Brain-Behavioral Strategies for the Neurosciences (3 units). Prerequisite: consent of instructor. Emphasis on behavioral designs, methods, and instruments employed to test specific neurological afferent-efferent and integrative systems of the central nervous system. The programming of signals and incentives in arousal, habituation, classical conditioning, and operant conditioning paradigms discussed in terms of the neural challenges for the coping animal. Emphasis on behavioral methods, along with concurrent recording of neurophysiological data. Designed primarily to present practical behavioral techniques to neuroscience students.
Mr. McGuire, Mr. Woody

M206A. Neurosciences: The Introductory Course for Graduate Students (5 units). (Same as Anatomy M206A.) Lecture, four hours; laboratory/demonstrations, three hours. Prerequisites: a college-level course in biology or zoology, some familiarity with the subjects of electronics and electricity, consent of instructor. Introductory course on the principles of organization and function of the nervous system, intended for graduate students in relevant disciplines and as background for more advanced courses for students specializing in the neurosciences.
Mr. Decima, Mr. Scheibel, Mr. Segundo (W)

M206B. Neurosciences: The Intermediate Course for Graduate Students (7 units). (Same as Anatomy M206B.) Lecture, six hours; laboratory, two hours; tutorial contacts. Prerequisites: course M206A or 103A-103B, or equivalent, consent of instructor. Neuronal excitability and integration, sensory mechanisms, and motor control as related to behavior.
Mr. Decima, Mr. Scheibel, Mr. Segundo (Sp)

M216A-M216B-M216C. Functional Neuropsychology. (Same as Physiology M255A-M255B-M255C and Psychiatry M216A-M216B-M216C.) Seminar, three hours. Prerequisites: graduate standing, consent of instructor. The neurobiology of human infant speech and the neuropsychology of language memory. Topics include animal communication, phylogeny and ontogeny of language, cerebral processing of language and speech in normal and brain-damaged adults, and neural models of memory. S/U or letter grading. Ms. Buchwald (F), Mr. Halgren (Sp), Ms. Van Lancker (W)

M221A-M221B. Cellular and Molecular Neurochemistry. (Same as Anatomy M221A-M221B, Biological Chemistry M221A-M221B, Pharmacology M221A-M221B, and Psychiatry M221A-M221B.) Lecture, three hours. Prerequisites: Biological Chemistry 101A-101B-101C or equivalent. Contemporary neurochemistry for students with a general background in biochemistry. Relates the biochemical and structural properties of the nervous system to its development and functions and introduces students to disorders that result from alterations in the fundamental biochemistry of the nervous system. Although the subject is treated in an interdisciplinary manner, course progresses from structure through chemistry to function in precise manner and biological terms.
Mr. de Vellis, Mr. Eiduson, Mr. Olsen (W,Sp)

233. Seminar in Neuroscience (2 units). Topics of current importance presented for discussion. Subject matter to be announced. S/U grading.

M235. Gut and Brain Peptides (2 units). (Same as Anatomy M235 and Physiology 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, Mr. Reeve, Ms. Tache (W)

254. Interdisciplinary Research Seminar (2 units). Lectures and discussions on many different disciplinary approaches to knowledge of brain function in order to broaden the experience of students studying in fields other than that of the lecturer; new information in depth from students in fields closely related to the subject discussed. S/U grading.

256A-256B-256C. Survey of the Basic Neurological Sciences (2 units each). Summary information concerning methodologies utilized in different research approaches to brain study (e.g., neurophysiology, neuroendocrinology, brain ultrastructure, neuropharmacology, and others) and brief review of present state of knowledge available from each. For students with interest in interdisciplinary aspects of brain research. (Odd years)

259A-259B-259C. Neurophysiology of Behavior: The Fetus, Newborn, and Infant (2 units each). An integrated review of neuroanatomic, neurophysiologic, and behavioral development of human and animal fetuses and infants. Correlation of behavior with the development of the brain during this period of rapid change in both. Mr. Parmelee

M261. Neuronal Circuit Analysis (2 units). (Same as Anatomy M261.) Lecture/discussion, three hours. Prerequisites: courses M206A, M206B, or equivalent. A seminar with strong emphasis on specific reading assignments. An integrated view of neuronal circuit analysis at an advanced level; the layout and performance of a variety of basic neuronal circuits serving different control functions.
Mr. Schlag (W)

596. Directed Individual Study or Research (2 to 12 units). Prerequisite: consent of instructor.
Mr. Butcher

597. Preparation for Ph.D. Qualifying Examinations (2 to 12 units). Prerequisite: consent of instructor. Mr. Butcher

599. Dissertation Research for Ph.D. Candidates (4 to 12 units). Designed for students requiring special instruction or time to work on dissertation.
Mr. Butcher

Obstetrics and Gynecology

24-153 Center for the Health Sciences, (213) 825-5688

Chair
J. George Moore, M.D.

Vice Chairs
Richard A. Bashore, M.D. *(Administration)*
Ezra C. Davidson, M.D. *(King/Drew)*
William J. Dignam, M.D. *(UCLA Medical Center)*
John R. Marshall, M.D. *(Harbor-UCLA)*
Dominic Muzsnai, M.D. *(Olive View)*
Maclyn E. Wade, M.D. *(Cedars-Sinai)*

Scope and Objectives

The undergraduate program in obstetrics and gynecology is designed to teach students the the physiology of women in infancy, childhood, and adolescence, an understanding of reproductive endocrinology during the menstruating years, experience in the management of obstetric deliveries, and an understanding of the changes in the postmenopausal years. The program includes experience in the management of normal and pathological obstetrical conditions, the anatomical and physiological variants following childbirth, and gynecological abnormalities not necessarily related to reproduction.

Students work on the wards and in the outpatient clinics during the third year, with clinical experience continuing during the fourth year in the advanced clinical clerkship.

The graduate medical education program in obstetrics and gynecology includes a four-year course of instruction. Subspecialty units provide instruction in perinatal medicine, general gynecology, gynecologic oncology, reproductive endocrinology, and family planning and sex counseling.

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 Jules Stein Eye Institute, (213) 825-5051

Chair
Bradley R. Straatsma, M.D.

Vice Chairs
Robert E. Christensen, M.D.
Sherwin J. Isenberg, M.D. *(Harbor-UCLA)*

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 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 examine patients 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.*

Pathology

13-327 Center for the Health Sciences, (213) 206-6307

Professors
Marcel A. Baluda, Ph.D.
Luciano Barajas, M.D.
Pasquale A. Cancilla, M.D., *Chair*
Alistair J. Cochran, M.D., *in Residence*
Walter F. Coulson, M.D.
Robert Y. Foos, M.D.
Paul C. Fu, Ph.D., *in Residence*
Yao-Shi Fu, M.D.
Richard A. Gatti, M.D.
Hideo H. Itabashi, M.D., *in Residence*
Harrison Latta, M.D.
Juan Lechago, M.D., Ph.D., *in Residence*
Klaus J. Lewin, M.D., *Vice Chair*
Joseph M. Mirra, M.D.
Robert J. Morin, M.D., *in Residence*
Byron A. Myhre, M.D., Ph.D., *in Residence*
Donald E. Paglia, M.D.
David D. Porter, M.D.
Denis O. Rodgerson, Ph.D., *in Residence*
George S. Smith, M.D.
Julien L. Van Lancker, M.D.
M. Anthony Verity, M.D.
Roy L. Walford, M.D.
Luciano Zamboni, M.D., *in Residence, Vice Chair*
W. Jann Brown, M.D., *Emeritus*
William H. Carnes, M.D., *Emeritus*
Baldwin G. Lamson, M.D., *Emeritus*
M. Michael Lubran, M.D., Ph.D., *Emeritus*
Sidney C. Madden, M.D., *Emeritus*

Associate Professors
Judith A. Berliner, Ph.D., *in Residence*
Arthur H. Cohen, M.D., *in Residence*
Faramarz Naeim, M.D., *in Residence*
Shi-Kaung Peng, M.D., *in Residence*

Assistant Professors
Sanford H. Barsky, M.D.
Jonathan Braun, M.D.
Paul S. Dickman, M.D., *in Residence*
Thomas A. Drake, M.D., *in Residence*
Faye A. Eggerding, M.D., Ph.D.
Oliver Hankinson, Ph.D., *in Residence*
S. David Hudnall, M.D., *in Residence*
William Lewis, M.D.
James H. McBride, Ph.D., *in Residence*
Harry V. Vinters, M.D.

Adjunct Professors
Ruth Gussen, M.D.
Frank M. Hirose, M.D.

Adjunct Associate Professors
Peter J. Howanitz, M.D.
Roberta K. Nieberg, M.D.
Dorothy L. Rosenthal, M.D.
Nora C.J. Sun, M.D.

Adjunct Assistant Professors
Sunita M. Bhuta, M.D.
Camilla J. Cobb, M.D.
Richard H. Weindruch, 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 generally 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 are the same as those for the Ph.D., with the following exceptions:

(1) Only 30 units of the listed electives are required in addition to the core courses.

(2) You are also expected to enroll in a minimum of eight units of Pathology 599 each quarter, starting in the third year. These may not be applied toward the minimum course requirement for the degree.

(3) You must pass the written qualifying examination at the master's level. The University Oral Qualifying Examination acts as the comprehensive examination. 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) Aptitude Test scores and three letters of recommendation are required. There is no application form in addition to the one used by the Graduate Division. Because of the sequencing of classes, applicants are generally considered for admission to the Fall Quarter only. For departmental brochures, write to the Chair, Department of Pathology, 13-327 CHS, UCLA, Los Angeles, CA 90024.

Students intending to take advanced degrees in the Department of Pathology 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. A physical chemistry course requiring calculus, a course in molecular biology, and a course in histology are recommended and are 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

The following courses are required: Pathology 231A, M240, 242A, 242B, 244, 250A-250B-250C, 251, M293, and Biomathematics 170A. Three laboratory rotations must be taken to intelligently select a thesis adviser. In addition, if you are beginning the program with a bachelor's degree, you must select 40 units from remaining pathology courses and related biomedical areas of interest at the upper division or graduate level. Within these electives, you must take courses to obtain a basic knowledge of biochemistry and molecular biology. If you are entering the program with a master's degree or M.D., you may have fewer elective units to complete for the Ph.D.

Teaching Experience

You may assist for one or two quarters 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 the written examination, the University Oral Qualifying Examination is administered by the doctoral committee. This examination normally includes defense of the subject matter of your proposed dissertation topic. You are expected to have done preliminary work before the examination and to demonstrate a 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.

Graduate Courses

200A. Dental Pathology (3 units). Lecture, 90 minutes; laboratory, three hours. Prerequisite: consent of instructor. The fundamental causes of disease processes, using as examples selected lesions or diseases of major organ systems.
Mr. Foos and the Staff

M215. Interdepartmental Course in Tropical Medicine (2 units). (Same as Medicine M215, Microbiology and Immunology M215, and Pediatrics M215.) Prerequisites: basic courses in microbiology and parasitology of infectious diseases in the School of Medicine or Public Health. Course draws on expertise in the Departments of Medicine, Pediatrics, Pathology, and Microbiology and Immunology to present current knowledge about diseases prevalent in tropical areas of the world. Use of lectures, demonstrations, and audiovisual materials to describe diseases which are prevalent in or localized in certain geographic areas. Major emphasis on infectious diseases, with coverage of problems in nutrition and exotic noninfectious diseases. A syllabus supplements the topics covered in the 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 the area of general pathology. Ms. Eggerding 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 the area of general pathology. In Progress grading. Mr. Lewin and the Staff (W,Sp)

232. Topics in Vertebrate Neurobiology (2 units). An introduction to the cell biology of the vertebrate central nervous system, with special reference to its development, structure, and potential disease processes.

M240. Immunopathology (2 units). (Same as Medicine M240.) Prerequisites: immunology course, consent of instructor. Study of the role of immunologic phenomena in the production of lesions and disease. Topics include immuno complex disease, antitissues antibody, immunologic mediators, cell-mediated immunity, and infectious diseases.
Mr. Glassock, Mr. Porter

242A. Molecular Mechanisms in Disease (2 units). Prerequisites: course 231A, consent of instructor. A description of molecular events resulting from administration of injurious chemical and physical agents (u.v., X rays, carcinogens, toxins, etc.) and from reactions to injuries (e.g., necrosis, degeneration, hyperplasia, neoplasia, inflammation, etc.) and an interpretation of structural and functional disturbances in terms of the molecular alterations.
Mr. Van Lancker and the Staff

242B. Molecular Mechanisms in Disease (2 units). Prerequisites: course 242A, consent of instructor. A description of molecular events resulting from administration of injurious chemical and physical agents (u.v., X rays, carcinogens, toxins, etc.) and from reactions to injuries (e.g., necrosis, degeneration, hyperplasia, neoplasia, inflammation, etc.) and an interpretation of structural and functional disturbances in terms of molecular alterations.
Mr. Van Lancker and the Staff

244. Electron Microscopy in Experimental Pathology. Lecture, six hours; discussion, four hours. Ultrastructural aspects of pathology, including introduction to use of modern methods of electron microscopy in pathological studies, essentials of normal ultrastructure, and ultrastructural phenomena in general pathology. Ms. Berliner, Ms. Frank

245. Environmental Pathology. Prerequisites: graduate standing, consent of instructor. Designed to explore the interrelationships of man with his total environment. Presentation of a series of special topics to discuss the effect on man of changes in the compositions of air, water, soil, and other materials. S/U grading. Mr. O'Donnell and the Staff

250A-250B-250C. Pathology Graduate Student Seminar (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.

251. Pathology Graduate Student Laboratory Seminar (2 units). Prerequisite: consent of instructor. Consists of 10 two-hour seminars, conducted by Pathology Department staff and guest lecturers, which may include demonstrations of apparatus and methods dealing with new and advanced experimental techniques of value in experimental pathology. Subjects include the biochemistry, biological and morphological techniques in tissue fractionation, tissue culture, and radioautography (electron microscopy, etc.) that are frequently used in the study of disease mechanisms.
Mr. Hankinson, Mr. Rodgerson

253. Free Radical Pathology (2 units). Lecture, four and one-half hours. Prerequisites: basic biochemistry, physical chemistry. Free radicals, mechanisms of formation, properties, and reactions. Reactions with significant biomolecules. Modes of production *in vivo*. Reactions *in vivo*. Protection against and sensitization toward these damaging effects.
Mr. O'Donnell

M256. Seminar in Viral Oncology (2 units). (Same as Microbiology and Immunology M256.) An advanced research seminar designed to consider the 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 the 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). Ms. Berliner (Sp)

261A-261B-261C. Laboratory Rotation (2 units each). Laboratory, six hours. An introduction to research with individual instructors, laboratories.

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. Hankinson, Mr. Seeger (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 the purpose of supplementing programs available in the department. S/U grading.

597. Preparation for Qualifying Examinations (2 to 8 units). Prerequisite: one year of coursework in pathology. 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

22-401 Marion Davies Children's Center, (213) 206-6327

Executive Chair
William F. Friedman, M.D.

Executive Vice Chair
Solomon A. Kaplan, M.D.

Chairs
Delbert A. Fisher, M.D. *(Harbor-UCLA)*
David L. Rimoin, M.D., Ph.D. *(Cedars-Sinai)*
Robert J. Schlegel, M.D. *(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 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

23-278 Center for the Health Sciences, (213) 825-5596

Professors
Jorge R. Barrio, Ph.D.
Robert O. Bauer, M.D.
Arthur K. Cho, Ph.D., *Vice Chair*
Matthew E. Conolly, M.D.
Werner E. Flacke, M.D.
Daniel X. Freedman, M.D.
Robert George, Ph.D.
Mark A. Goldberg, M.D., Ph.D., *in Residence*
William L. Hewitt, M.D.
Louis J. Ignarro, Ph.D.
Murray E. Jarvik, M.D., Ph.D.
Donald J. Jenden, M.D., Ph.D. (h.c.), *Chair*
Peter Lomax, M.D., D.Sc.
Ronald Okun, M.D., *in Residence*
Richard W. Olsen, Ph.D.
Jeremy H. Thompson, M.D., F.R.C.P.I.
Dermot B. Taylor, M.D., *Emeritus*

Associate Professors
Don H. Catlin, M.D.
Bernard K-K. Fung, Ph.D., *in Residence*

Assistant Professors
Cameron B. Gundersen, Ph.D., *in Residence*
Sherrel G. Howard-Butcher, Ph.D.
R. Craig Kammerer, Ph.D.
Bjorn V. Ringdahl, Ph.D., *in Residence*

Lecturer
Joseph H. Beckerman, Pharm.D.

Adjunct and Visiting Professors
Il Jin Bak, Ph.D., D.D.S., *Adjunct*
Yi-Han Chang, Ph.D., *Adjunct*
Roger W. Russell, Ph.D., *Visiting*

Adjunct Associate Professors
M. David Fairchild, Ph.D.
Larry A. Wheeler, Ph.D.

Scope and Objectives

The Department of Pharmacology offers instruction for undergraduate, graduate, and medical students. It includes a systematic treatment 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.

In suitable cases, students who have course deficiencies may be admitted to graduate standing, but any deficiencies must be removed within a specified time. Graduate Record Examination (GRE) scores, Test of English as a Foreign Language (TOEFL) scores for international students, and three letters of recommendation are required.

Prospective students may write for a departmental brochure to the Graduate Student Office, Department of Pharmacology, 23-250 CHS, UCLA, Los Angeles, CA 90024.

Major Fields or Subdisciplines

Cardiovascular pharmacology; chemical pharmacology; clinical pharmacology; immunopharmacology; neuroendocrine pharmacology; neuropharmacology; psychopharmacology.

Course Requirements

Required: Pharmacology 200 (three quarters), 201A-201B, 202, 212A-212B, 234A-234B-234C, 237A-237B-237C, 241, 251 (must be taken every quarter), 291 (three quarters or alternative courses); Biological Chemistry 101A-101B-101C, or 101C and 201A-201B; Physiology 101, 102, 103A-103B (Anatomy 103A-103B); one course in biostatistics.

All coursework should be completed by the end of the sixth quarter 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 quarters 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 quarter. 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, 7, Chemistry 21, 23, 25, or equivalent. An introduction to pharmacology for undergraduate students, emphasizing the principles underlying the mechanism of action of drugs, their development, control, rational use, and misuse. Mr. Jenden (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 appropriate training of each student. (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 the end of each quarter students submit to their supervisor a report covering the research performed. Pharmacology graduate students must take this course three times during their first two years in residence. (F,W,Sp)

201A-201B. Principles of Pharmacology (4 units, 2 units). (Formerly numbered 201.) Prerequisites: mammalian physiology, biochemistry. A systematic consideration of the principles governing the interaction between drugs and biological systems and of the principal groups of drugs used in therapeutics. Particular attention to the modes of action, pharmacokinetics, and disposition to provide a scientific basis for their rational use in medicine.
Mr. Ignarro in charge (F,W)

202. Clinical Pharmacology (2 units). (Formerly numbered 202A-202B.) Prerequisites: courses 201A-201B. A series of lectures and case presentations designed to illustrate the principles of pharmacology in a clinical context, and the solution of practical therapeutics by reference to pharmacokinetics, mechanisms of action, and disposition of drugs.
Mr. Catlin in charge (Sp)

212A-212B. Graduate Commentary: Clinical Pharmacology (2 units each). Prerequisites: mammalian physiology, biochemistry. A supplementation of topics covered in course 202. Primarily for graduate students. Mr. Catlin

M221A-M221B. Cellular and Molecular Neurochemistry. (Same as Anatomy M221A-M221B, Biological Chemistry M221A-M221B, Neuroscience M221A-M221B, and Psychiatry M221A-M221B.) Lecture, three hours. Prerequisites: Biological Chemistry 101A-101B-101C or equivalent. Contemporary neurochemistry for students with a general background in biochemistry. Relates the biochemical and structural properties of the nervous system to its development and functions and introduces students to disorders that result from alterations in the fundamental biochemistry of the nervous system. Although the subject is treated in an interdisciplinary manner, course progresses from structure through chemistry to function in precise manner and biological terms.
Mr. de Vellis, Mr. Eiduson, Mr. Olsen (W,Sp)

234A-234B-234C. Experimental Methods in Pharmacology (2 units each). Prerequisite: consent of instructor. A survey of experimental methods and instrumentation used in the analysis, identification, and study of mechanisms of action of pharmacologically active compounds.
Mr. Chang, Mr. George, Mr. Kammerer (F,W,Sp)

236. Neuropharmacology. Prerequisite: neurophysiology. Advanced neuropharmacology, including actions and modes of action of drugs acting on the central nervous system, interactions between drugs and nervous tissue, movements of drugs through the blood brain barrier, and distribution to the central nervous system; problems of central transmission.
Mr. George (W)

237A-237B-237C. Neurotransmission. (Formerly numbered 237.) Prerequisites: course 241, consent of instructor. A detailed examination of neurochemical transmission, dealing in particular with the cholinergic and adrenergic transmission mechanisms and pharmacological agents that affect them. Critical examination of the evidence for mechanisms involving other possible transmitters.
Mr. Cho, Mr. George, Mr. Gundersen, 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 the 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 the state of present knowledge, and to application of the knowledge in regulating risks of both prenatal and postnatal exposure. Particular emphasis on the relevance of this knowledge to human behavior. Mr. Russell (Sp)

M239. Psychopharmacology. (Same as Psychiatry M239.) Prerequisite: consent of instructor. A presentation of the effects of drugs on behavior, with special attention to drugs used in psychiatry and drug seeking behavior. Physiological and biochemical mechanisms underlying such actions. Reports on relevant current research. Mr. Jarvik

241. Introduction to Chemical Pharmacology. Prerequisite: organic and biological chemistry. Introduction to general principles of pharmacology. The role of chemical properties of drugs in their distribution, metabolism, and excretion. Mr. Cho (F)

251. Seminar in Pharmacology (2 units). Seminars presented by students, faculty, and guest lecturers on a variety of topics. S/U grading.
Mr. Gundersen (F,W,Sp)

253. Seminar in Environmental Toxicology (2 units). Prerequisite: consent of instructor. Oral reports and discussions of current research on chemical pollutants in the environment, their effects on biological systems, and the mechanism of these effects.
Mr. Jenden (F,W,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 the 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). Ms. Berliner (Sp)

261. Introduction to Clinical Pharmacology (2 units). Prerequisite: consent of instructor. Lectures, case presentations, and discussions designed to acquaint graduate students with the 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

53-170 Center for the Health Sciences, (213) 825-6717

Professors

Francisco J. Bezanilla, Ph.D.
Allan J. Brady, Ph.D.
Jennifer S. Buchwald, Ph.D., *Vice Chair*
Michael H. Chase, Ph.D., *in Residence*
Sergio Ciani, Ph.D.
Jared M. Diamond, Ph.D.
George Eisenman, M.D.
Alan D. Grinnell, Ph.D.
Susumu Hagiwara, M.D., Ph.D. *(Eleanor I. Leslie Professor of Neuroscience)*
Earl Homsher, Ph.D.
Douglas Junge, Ph.D.
Yoshiaki Kidokoro, M.D., Ph.D., *in Residence*
Glenn A. Langer, M.D. *(Castera Professor of Cardiology)*
Wilfried F.H.M. Mommaerts, Ph.D., *Chair*
Arthur Peskoff, Ph.D. *(Biomathematics)*
Paul Quinton, Ph.D.
Gordon Ross, M.D.
Eduardo H. Rubinstein, M.D., Ph.D.
George Sachs, D.Sc. *(Leon J. Tiber, M.D. and David S. Alpert, M.D. Professor of Medicine)*
Maria W. Seraydarian, Ph.D. *(Nursing)*
Ralph R. Sonnenschein, M.D., Ph.D.
John McD. Tormey, M.D.
Julio Vergara, Ph.D.
Bernice M. Wenzel, Ph.D.
Brian Whipp, Ph.D.
Ernest M. Wright, D.Sc.
Mary A.B. Brazier, D.Sc., *Emeritus, in Residence*
Donald B. Lindsley, Ph.D., *Emeritus*

Associate Professors

Joy Frank, Ph.D., *in Residence*
Richard Horn, Ph.D., *in Residence*
Sally Krasne, Ph.D.
Michael S. Letinsky, Ph.D.
Kenneth D. Philipson, Ph.D., *in Residence*

Lecturer

Jessie O. Washington, D.V.M.

Adjunct Associate Professor

Oscar U. Scremin, M.D.

Adjunct Assistant Professor

Kenneth S. Leonards, Ph.D.

Scope and Objectives

Physiology is the science of the functional activities of the human body. This covers a wide range, on the one hand involving observations on human organisms and patients, on the other hand 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 (equivalent to Mathematics 31A, 31B, 33A); physics (12 quarter units); chemistry (16 quarter units, including quantitative analysis, physical and organic chemistry); biology or zoology (16 quarter units, including comparative vertebrate anatomy).

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 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. Students may also be admitted on the recommendation and sponsorship of staff members subject to admission committee approval.

The Graduate Record Examination (GRE) Aptitude Test is required as well as the Advanced 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, 53-170 CHS, UCLA, Los Angeles, CA 90024.

Major Fields or Subdisciplines

Cellular electrophysiology; membrane transport; excitation, contraction, energetics, and protein chemistry of muscle; fundamental neurophysiology; cardiovascular, respiratory, and gastrointestinal physiology.

Course Requirements

The graduate training program consists of a core requirement (Biology 171, Physiology 101, 102, 205) which must be completed within your first two years of study. A second series of at least three courses applicable to your research interest(s) and one advanced course in physiology outside your major area of interest are also required. Your curriculum must be approved by the graduate committee and your faculty adviser. One laboratory rotation is required within the first two years, prior to taking the written comprehensive examination.

Qualifying Examinations

The written comprehensive examination is given at the end of your formal coursework (core curriculum and specialty courses); it also contains at least one oral section covering your area of specialization. Recommendations following the examination are based on the total and specific areas of competence revealed by the examination, performance in coursework during the year, and recommendations of staff with whom you have had close association. Marginal performance in all areas with excellence in none is not considered acceptable.

Following successful completion of the departmental comprehensive examination, you must *select a sponsor who acts as chair of your doc*toral committee and directs your thesis research project. The committee members conduct the University Oral Qualifying Examination to establish that you are capable of conducting a productive research project. At this point in your training, you normally will have completed all formal coursework, will have passed the departmental comprehensive examination, and will have devoted approximately a year to a research project. After successful completion of the oral qualifying examination, you are advanced to candidacy.

Final Oral Examination

The final oral examination is optional with the doctoral committee.

Upper Division Courses

100. Elements of Human Physiology (6 units). Prerequisite: dental student standing or consent of instructor. Required of first-year dental students. Lectures, laboratories, and demonstration/discussions concerning functional activities of the living body in terms of both cellular and systemic functions. Examples presented, where possible, on the basis of information relevant to oral function.

Mr. Homsher and the Staff (F)

101. Neuromuscular and Cardiovascular Physiology (7 units). Prerequisites: basic courses in chemistry, physics, and biology, at least one year each; organic chemistry; histology; gross anatomy, human or comparative. Primarily for first-year medical students, but open to other students with consent of instructor. Lectures, laboratory, and conferences. An analysis of the electrical properties of muscle and nerve, the contractility of muscle and the heart, and the cardiovascular system and its regulation.
Ms. Wenzel (W)

102. Renal, Respiratory, and Gastrointestinal Physiology (6 units). Prerequisites: same as for course 101. Primarily for first-year medical students, but open to other students with consent of instructor. Lectures, laboratory, and conferences. A continuation of course 101, dealing with respiration, and the distribution of water, electrolytes, and metabolites by the renal and gastrointestinal systems, and the special physiology of certain organs.
Mr. Tormey, Ms. Wenzel (Sp)

103A-103B. Basic Neurology (1 unit, 3 units). Lecture/laboratory, one four-hour and two one-hour sessions (Winter — last six weeks); one two-hour, one three-hour, and two one-hour sessions (Spring). Prerequisite: medical student standing or consent of instructor. Corequisites: Anatomy 103A-103B. Lectures, conferences, demonstrations, and laboratory procedures necessary for an understanding of the functions of the human nervous system. In Progress grading. Mr. Chase and the Staff (W,Sp)

M105. Human Physiology. (Formerly numbered 105N.) (Same as Nursing 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 the human body. Ms. Seraydarian

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 appropriate training of each student.

Graduate Courses

200. Transport across Biological Membranes. Prerequisite: consent of instructor. An in-depth study of transport ions, nonelectrolytes, and water across plasma membranes of single cells and epithelia. Lectures include such topics as membrane structure, the passive permeability of membranes to ions and nonelectrolytes, active transport of sugars and amino acids, active ion transport, and the mechanisms of water transport. Experimental work involves the transport of ions across single cell membranes and epithelia using radioactive tracer and electrophysiological techniques. Mr. Wright

202. Permeability of Biological Membranes to Ions (6 units). Prerequisites: Chemistry 110A, 110B, or equivalent, consent of instructor. Topics include ion permeation mechanisms, ion distribution, and physical basis of ion discrimination across cell membranes. Mr. Diamond

M203. Oral Physiology. (Same as Oral Biology M205.) Lecture, one hour; discussion, one hour. The organ-level and cellular physiology of the following systems, discussed in a somewhat flexible framework: (1) salivary glands, including the mechanisms of secretion, abnormalities such as Mikulicz-Sjorgren syndrome, and effects on the dentition; (2) dental pulp: development, normal physiology, and reparative mechanisms; (3) organization of sensory systems, receptors, pathways, and central projections; (4) dentinal pain mechanisms, hydrodynamic theory, and electrical recordings from dentin; (5) taste receptors: mechanisms of perception of four basic tastes, alterations of taste caused by drugs, diseases, and aging; (6) oral touch and temperature receptors: comparison with similar systems in the skin, assessment of sensory dysfunction; (7) speech: phonation, resonance, and articulation in speech production, normal time-course of development of various sounds in children. Classes supplemented with audiovisual materials and many references from the literature. Mr. Junge (F)

205. Physical Chemistry of Membranes and Cellular Systems. Prerequisite: consent of instructor. A mathematical and physical background for understanding current approaches in cellular electro-physiology and transport across membranes. Ordinary differential equations, functions of many variables, Fourier series, and integrals. The principle of equilibrium and nonequilibrium thermodynamics, the basic concepts of electrostatics and their application to physical-chemical problems typically encountered in the study of membrane transport (e.g., osmotic pressure, Gibbs-Donnan equilibrium, surface potential, solvent-solute coupling in transmembrane fluxes, integration of the Nernst-Planck equation and of the time-dependent diffusion equation, etc.).
Mr. Ciani

207. Neurophysiology. Prerequisite: consent of instructor. Seminar and laboratory course designed to acquaint students with behavioral techniques and concepts relevant to research problems encountered in modern neurophysiology, and to consider means of integrating them with neurophysiological methods.
Ms. Wengel

212A-212B-212C. Critical Topics in Physiology (1 to 8 units each). Prerequisite: consent of instructor. Advanced treatment of critical topics in physiology by staff and guest lecturers for graduate and postdoctoral students in the biomedical sciences.

213. Methods in Cell Physiology (6 units). Prerequisite: consent of instructor. Lectures and laboratory dealing with the integrated circuits and other solid-state devices employed in modern instruments, so that students learn to design and build many of the simpler circuits often required in their research. Emphasis on the particular circuits used in electrophysiology, RC analysis, and an introduction to cable theory. Mr. Bezanilla, Mr. Vergara (F)

214. Cell Physiology: Excitability (2 to 8 units). Prerequisites: course 213, consent of instructor. General properties of excitable cells, linear cable properties, nonlinear conductance changes, and the generation and propagation of the nerve impulse. Voltage gating and gating currents, as well as the relationship between macroscopic conductance and single channel properties. Mr. Bezanilla (W)

215. Cell Physiology: Cellular Interaction (4 to 8 units). Prerequisites: courses 213, 214, consent of instructor. Synaptic transmission mechanisms and potential generation in the special senses receptors. (Sp)

216. Cellular Electrophysiology (6 units). Prerequisites: basic knowledge of the physics of electricity, integral and differential calculus, and biology (equivalent to Biology 5), consent of instructor. Basic concepts of membrane structure, passive cable properties, nonlinear properties of excitation and conduction, and biophysics of transport phenomena, presented in semiquantitative terms. Rigorous in-depth coverage offered in course 213.

217A. Ion-Permeable Channels in Cell Membranes. Prerequisites: physical chemistry, consent of instructor. The properties of ion-permeable channels in cell membranes, including a survey of the types of ion-permeable channels found in membranes, analysis of the permeability and selectivity of channels, voltage and chemical regulation of ion-permeable channels, and single channel properties.
Mr. Ciani, Mr. Hagiwara, Mr. Horn, Ms. Krasne

217B. Transport Systems in Cell Membranes. Prerequisite: consent of instructor. Properties of pumps and carriers in cell membranes. Topics include nonelectrolyte (sugar, amino acid, carboxylic acids) and ion (Na, K, H, and Ca) transport across plasma membranes of single cells and epithelia.
Mr. Sachs, Mr. Wright

217C. Cellular Neurophysiology. (Formerly numbered 217B.) Prerequisite: course 213 or 216 or consent of instructor. Structure and function of synaptic transmission, neurotransmitters, excitation/inhibition special sensory receptors.

218A. Integrative Neurophysiology. Prerequisite: course 217C or consent of instructor. Structure and function of CNS neurons, structure and function of visual, cerebellum, and other CNS systems. Structure and function of autonomic nervous system.

218B. Physiology of Muscle. Prerequisite: course 216 or consent of instructor. Ultrastructure of muscle. Excitation, excitation-contraction coupling, calcium regulation of contraction, myofilament interactions, energetics mechanics, and chemical kinetics of contraction in vertebrate muscle.

221A-221B-221C. Concepts of Excitation and Contraction in Muscle (2 to 6 units each). Prerequisite: consent of instructor. In-depth study of muscle physiology, with material derived from a critical review of classical and recently published research papers. Content varies according to the special interests of the students. Mr. Brady

222. Graduate Commentary: Renal, Respiratory, and Gastrointestinal Physiology (2 units). Prerequisite: course 101. An advanced supplementation for graduate students of the topics presented in course 102.

223. Graduate Commentary: Physiology of the Nervous System (2 units). Prerequisites: basic courses in chemistry, physics, and biology, at least one year each; organic chemistry; histology; gross anatomy, human or comparative; consent of instructor. An advanced supplementation for graduate students of the topics presented in basic neurology.
Ms. Buchwald

225. Ionic Selectivity: The Role of Kinetic and Equilibrium Processes in Ion Permeation through Channels (2 to 4 units). Lecture, two hours; reading period, 10 hours. Prerequisites: course 217A (unless waived), consent of instructor. Coverage of the "state of the art" for characterizing the molecular details of ion permeation in model peptide channels (e.g., gramicidin) and biological channels (e.g., acetylcholine receptor channel, K channel, and Na channel), particularly as these can be inferred from electrical measurements. Molecular aspects of ion permeation.
Mr. Eisenman

227. Theoretical Problems in Membrane Permeation (2 units). Prerequisite: consent of instructor. Tutorial directed to specific theoretical problems of interest to the students. Mr. Ciani

228. Epithelia: Structure and Function (2 units). Prerequisite: consent of instructor. Lectures and seminars on the physiology of epithelia cells, with particular emphasis on membrane transport. S/U grading. Mr. Wright (W)

229. Research Topics in Neurobiology (2 units). Prerequisite: consent of instructor. Discussion of current literature covering research problems in neurobiology. S/U or letter grading. Mr. Letinsky

230A-230B-230C. Selected Topics in Organ Physiology (2 to 8 units each). Prerequisite: consent of instructor. Macroscopic, microscopic, and ultrastructural correlates of tissue and organ function. Advanced consideration of special topics in the physiology of the cardiovascular and gastrointestinal systems, as well as the respiratory, renal, and central nervous systems. Mr. Brady and the Staff

231A-231B-231C. Cardiovascular and Respiratory Physiology (2 to 6 units each). Prerequisite: consent of instructor. In-depth study of the cardiovascular and respiratory systems. **231A.** Respiratory mechanisms and control. **231B-231C.** The function and control of the cardiovascular system and its relation to the mechanics of respiration and cellular gas exchange. Critical reviews and discussion of selected articles in journals.

M235. Gut and Brain Peptides (2 units). (Same as Anatomy M235 and Neuroscience 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, Mr. Reeve, Ms. Tache (W)

245. Stochastic Analysis of Channel Gating. Prerequisite: consent of instructor. Review of probability theory; combinatorial analysis; introduction to theory of stochastic processes; renewal theory; discrete- and continuous-time Markov processes; analysis of kinetic models of channel gating; applications for single channel and "noise" measurements. S/U or letter grading. Mr. Horn

246. Current Topics in Single Channel Recording. Lecture, three hours. Prerequisite: consent of instructor. Discussion of current literature involving the use of single channel recording. Gating and ion permeation mechanisms in single channels and recent technical developments in the method. S/U grading. Mr. Horn (Sp)

250A-250B-250C. Techniques in Biological Research (1 unit each). Discussion of techniques of interest to students in the biological sciences. S/U grading.

251A-251B-251C. Seminar in Physiology (1 unit each). Prerequisite: consent of instructor. Review and discussion of current physiological literature, research in progress, and special topics. S/U grading.

M252A-M252B. Seminar in Behavioral Biology. (Same as Anthropology M228A-M228B, Biology M252A-M252B, Education M229A-M229B, Psychiatry M291A-M291B, and Psychology M230A-M230B.) Discussion, six hours. Prerequisite: consent of instructor. Basic seminar for graduates interested in behavioral biology. An interdisciplinary course dealing with behavioral research in anthropology, biology, psychology, and the medical sciences. Proximate causation, development, and evolution in animal behavior. Physiology and the organization of behavior. Vertebrate social organization. Animal communication. The application of natural selection theory to human social behavior. In Progress grading.

253A-253B-253C. Current Topics in Neurobiology and Biophysics (2 units each). Lecture, one hour; discussion, one hour. Prerequisite: consent of instructor. Weekly lectures by members of the faculty and visiting scientists, followed by scheduled discussion periods for students. All aspects of cellular neurobiology, with emphasis on quantitative and biophysical approaches. Most talks deal with original research, placed in the context of overall developments in the field. Some talks are reviews of recent interesting literature, with posted references for student preparation. S/U grading.

M255A-M255B-M255C. Functional Neuropsychology. (Same as Neuroscience M216A-M216B-M216C and Psychiatry M216A-M216B-M216C.) Seminar, three hours. Prerequisites: graduate standing, consent of instructor. The neurobiology of human infant speech and the neuropsychology of language memory. Topics include animal communication, phylogeny and ontogeny of language, cerebral processing of language and speech in normal and brain-damaged adults, and neural models of memory. S/U or letter grading. Ms. Buchwald (F), Mr. Halgren (Sp), Ms. Van Lancker (W)

260. The Use of Laboratory Animals in Research. Prerequisite: consent of instructor. An introductory course for graduate students in the medical and biological sciences, covering principles and practical problems in the handling and use of common laboratory animal species. Mr. Washington

297. Developmental Neurobiology. Lecture, two hours; discussion, two hours. Prerequisites: Biology 171 or equivalent, consent of instructor. Processes governing the production and differentiation of neurones, synaptogenesis, and specificity and plasticity in neuronal and nerve-muscle connections. Mr. Arnold, Mr. Grinnell

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

B7-349 NPI&H, (213) 825-0770

Professors

Ransom J. Arthur, M.D., *in Residence, Vice Chair*
D. Frank Benson, M.D.
Nicholas G. Blurton Jones, D.Phil. *(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*
Ching-piao Chien, M.D., *in Residence*
Kenneth M. Colby, M.D.
Barbara F. Crandall, M.D., *in Residence*
Jean S. de Vellis, Ph.D., *in Residence (Biobehavioral Sciences)*
Wilfred J. Dixon, Ph.D. *(Biobehavioral Sciences)*
Robert B. Edgerton, Ph.D., *in Residence (Biobehavioral Sciences)*
Samuel Eiduson, Ph.D., *in Residence (Biobehavioral Sciences)*
Javier I. Escobar, M.D., *in Residence*
Barbara Fish, M.D.
Arvan L. Fluharty, Ph.D., *in Residence (Biobehavioral Sciences)*
Charles V. Ford, M.D., *in Residence, Vice Chair*
Steven R. Forness, Ed.D., *in Residence (Biobehavioral Sciences)*
Daniel X. Freedman, M.D. *(Judson Braun Professor of Biological Psychiatry), Executive Vice Chair*
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Gary C. Galbraith, Ph.D., *in Residence (Medical Psychology)*
Ronald G. Gallimore, Ph.D., *in Residence (Biobehavioral Sciences)*
John Garcia, Ph.D. *(Biobehavioral Sciences)*
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John Hanley, M.D., *in Residence*
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Frank M. Hewett, Ph.D. *(Biobehavioral Sciences)*
Chester D. Hull, Ph.D., *in Residence (Biobehavioral Sciences)*
Lissy F. Jarvik, Ph.D., M.D.
Murray E. Jarvik, M.D., Ph.D.
Joseph R. Jedrychowski, D.D.S. *(Biobehavioral Sciences)*
Harry J. Jerison, Ph.D., *in Residence (Biobehavioral Sciences)*
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David S. Maxwell, Ph.D. *(Biobehavioral Sciences)*
Philip R. A. May, M.D. *(Della Martin Professor of Psychiatry)*
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Ivan N. Mensh, Ph.D. *(Medical Psychology)*
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Kazuo Nihira, Ph.D., *in Residence (Medical Psychology)*
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Edward M. Ornitz, M.D., *in Residence*
Alfonso Paredes, M.D., *in Residence*
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Paul Satz, Ph.D., *in Residence (Neuropsychology)*
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George F. Solomon, M.D., *in Residence*
S. Stefan Soltysik, M.D., Ph.D., *in Residence (Neurophysiology)*
Robert S. Sparkes, M.D.
M. Anne Spence, Ph.D., *in Residence (Biobehavioral Sciences)*
Maurice B. Sterman, Ph.D., *in Residence (Biobehavioral Sciences)*
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George Tarjan, M.D.
Claudewell S. Thomas, M.D., *in Residence*
Bernard Towers, M.D.
J. Thomas Ungerleider, M.D., *in Residence*
Jaime R. Villablanca, M.D., *in Residence (Neurophysiology)*
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Thomas S. Weisner, Ph.D., *in Residence (Biobehavioral Sciences)*
Bernice M. Wenzel, Ph.D. *(Biobehavioral Sciences)*
Louis Jolyon West, M.D., *Chair*
Charles D. Woody, M.D., *in Residence (Biobehavioral Sciences)*
Joel Yager, M.D., *in Residence*
Joe Yamamoto, M.D., *in Residence*
Arthur Yuwiler, Ph.D., *in Residence (Biobehavioral Sciences)*

Emeritus Professors

T. George Bidder, M.D.
Norman Q. Brill, M.D.
W. Jann Brown, M.D.
Milton Greenblatt, M.D., *Vice Chair*
Horace W. Magoun, Ph.D.
George J. Popjak, M.D.
Fredrick C. Redlich, M.D.
Frank F. Tallman, M.D.
Richard D. Walter, M.D.
Henry H. Work, M.D.

Associate Professors

Anthony M. Adinolfi, Ph.D. *(Biobehavioral Sciences)*
Robert F. Asarnow, Ph.D., *in Residence (Medical Psychology)*
Fawzy I. Fawzy, M.D., *in Residence*
Frederick D. Frankel, Ph.D., *in Residence (Medical Psychology)*
Betty Jo Freeman, Ph.D., *in Residence (Medical Psychology)*
Eric Halgren, Ph.D., *in Residence, (Medical Psychology)*
Susan E. Hodge, Ph.D., *in Residence (Biobehavioral Sciences)*
Kay R. Jamison, Ph.D., *in Residence (Medical Psychology)*
Keith T. Kernan, Ph.D., *in Residence (Biobehavioral Sciences)*

Stephen R. Marder, M.D., *in Residence*
Keith H. Neuchterlein, Ph.D., *in Residence (Medical Psychology)*
Gloria J. Powell, M.D., *in Residence*
Andrew T. Russell, M.D., *in Residence*
Walid O. Shekim, M.D., *in Residence*
Jerome M. Siegel, Ph.D., *in Residence (Biobehavioral Sciences)*
Marian D. Sigman, Ph.D., *in Residence (Medical Psychology)*
Michael A. Strober, Ph.D., *in Residence (Medical Psychology)*
Alexander J. Tymchuk, Ph.D., *in Residence (Medical Psychology)*
David K. Wellisch, Ph.D., *in Residence (Medical Psychology)*
Gail E. Wyatt, Ph.D., *in Residence (Medical Psychology)*
Edward Geller, Ph.D., *Emeritus*

Assistant Professors

Joan R. Asarnow, Ph.D., *in Residence (Medical Psychology)*
Lewis R. Baxter, M.D., *in Residence*
Kirk J. Brower, M.D., *in Residence*
Carole H. Browner, Ph.D., *in Residence (Biobehavioral Sciences)*
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Spencer Eth, M.D., *in Residence*
Thomas R. Garrick, M.D., *in Residence*
Mahesh Goklaney, M.B., *in Residence*
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Neil Hartman, M.D., *in Residence*
Sherrel G. Howard, Ph.D. *(Biobehavioral Sciences)*
Nancy C. Hubert, Ph.D., *in Residence (Medical Psychology)*
Asenath A. LaRue, Ph.D., *in Residence (Medical Psychology)*
Keh-Ming Lin, M.D., *in Residence*
Wendy B. Macklin, Ph.D., *in Residence (Biobehavioral Sciences)*
Barnet D. Malin, M.D., *in Residence*
David J. Martin, Ph.D., *in Residence (Medical Psychology)*
Ricardo P. Mendoza, M.D., *in Residence*
Martin E. Mueller, M.D., *in Residence*
Rama K. Nadella, M.D., *in Residence*
Robert E. Neshkes, M.D., *in Residence*
Charles E. Olmstead, Ph.D., *in Residence (Physiological Psychology)*
George G. Paz, M.D., *in Residence*
Robert S. Pynoos, M.D., *in Residence*
Stephen L. Read, M.D., *in Residence*
Glenn W. Schwarcz, M.D., *in Residence*
Esther Sinclair, Ph.D., *in Residence (Biobehavioral Sciences)*
Gary W. Small, M.D., *in Residence*
James E. Spar, M.D., *in Residence*
Gordon D. Strauss, M.D., *in Residence*
Kenneth B. Wells, M.D., *in Residence*
Deane L. Wolcott, M.D., *in Residence*

Adjunct Professors

Jambur V. Ananth, M.D.
Annette M. Brodsky, Ph.D. *(Medical Psychology)*
Robert H. Coombs, Ph.D. *(Biobehavioral Sciences)*
Norman Cousins, B.A. *(Medical Humanities)*
Joseph W. Cullen, Ph.D. *(Biobehavioral Sciences)*
John R. Elpers, M.D.
Calvin J. Frederick, Ph.D. *(Medical Psychology)*
Irene T. Goldenberg, Ed.D. *(Medical Psychology)*
Roderic Gorney, M.D.
Frederick Gottlieb, M.D.
Saul I. Harrison, M.D.
Christoph M. Heinicke, Ph.D. *(Medical Psychology)*
Jean C. Holroyd, Ph.D. *(Medical Psychology)*
Hayato Kihara, Ph.D. *(Biobehavioral Sciences)*
Melvin R. Lansky, M.D.
Edward H. Liston, M.D.
Judd Marmor, M.D.
James G. Miller, M.D., Ph.D.
Armando Morales, D.S.W. *(Social Work)*
Michel Philippart, M.D.
Kiki V. Roe, Ph.D. *(Medical Psychology)*
Donald A. Schwartz, M.D.
Iradj Siassi, M.D.
Paul F. Slawson, M.D.
Manuel Straker, M.D.
Theodore Van Putten, M.D.
Dora B. Weiner, Ph.D. *(Medical Humanities)*

Adjunct Associate Professors

Christiane A. M. Baltaxe, Ph.D. *(Biobehavioral Sciences)*
Warren S. Brown, Ph.D. *(Biobehavioral Sciences)*
V. Charles Charuvastra, M.D.
Milton S. Davis, Ph.D., M.D.
David W. Foy, Ph.D. *(Medical Psychology)*
Victor Haddox, M.D., J.D.
Donald F. Haggerty, Ph.D. *(Biobehavioral Sciences)*
Richard L. Heinrich, M.D.
Lewis M. King, Ph.D. *(Biobehavioral Sciences)*
Ira M. Lesser, M.D.
Charles P. McCreary, Ph.D. *(Medical Psychology)*
James F. McGinnis, Ph.D. *(Biobehavioral Sciences)*
Gerald J. McKenna, M.D.
Paul R. Munford, Ph.D. *(Medical Psychology)*
Warren R. Procci, M.D.
H. Rebecca Rausch, Ph.D. *(Neuropsychology)*
Mario Valente, M.D.
Jeffery N. Wilkins, M.D.

Adjunct Assistant Professors

Luis J. Fitten, M.D.
J. Stephen Heisel, M.D.
Richard J. Loewenstein, M.D.
Barringer D. Marshall, M.D.
Rochelle Reno, Ph.D. *(Medical Psychology)*
Lanny L. Snodgrass, M.D., Ph.D.

Adjunct and Visiting Lecturers

Nancy H. Allen, M.P.H., *Adjunct (Biobehavioral Sciences)*
Linda A. Andron, M.S.W., *Adjunct (Social Work)*
J. Wesson Ashford, M.D., *Adjunct*
Marion T. Baer, Ph.D., *Visiting (Nutrition)*
S. Delores Barnes, D.S.W., *Adjunct (Social Work)*
Barbara A. Bass, M.S.W., *Adjunct (Social Work)*
Diane J. Bass, M.S.W., *Adjunct (Social Work)*
Carole L. Bender, M.S.W., *Adjunct (Social Work)*
M. Christina Benson, M.D., *Visiting*
Elizabeth A. Carlin, Ph.D., M.S.W., *Visiting (Social Work)*
Virginia K. Cruz, D.S.W., *Visiting (Social Work)*
Richard A. Embry, M.S.W., *Visiting (Social Work)*
Angela Farrell, M.S.W., *Adjunct (Social Work)*
Florence Frisch, M.S.W., *Adjunct (Social Work)*
Charlotte B. Gelb, M.S.W., *Adjunct (Social Work)*
Claudia Gerber, R.N., *Adjunct (Nursing)*
Tracy A. Goodglick, B.A., *Adjunct (Biobehavioral Sciences)*
Mary Lou Gottlieb, M.S.W., *Adjunct (Social Work)*
Joan E. Johnson, M.S.W., *Adjunct (Social Work)*
Martha B. Jura, Ph.D., *Adjunct (Biobehavioral Sciences)*
Tom L. Kennon, M.S.W., *Adjunct (Social Work)*
Paul Koegel, Ph.D., *Visiting (Anthropology)*
Marilyn O. Lowell, M.A., *Adjunct (Biobehavioral Sciences)*
Myrtle Mandiberg, M.A., *Adjunct (Biobehavioral Sciences)*
Miriam A. Meyer, M.S.W., *Visiting (Social Work)*
Wendy L. Morrell, M.S.W., *Adjunct (Social Work)*
Natalie R. Newman, M.D., *Adjunct (Biobehavioral Sciences)*
Gilda Ongkeko, M.S.W., *Adjunct (Social Work)*
Olga J. Petre-Quadens, M.D., *Visiting*
Anderson W. Pollard, M.S.W., *Adjunct (Social Work)*
Terri A. Price, M.A., *Adjunct (Biobehavioral Sciences)*
Pearl Rapp, M.S.W., *Adjunct (Social Work)*
Judith W. Ross, M.A., *Adjunct (Biobehavioral Sciences)*
Joanne Sajdak, M.S.W., *Adjunct (Social Work)*
Catherine C. Sammons, M.S.W., *Adjunct (Social Work)*
Olga Samuel, M.S.W., *Adjunct (Social Work)*
Breena T. Satterfield, M.S.W., *Visiting (Social Work)*
Estelle L. Shane, Ph.D., *Visiting (Psychoanalysis)*
Elizabeth Shima, M.S.W., *Adjunct (Social Work)*
Cynthia A. Telles, Ph.D., *Adjunct (Biobehavioral Sciences)*
J. Mark Thompson, M.D., *Adjunct*
Frank J. Trankina, Ph.D., *Adjunct (Medical Psychology)*
Bertha B. Unger, M.A., *Adjunct (Biobehavioral Sciences)*
W. Paul Von Blum, J.D., *Adjunct (Medical Humanities)*
Ruth A. Waldron, M.S.S., *Visiting (Social Work)*
Claire Weiner, M.S.W., *Adjunct (Social Work)*
Kathryn P. White, Ph.D., *Adjunct (Biobehavioral Sciences)*
Joyce Will, M.S.W., *Visiting (Social Work)*

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 University 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 and the Department of Psychiatry and Biobehavioral Sciences and by the Office of Instructional Development — Field Studies Development. Each year a group of 28 students is selected for the program which runs during the Winter/Spring Quarters. Students participate in courses and research at Lanterman State Hospital and Developmental Center, a facility for mentally retarded citizens in Pomona, and do related fieldwork while living at the site. During each quarter of the program up to 20 units of coursework related to developmental disabilities are offered. Most of the courses are in the Psychiatry/Psychology M180 through M184 series, but courses from other departments (such as Biology) may supplement these offerings. 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 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 January 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, C8-532 NPI&H (825-0145).

A certificate is also awarded by the department to qualified graduate students who successfully complete the **Mental Retardation and Other Developmental Disabilities Training Program.** The program fulfills the internship requirement for the Ph.D. program in Clinical Psychology and the master's program in social welfare, and for the disciplines of speech pathology, occupational therapy, and nutrition at nearby universities. Further, it satisfies state licensure and clinical placement requirements in psychology, speech and language, special education, social welfare, nursing, pediatrics, pediatric dentistry, occupational therapy, and nutrition. Interested students should contact the program training director, 78-243A NPI&H (825-0147), for further information.

Information on clinical practicums which are offered in conjunction with other educational institutions and UCLA departments may be obtained from the department office.

Master of Social Psychiatry

The Master of Social Psychiatry (M.S.P.) program is not admitting new students at this time.

Upper Division Courses

M112. A Laboratory for Naturalistic Observations: Developing Skills and Techniques. (Same as Anthropology M136Q and Psychology M155.) Prerequisite: consent of instructor. The 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 the social sciences.
Mr. Gallimore, Mr. Turner, Mr. Weisner (W)

M119. Evolution of Intelligence. (Same as Psychology M119.) Lecture, two hours; discussion, two hours. Prerequisites: Psychology 15 or 115, an introductory statistics course, junior or senior standing, consent of instructor. Intelligence treated as neural information-processing capacity; its evolution in vertebrates correlated with the evolution of enlarged brains. Quantitative approaches in evolutionary biology and the neurosciences. Mr. Jerison

M133. Exceptional Children. (Same as Psychology M133B.) Prerequisite: Psychology 130. Study of the issues and research problems in the areas of mental retardation, giftedness, learning disorders, emotional disorders, and childhood psychosis. Mr. Frankel

M142. Advanced Statistical Methods in Psychology. (Same as Psychology M142.) Lecture, two hours; discussion, two hours. Prerequisite: Psychology 41. Chi square, special correlation methods, multiple regression, nonparametric methods, analysis of variance, reliability and validity. Mr. Nihira (W)

175. Women Physicians: Professional Socialization. The professional socialization of women in medicine. The developmental stages of medical training and practice (premed, medical school, internship, residency, and various specialty areas of private practice). Women trainees and physicians in various specialties participate in presentations. Research project required. Mr. Coombs (F)

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 the concepts, issues, and research techniques in the area of mental retardation. Biological, psychological, and community questions concerning the causes and treatment of developmental disabilities, as well as systems for the care and training of retarded individuals. Lectures, directed reading, and discussion.
Mr. Fluharty and the Staff

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. Baker

M181A-M181B. Research in Contemporary Problems in Mental Retardation. (Same as Psychology M181A-M181B.) Corequisites: courses M180A, M180B. Research experience. In Progress grading.
Mr. Silverstein and the Staff

M182A. Advanced Statistical Methods in Mental Retardation. (Same as Psychology M182A.) Prerequisite: Psychology 41. Limited to Immersion Program students. Introduction of statistical method and design in experimentation principles of statistical inference and appropriate testing methods. Introduction to the use of computers and various software packages. Mr. Olmstead

M182B. Advanced Design and Statistics. (Same as Psychology M182B.) Prerequisite: course M182A. Continuation of course M182A. Mr. Silverstein

M182C. Perception. (Same as Psychology M182C.) Limited to Immersion Program students. Human information processing, both physical and psychological, with special emphasis on pathologies in the mentally retarded. Mr. Galbraith

M182D. Current Issues in Mental Retardation. (Same as Psychology M182D.) Limited to Immersion Program students. Advanced topics in mental retardation. May be repeated for credit with consent of instructor. Mr. Olmstead

M183. Introduction to Neuroscience. (Same as Psychology M183). Limited to Immersion Program students. Gross anatomy of the human brain and spinal cord. Mr. Buchwald, Mr. Olmstead

M184. Human Genetics. (Formerly numbered 198.) (Same as Psychology M184.) Lecture, two hours; discussion, two hours. Limited to Immersion Program students. Application of genetic principles in human populations, with emphasis on cytogenetics, biochemical and population genetics, and family studies. Lectures and readings on the methodologies appropriate to answer current questions in the fields of medical and human genetics. Mr. Fluharty

M190. Ethology: Physiology of Behavior and Learning in Animals. (Same as Psychology M118F.) Lecture, four hours; laboratory, one hour. Basic course for undergraduate students which integrates a systematic overview of common forms of behavioral plasticity and standard training procedures in laboratory animals (in behavioral, neurophysiological, and pharmacological studies) with a broad biological, evolutionary perspective.
Mr. Soltysik (W)

199. Special Studies in Psychiatry (2 to 4 units). Prerequisite: consent of instructor and department chair, based on a written proposal outlining the course of study (to be structured by instructor and student at time of initial enrollment). Additional information and course proposal forms are available in the Office of Education, B7-349 NPI&H.

Graduate Courses

200. Colloquium on Biobehavioral Sciences (1 unit). Prerequisite: consent of instructor. A vehicle for continuing education on recent advances in various scientific fields relevant to behavior in its biobehavioral and biosocial contexts. A forum for pertinent interdisciplinary discussion. Speakers present information from their area of competence and express their ideas on the relevance of this material to the broader issues of behavior. Mr. West

M201A-M201B-M201C. The Functional Organization of Behavior (2 units each). (Same as Neuroscience M201A-M201B-M201C.) Prerequisite: consent of instructor. Course M201A is prerequisite to M201B, which is prerequisite to M201C. **M201A.** The development of behaviors within different species and the functional uses of behaviors; use of an evolutionary biological perspective as the framework. **M201B.** Research studies designed to take into account the functional behavior of animals. **M201C.** Special questions of interest to students.
Mr. Eiduson, Mr. McGuire, Mr. Woody (F,W,Sp)

207A-207B-207C. Hypnosis Seminar (2 units each). (Formerly numbered 207.) 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, the effects of generalized and focal brain impairment on behavior, and an introduction to the use of neuropsychological test instruments.
Mr. Marsh (F,W,Sp)

M210A-210B. Seminar in Psychocultural Studies. (Same as Anthropology M234A-M234B.) Lecture, three hours. Prerequisite: consent of instructor. A two-quarter sequence devoted to the 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, Mr. Price-Williams

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 the study of the phenomenon of mental retardation in the West, particularly the United States. Topics include cross-cultural perspectives, the history of institutional confinement, the 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 (W)

M212. Cultural Modes of Thought. (Same as Anthropology M232P.) Lecture, three hours. Prerequisite: consent of instructor. An examination of the influences of culture on learning, perception, thinking, and intelligence. The fields of cross-cultural psychology, in addition to cognitive anthropology. Focus on learning and thinking in non-Western cultures, including problems of education in ethnic areas within the U.S. Mr. Price-Williams (W)

M213A-M213B. The Individual in Culture. (Same as Anthropology M235A-M235B.) Lecture, three hours. Course M213A is prerequisite to M213B. In Progress grading. Mr. Langness (F,W)

M214. Selected Topics in the Cross-Cultural Study of Socialization and Childhood. (Same as Anthropology M236P.) Lecture, three hours. Prerequisite: consent of instructor. Methods, ethnographic data, and theoretical orientations. Emphasis on current research. May be repeated for credit.
Mr. Weisner (F)

M216A-M216B-M216C. Functional Neuropsychology. (Formerly numbered 216.) (Same as Neuroscience M216A-M216B-M216C and Physiology M255A-M255B-M255C.) Seminar, three hours. Prerequisites: graduate standing, consent of instructor. The neurobiology of human infant speech and the neuropsychology of language memory. Topics include animal communication, phylogeny and ontogeny of language, cerebral processing of language and speech in normal and brain-damaged adults, and neural models of memory. S/U or letter grading.
Ms. Buchwald (F), Mr. Halgren (Sp), Ms. Van Lancker (W)

M219A-M219B. Basic Core Courses in 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. A systematic overview of mental retardation and the sciences basic to this field of study. The language, methods, aims, and contributions of the various disciplines that contribute to the field. The last two weeks of the second quarter are spent discussing and preparing multidisciplinary research designs with potential for the prevention or amelioration of mental retardation. S/U grading. Mr. Buchwald, Mr. Edgerton

220A-220B. Living Systems Theory and Its Application (2 or 4 units each). Prerequisite: consent of instructor. Current status of basic and applied scientific research in systems science at the levels of the cell, the organ, the organism, the group, the organization, the society, and the supranational systems. Present and potential future applications of systems science to psychodiagnostics, psychotherapy, group processes, community psychiatry, and organizational behavior. Possible applications to neurosciences, artificial intelligence, instructional technology, and other fields. If taken for four units, additional class time and reading and a research paper (20-25 pages) required. Mr. Miller (F,W)

M221A-M221B. Cellular and Molecular Neurochemistry. (Same as Anatomy M221A-M221B, Biological Chemistry M221A-M221B, Neuroscience M221A-M221B, and Pharmacology M221A-M221B.) Lecture, three hours. Prerequisites: Biological Chemistry 101A-101B-101C or equivalent. Contemporary neurochemistry for students with a general background in biochemistry. Relates the biochemical and structural properties of the nervous system to its development and functions and introduces students to disorders that result from alterations in the fundamental biochemistry of the nervous system. Although the subject is treated in an interdisciplinary manner, course progresses from structure through chemistry to function in precise manner and biological terms.
Mr. de Vellis, Mr. Eiduson, Mr. Olsen (W,Sp)

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 the questions of "sick" societies. May be repeated for credit. Mr. Kennedy

223. MMPI Seminar and Case Conference (2 units). Seminar, one hour; discussion, one hour. Prerequisite: psychology intern, psychiatry resident, or consent of instructor. Seminar and case conference on the interpretation of the Minnesota Multiphasic Personality Inventory (MMPI) — theory, principles, and research into the personality types. Discussion of case data relating to the MMPI profile and treatment planning. Mr. Caldwell

226A-226B. Childhood Psychopathology (2 units each). Seminar, one hour. Prerequisite: consent of instructor. Current research in the causes and behavioral manifestations of childhood psychopathology. Discussion on diagnosis and etiology of childhood psychopathology.
Ms. Sigman, Mr. Tanguay (F,W)

228. Behavioral Medicine. Seminar, three hours. Prerequisite: consent of instructor. Review of behavioral science knowledge and techniques relevant to the understanding of physical health and illness and discussion of the application of this knowledge and these techniques to prevention, diagnosis, treatment, and rehabilitation. Integration of behavioral and biomedical approaches.
Mr. McCreary, Mr. Munford, Mr. Reeves, Mr. Shapiro

230. Confucius and Asian Americans (1 unit). Prerequisite: consent of instructor. The cultural aspects relevant to the treatment of Asian Americans. Discussion of the philosophical teachings of Confucius. Similarities and differences among Asian Americans and relevant clinical issues. S/U grading.
Mr. Chien, Mr. Yamamoto (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 United States, an analysis of the various theoretical perspectives regarding biopsychosocial behavior; distinguishing psychodynamic from cultural factors in the treatment of Spanish-speaking patients; treatment of Hispanic families, couples, undocumented persons, and criminal justice system clientele.
Mr. Loya, Mr. Morales, Ms. Telles (W)

232A-232B-232C. Human Sexual Dysfunction (2 units each). Prerequisite: consent of instructor. One-year training and research course in the direct behavioral treatment of human sexual dysfunction. A combination of didactic material and supervised experience. Mr. Golden (F,W,Sp)

234A-234B. Affective Disorders (1 unit each). (Formerly numbered 234A-234B-234C.) Prerequisites: graduate standing, consent of instructor. General topics related to the primary affective disorders (depression, manic depressive illness), including diagnosis, pharmacology, epidemiology, psychology, phenomenology, biology, and treatment. S/U grading.
Mr. Gitlin, Ms. Jamison

M235. A Laboratory for Naturalistic Observations: Developing Skills and Techniques. (Same as Anthropology M236Q and Education M222A.) Lecture, three hours. Prerequisite: consent of instructor. The skill of observing and recording behavior in natural settings, with emphasis on field training and practice in observing behavior. Discussion of some of the uses of observations and their implications for research in the social sciences. Students are expected to integrate observational work into their current research interests. May be repeated for credit.
Mr. Gallimore, Mr. Turner, Mr. Weisner (W)

236A-236B-236C. Psychology Interns Seminar (1 unit each). Prerequisite: consent of instructor. 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)

M239. Psychopharmacology. (Same as Pharmacology M239.) Prerequisite: consent of instructor. A presentation of the effects of drugs on behavior, with special attention to drugs used in psychiatry and drug seeking behavior. Physiological and biochemical mechanisms underlying such actions. Reports on relevant current research. Mr. Jarvik

240. Assessment and Treatment of Afro-American Families (3 units). (Formerly numbered 240A-240B-240C.) Seminar, two hours. Prerequisites: graduate standing, consent of instructor. Aids mental health professionals and trainees in the evaluation and treatment of Afro-American families in terms of their cultural milieu, historical background, and economic status. Didactic presentations by instructors and invited guests form the basis for supervised evaluation and case management with an Afro-American child and family.
Ms. Bass, Ms. Powell, Ms. Wyatt (Sp)

242A-242B-242C. Child Psychotherapy Seminar (1 unit each). Prerequisite: consent of instructor. **242A-242B.** Videotaped diagnostic and treatment sessions of children and their families provide a framework for discussing such topics as diagnostic criteria, the beginning of treatment, the overdetermined nature of the symptom, transference phenomenon related to parental conflict, initial recovery of psychological reactions to past events, factors enhancing future working relationships with child and family, and various other technical issues, including the handling of terminations. **242C.** The theory and principles of psychoanalytic work with parents, with emphasis on initiating and maintaining the treatment of the family. Student presentations encouraged in order to amplify clinical and theoretical issues.
Mr. Heinicke

243A-243B-243C. Mental Retardation Interdisciplinary Core Curriculum (1 unit each). Lecture, 90 minutes. Prerequisite: consent of instructor. A 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 an interdisciplinary framework as generic information independent of discipline. S/U grading.
Mr. Forness, Ms. Jacobs (F,W,Sp)

244. Computers in Mental Retardation Research. Prerequisite: consent of instructor. An introduction to the basic nature of digital computer systems, with emphasis on their impact on society. Directed toward providing the student with a broad general understanding of applications and limitations of computers. Specific examples from clinical, research, and administrative applications within the mental retardation and child psychiatry program.
Mr. Guthrie, Mr. Hull (W)

245A-245B. Psychological Assessment of Severely Handicapped Children (3 units each). Lecture, 90 minutes. Prerequisite: consent of instructor. Course 245A is prerequisite to 245B. The psychological assessment of the preschool child. Specific emphasis on the assessment of children with developmental disabilities and children who are generally thought to be "untestable." A practical orientation, involving two hours per week of supervised testing. S/U grading. Ms. Freeman (F,W)

M246. Psychological Aspects of Mental Retardation. (Same as Psychology M246.) Prerequisite: consent of instructor. Discussion of the 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 (F)

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 the context of available literature; intense discussion during and after presentation. S/U grading.
Mr. Buchwald, Mr. Levine (F,W,Sp)

248. Research Rounds in Mental Retardation and Developmental Disabilities (1 unit). Prerequisite: consent of instructor. Monthly session, with presentation of a patient and discussion of research approaches relevant to that patient. Staff members from various disciplines and invited speakers participate. S/U grading. Mr. Levine (F,W,Sp)

251. Laboratory Exercises in the Techniques of Mammalian Cell Culture. Laboratory, 12 hours. Prerequisites: graduate or medical student standing, consent of instructor. Provides a working knowledge of the physiology and biochemistry of mammalian cells in culture through laboratory exercises involving the propagation and manipulation of differentiated and undifferentiated continuous mammalian cell lines. S/U grading. Mr. Haggerty (W)

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 a major role in each session. Mr. Cantwell

M254. Counseling Families of Handicapped Children (2 units). (Same as Social Welfare M242.) Prerequisite: consent of instructor. 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. Gottlieb (W)

256. Basic Clinical Child Psychopathology (1 unit). Prerequisite: consent of instructor. Weekly seminars covering the basic clinical aspects of child psychopathology. Readings provided for a 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. Prerequisite: consent of instructor. Didactic and practical training in communication and its dysfunction as these relate to language disabilities seen in an interdisciplinary medical setting. Provides a background for graduate and postgraduate 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)

259. Legal and Ethical Issues with Vulnerable Populations (3 units). Discussion, 90 minutes; laboratory, three and one-half hours. Prerequisite: consent of instructor. 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 (W)

260. The Chronically Medically Ill Child and Family. Lecture, three hours; seminar, one hour. Prerequisite: consent of instructor. Examination from a biopsychological perspective of the ramifications of chronic illness affecting the 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)

261. Psychopathology in the Mentally Retarded (1 unit). Seminar, 90 minutes. Prerequisite: consent of instructor. Review of current research findings and clinical practice concerning dually diagnosed populations. Nosology, theoretical issues, assessment and therapeutic interventions pertaining to populations with mental retardation and emotional problems.
Ms. Jacobs, Mr. Price-Williams (F)

263A-263B-263C. Current Issues: Mental Retardation and Developmental Disabilities (1 unit each). Seminar, 21½ hours per month. Prerequisite: consent of instructor. Current clinical trends and research developments in the fields of mental retardation and development disabilities, providing a forum for discussion. Selected topics include autism, legal and ethical issues, intervention, and medical genetics. S/U grading. Mr. Forness, Ms. Jacobs

264. Biofeedback: Theory, Research, and Clinical Application. Seminar, two hours; laboratory, one hour. Prerequisite: consent of instructor. 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 the use of portable biofeedback devices. Consideration of research and clinical issues. Mr. Shapiro (W)

265. Mind and Brain in Evolution (2 units). Prerequisite: consent of instructor. Review of the fossil evidence on the organic evolution of the brain and the implications of that evidence for the 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)

266. Psychophysiological Research (1 unit). 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 and pain, discrimination and control of blood pressure, and behavioral regulation of postural hypotension. Mr. Shapiro (F,W,Sp)

M268. Behavioral Management of Pain Problems (2 units). (Same as Anesthesiology M268.) Prerequisite: consent of instructor. Review of current knowledge and skills involved in the behavioral assessment and management of acute and chronic pain problems. The behavioral perspective integrated with related physiological and medical considerations.
Mr. McCreary, Mr. Reeves (W)

271. Ethology of Motivation and Conditioning. Basic facts and concepts of motivation and learning in animals, presented in the framework of ethological and neurophysiological approach. Classical and instrumental conditioning procedures, with particular attention to the motivational variables.
Mr. Soltysik (W)

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 are related to culture. Topics vary from quarter to quarter. May be repeated for credit.
Mr. Edgerton, Mr. Kennedy (W)

M273. Social Relations, Illness, and Health. (Formerly numbered 273.) (Same as Anthropology M263Q.) Prerequisite: one upper division course in anthropology, sociology, or psychology. Social structural factors that influence how health is defined and illness experienced, managed, and treated in the U.S. and abroad. Topics include the determinants of household health, institutional issues in the delivery of health services, and gender and health.
Ms. Browner

274. Neurophysiology and Behavior (3 units). Prerequisites: graduate standing, consent of instructor. An 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 a biological rather than a psychological perspective. In Progress grading.
Mr. McGuire (F,W)

277. From Research to Practice: Biobehavorial Contributions (2 units). Prerequisite: consent of instructor. An overview of biobehavioral research as it is currently translated into therapeutic and preventive practice across disciplines. S/U grading.
Mr. Serafetinides

278. Clinical Psychopharmacology Research. Discussion, two hours; laboratory, two hours. Prerequisites: experience in a psychiatric facility, involvement in psychiatric research, consent of instructor. Directed research and clinical experience at the graduate level. Clinical skills taught in the practical setting of ongoing psychopharmacology research projects. Discussion of clinical case problems and ongoing psychopharmacology research projects and of proposed new projects focusing on practical problems, design, methodology, procedures, and instrumentation. Mr. May

M279A-M279B-M279C. Seminar: Selected Topics in Human Ethology. (Same as Anthropology M229A-M229B-M229C and Education M281A-M281B-M281C.) Ethologists now use successful animal behavior methodology to study human behavior. When is this appropriate, how can it contribute? Each quarter covers one level of analysis: describing and recording behavior; causation; development, especially longitudinal studies; adaptation; evolutionary origins. Mr. Blurton Jones (F,W,Sp)

280. Women, Work, and Health. Seminar, three hours; discussion, one hour. Prerequisite: consent of instructor. Examination of how women's socioeconomic roles in both developing and industrial societies influence their own health and that of the households in which they live. Women's caretaking roles in the household and in the larger society.
Ms. Browner (F)

281. Behavioral Therapy in an Educational Setting (3 units). Prerequisite: consent of instructor. Supervised experience in a classroom working with exceptional children. Theoretical background furnished through a one-hour weekly lecture.
Ms. Richey (F,W,Sp)

282. Schizophrenia: A Developmental Perspective (2 units). Prerequisite: consent of instructor. Review of research on the transmission of schizophrenia. Emphasis on a critical appraisal of the research strategies used to tease apart the relative contributions of environmental and genetic factors in the transmission of schizophrenia and on studies of children at risk for schizophrenia. Mr. Asarnow

285A-285B-285C. Intermediate Family Therapy (3 units each). Seminar, two hours. Prerequisite: consent of instructor. Theories and techniques of family therapy. History, foundations, and indications and contraindications for family therapy and diagnosis. Observations and demonstrations. Students encouraged to bring videotapes of their family therapy cases for discussion. Ms. Goldenberg

287. Psychopharmacology Seminar (2 units). Prerequisite: consent of instructor. A discussion of ongoing research in the area of psychopharmacology. Emphasis on smoking and other drug-related habits. Topics include initiation, maintenance, and cessation of habits. Basic mechanisms stressed. Psychological procedures used in habit development and control, particularly coping methodology. Mr. Jarvik

290. Quantitative Analysis of Ethnographic Data. Prerequisite: graduate standing. Didactic and experiential training in quantification and analysis of ethnographic data, including principles of psychological scaling and techniques of behavioral measurement as applied to ethnographic data and application of univariate and multivariate statistical methods for analysis of ethnographic data. Mr. Nihira

M291A-M291B. Seminar in Behavioral Biology. (Same as Anthropology M228A-M228B, Biology M252A-M252B, Education M229A-M229B, Physiology M252A-M252B, and Psychology M230A-M230B.) Discussion, six hours. Prerequisite: consent of instructor. Basic seminar for graduates interested in behavioral biology. An interdisciplinary course dealing with behavioral research in anthropology, biology, psychology, and the medical sciences. Proximate causation, development, and evolution in animal behavior. Physiology and the organization of behavior. Vertebrate social organization. Animal communication. The application of natural selection theory to human social behavior. In Progress grading.

293A-293B-293C. Sexual Abuse Seminar (1 unit each). Prerequisite: consent of instructor. Review of the interdisciplinary evaluation and treatment of sexually abused children and their families; recognition; reporting requirements and procedures; child advocacy; incidence and phenomenology; interviewing techniques; the physical examination; treatment modalities such as group, individual, family therapies, and self-help; family dynamics; special needs of the developmentally disabled; the adult molested as a child; understanding the perpetrator and controversial issues.
Ms. Johnson, Ms. Moan, Ms. Powell (F,W,Sp)

298. Current Topics in the Biobehavioral Sciences (1 to 4 units). Prerequisite: consent of instructor. Current issues in the biobehavioral sciences offered on a selective basis depending on instructor interest and topical relevancy of problems. See *Schedule of Classes* for topics and instructors. May be repeated for credit.

402. Childhood Psychosis Journal Club (1 unit). Prerequisite: consent of instructor. Discussion of basic and applied research issues related to childhood psychosis by a series of speakers. Readings suggested for each topic. Ms. Sigman

403. Individual Case Supervision (1 to 4 units). Prerequisite: consent of instructor and department chair (based on a written proposal to be structured by instructor and student prior to enrollment; additional information and proposal forms available in the Office of Education, B7-349 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.

413. Community Meeting: 2-West (1 unit). Prerequisites: assignment to Unit 2-West, consent of instructor. One-hour course devoted to individual experience in leading a large group of patients and staff. Leadership by rotation. A 30-minute process didactic session follows. Mr. Baxter

414. Emergency Treatment Attending Rounds (1 unit). Prerequisites: assignment to Emergency Treatment Unit, consent of instructor. Cases seen in the emergency room during the preceding night, reviewed by a consultant and the emergency treatment staff. Exploration of assessment techniques, methods of intervention, and alternate modes of treatment. Mr. Slawson

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 the 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 the 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 the full spectrum of disorders, with expert off-unit consultants.

426. Psychology Interns Psychosomatic Liaison Case Conference. Prerequisite: consent of instructor. Psychology interns case conference of psychosomatic aspects of physical illness. Cases discussed with regard to management issues, psychotherapy issues, methods of psychodiagnosis, counter transference, and relevant literature. In addition, participants receive individual supervision on a weekly basis. Mr. Wellisch

429. Child Outpatient Team (1 unit). Prerequisite: consent of instructor. Weekly team meetings to coordinate the clinical activities of the trainees in the Child Outpatient Department. Discussion of literature and theories related to selected cases. S/U grading.

445. Family Therapy Seminar for Clinicians (2 units). Prerequisites: prior clinical responsibility and treatment experience with individuals or families, consent of instructor. Conceptual and practical issues of family development and treatment. Emphasis on structural family therapy. Alternative models may be reviewed during the year. Videotape used extensively. Case supervision available. Participants must be treating one or more families. Mr. Gottlieb

449. Supervision in Systematic Parent Training (2 units). Lecture, 90 minutes; discussion, one hour. Prerequisites: graduate standing, consent of instructor. Advanced clinical trainees learn behavioral techniques of assessment and treatment of parent-child problems. Lectures, case presentations, and workshops on the various skills necessary. Mr. Frankel

462A-462B-462C. School Intervention by Child Psychiatrists. 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 the site of field experience in consultation. Supervision focuses on assessing the needs of the school and initiating the consultation. Seminars consider theories of consultation, systems theory as applied to the schools, the organization of the school systems, the professional roles represented in the school (e.g., teachers, counselors, principals, etc.), and their special problems. In Progress grading. Mr. Cantwell

465. Pediatric Psychopharmacology Seminar (1 unit). Prerequisite: child psychiatry fellow or consent of instructor. Designed for all fellows in child psychiatry. The 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. Cantwell

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 the pertinent literature and to assemble the critical elements of information on the case or problem at hand. Most sessions eligible for Continuing Medical Education credit.

M472A. Nursing Care of the 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 handicapping conditions of childhood and their effects on the individual and the 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 the implementation of intervention strategies. Series of three courses integrates didactic material and clinical experience. Ms. Betz (F)

M472B. Nursing Care of the 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 the philosophical and conceptual models affecting care delivery for the developmentally disabled. Emphasis on intervention strategies necessary for primary, secondary, and tertiary prevention. Ms. Betz (W)

M472C. Nursing Care of the 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 the assessment, planning, and delivery of health care to the developmentally disabled in a variety of settings. Emphasis on the expanded role of the nurse. Ms. Betz (Sp)

474. Child Psychiatry Colloquia (1 unit). Lecture, 90 minutes per month. Prerequisite: consent of instructor. Presentations of programmatic research in child psychiatry. Each session includes a faculty research presentation followed by comments from invited discussants, as well as general discussion. S/U grading. Ms. Asarnow, Mr. Tanguay

478. Clinical Genetics Rounds (No credit). Prerequisites: medical graduate, consent of instructor. Weekly clinical rounds on patients seen in the wards during the preceding week. House staff and others involved in clinical work may attend. Usually an in-depth discussion of the medical and genetic aspects of one or more disorders presented. Ms. Crandall

479. Genetics Clinic Presentation (No credit). Prerequisite: consent of instructor. A weekly clinical teaching session on the patients seen in the preceding genetics clinic. In-depth discussion on the 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 the cytogenetics laboratory during the preceding week presented and discussed with reference to clinical findings. Teaching includes the interpretation of abnormal karyotypes and the technical aspects of routine and special chromosome stains. Mr. Sparkes

481. Chromatography Review (No credit). Prerequisites: premedical course or biochemistry, consent of instructor. A weekly session with presentation of amino acid chromatography carried out during the preceding week. The interpretation of abnormal chromatograms together with the technical aspects of the tests used. Mr. Cederbaum

482. Psychology Interns Group Process (1 unit). (Formerly numbered 482A-482B-482C.) Seminar, 90 minutes. Prerequisite: consent of instructor. Group processes and dynamics, involving an active learning experience whereby students study their own group interactions in order to examine group process variables such as styles of leadership, verbal and nonverbal methods of communication, the development of trust, self-disclosure, and the effects on group process of stereotypes about ethnic and masculine-feminine characteristics of people. S/U grading. Ms. Holroyd

485. Medical Genetics Seminar (No credit). Prerequisites: introductory course, consent of instructor. A weekly lecture series intended for those interested in genetics or in the 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 the 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 a written proposal outlining the course of study (to be structured by instructor and student at time of initial enrollment). Additional information and course proposal forms available in the Office of Education, B7-349 NPI&H. Directed individual research and study in psychiatry at the graduate level. Mr. Tymchuk

Radiation Oncology

B3-109 Center for the Health Sciences, (213) 825-9304

Chair
Robert G. Parker, M.D.

Vice Chair
Edward A. Langdon, M.D.

Scope and Objectives

The Department of Radiation Oncology includes clinical divisions at the UCLA and Wadsworth VA Medical Centers and divisions of experimental radiation biology and medical radiation physics. Research and teaching facilities are available at both medical centers. The primary clinical mission of the department

is the management of patients who have cancer, although ionizing radiations also are used for preparing patients for bone marrow transplantation and for altering the immune system 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, and nursing students and community and postgraduate physicians who are qualifying for certification in therapeutic radiology 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

AR-259 Center for the Health Sciences, (213) 825-7811

Professors

Zoran L. Barbaric, M.D. *(Diagnostic Radiology)*
Jorge R. Barrio, Ph.D. *(Nuclear Medicine)*
Leslie R. Bennett, M.D., *Acting Chair*
H. K. Huang, D.Sc., *Medical Imaging Division Chief and Biomedical Physics Program Director*
Norman S. MacDonald, Ph.D. *(Nuclear Medicine)*
Carol M. Newton, M.D., Ph.D.
Amos Norman, Ph.D. *(Radiation Biology)*
Robert G. Parker, M.D. *(Radiation Oncology)*
Michael E. Phelps, Ph.D. *(Jennifer Jones Simon Professor of Biophysics), Nuclear Medicine and Biophysics Division Chief*
James B. Smathers, Ph.D. *(Radiation Oncology)*
Milo M. Webber, M.D., LL.B. *(Nuclear Medicine)*
Gabriel H. Wilson, M.D. *(MRI)*
H. Rodney Withers, M.D., D.Sc. *(Radiation Oncology)*
Moses A. Greenfield, Ph.D., *Emeritus*
Richard F. Riley, Ph.D., *Emeritus*

Associate Professors

Edward J. Hoffman, Ph.D., *in Residence (Nuclear Medicine, Biophysics)*
Sung-Cheng Huang, D.Sc. *(Nuclear Medicine, Biophysics)*
James Winter, M.D., Ph.D., *in Residence (Diagnostic Radiology)*

Assistant Professors

Stephen L. Glickman, Ph.D., *in Residence (Biophysics, Nuclear Medicine)*
W. N. Paul Lee, M.D., *in Residence (Pediatrics)*
Juan F. Lois, M.D., *in Residence (Diagnostic Radiology)*
Nicholas J. Mankovich, Ph.D., *in Residence (Medical Imaging)*

Adjunct Professors

J. Duncan Craven, M.D. *(Diagnostic Radiology)*
L. Stephen Graham, Ph.D. *(Nuclear Medicine)*

Adjunct Associate Professors

F. Eugene Holly, Ph.D. *(Radiation Oncology)*
Martin W. Herman, Ph.D. *(Diagnostic Radiology)*
Lawrence E. Williams, Ph.D. *(Medical Imaging)*

Adjunct Assistant Professors

Carolyn Kimme-Smith, Ph.D. *(Medical Imaging)*
Richard L. LaFontaine, Ph.D. *(Diagnostic Radiology)*
Lee T. Myers, Ph.D. *(Radiation Oncology)*
James S. Whiting, Ph.D. *(Medical Imaging)*

Adjunct and Visiting Lecturers

David O. Findley, Ph.D., *Visiting (Diagnostic Radiology)*
Charles L. Moler, *Adjunct (Diagnostic Radiology)*
Peter J. Rosemark, Ph.D., *Visiting (Radiation Oncology)*
Marilyn C. Wexler, M.S., *Visiting (Radiation Oncology)*

Scope and Objectives

The biomedical physics graduate program in the Department of Radiological Sciences offers training in four subspecialties: 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 positron emission tomography (PET) scanners, the stereotactic gamma irradiator, and three VAX computer systems with three 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), including calculus equivalent to Mathematics 31A, 31B, 32A, 32B, 33A, 33B, (3) one year of college chemistry and one quarter of biochemistry, (4) one course each in anatomy and physiology, (5) at least one course in computer science, and (6) one course in statistics. Deficiencies in the above courses must be removed prior to advancement to candidacy.

Scores from the Graduate Record Examination (GRE) Aptitude 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, AR-259 CHS, UCLA, Los Angeles, CA 90024.

Master of Science in Biomedical Physics

Course Requirements

A minimum of eleven courses, including eight core courses (Radiological Sciences 200A, 200B, 203, 204, 205, 207, 209, and 260A or 260B), course 208A or 208B, and Public Health 100A and 100B, are required for the M.S. degree. In addition, you must take three clinical rotations (Radiological Sciences 202A-202B-202C).

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.

Ph.D. in Biomedical Physics

Admission

Admission to the doctoral program requires (1) selecting a subspecialty, (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 subspecialty screening examination which may be repeated once. Completion of a master's program is not required.

Qualifying Examinations

The screening examination for admission to the Ph.D. program should be taken by the end of your sixth quarter in residence. Once the screening examination is passed and you have selected a research topic in your subspecialty 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 screening 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 Study or Research for Undergraduate Students (2 to 4 units). Prerequisite: consent of graduate adviser (based on a written proposal outlining the course of study or research). Directed individual study 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. The physical and chemical properties of radioactive preparations used in nuclear medicine.
Mr. Hoffman (F)

200B. Instrumentation in Nuclear Medicine. Prerequisite: course 200A. Introduction to nuclear medicine instrumentation, including exterior probe systems, well scintillation detectors, liquid scintillation counters, scanners, and cameras; dosimetry of internally administered radioisotopes.
Mr. Graham (W)

202A-202B-202C. Applications of Medical Physics to Clinical Problems. Selected studies in the 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. Radiation quantities and units. Radiation dosimetry, clinical applications in treatment planning. Methods of measuring radiation quantities. The calibration of radiation therapy equipment. Mr. Smathers (W)

204. Introductory Radiation Biology. Effect of ionizing radiation on chemical and biological systems.
Mr. Withers (Sp)

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 the basic theory. Mr. Glickman, Mr. H. Huang (Sp)

206. Advanced Instrumentation: MRI, CT, and DR. Prerequisites: courses 200A, 200B, 209, 210. An introduction to the recent advances in digital diagnostic imaging systems, with topics centered on instrumentation in magnetic resonance imaging (MRI), computed tomography (CT), and digital radiography (DR).
Mr. H. Huang (F)

207. Radiation Protection and Health Physics. Concepts in radiation protection, the recommendation of the national council on radiation protection and measurements, the maximum permissible dose levels. Shielding calculations. The layout and design of radiographic installation.
Mr. Herman, Mr. Norman (F)

208A-208B. Medical Physics Laboratory. Prerequisites: courses 203, 205. Techniques for measuring ionizing and nonionizing radiation, applications to problems in radiological sciences.
Mr. Herman (F, 208B; Sp, 208A)

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 the digital technology used in radiological sciences. The concepts and experience necessary to undertake radiological research in a diverse computing environment. Discussion of the relationship between computers and diagnostic equipment with regard to data acquisition, equipment interfacing, and data analysis. Mr. Mankovich (F)

210. The Physics of Medical Imaging. Prerequisites: courses 200A, 200B, 205, 209. Review of Fourier analysis measurement of the LSF and MTE. 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, the ROC curve.
Mr. H. Huang (W)

211. Medical Ultrasound. Lecture, 90 minutes; laboratory, two hours. Prerequisite: at least one course in calculus; for non-Radiological Sciences Department students: consent of instructor. Designed to teach graduate biomedical physics students to calibrate ultrasound medical imaging equipment, to evaluate new instrumentation and research in the field, and to initiate their own research into clinical ultrasound studies. Ms. Kimme-Smith (W)

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. S-C. Huang (W)

260A-260B. Seminar in Medical Physics (2 units each). Joint critical study by students and instructors of the fields of knowledge pertaining to medical physics. Periodic contributions made by visiting scientists. Discussion of research in progress.
Mr. Norman (W, 260A; Sp, 260B)

266A-266B-266C. Seminar in Nuclear Medicine (2 units each). Topics of current interest in nuclear medicine. Intended for physicians, radiation physicists, and graduate students. S/U grading.
Mr. Bennett (F,W,Sp)

268. Seminar in Radiopharmaceuticals (2 units). Current concepts in radioactive pharmaceutical agents in clinical use, including promising investigational agents. Utilization of short-lived, cyclotron produced isotopes in radiopharmaceuticals. The rational design of new radiodiagnostic agents.
Mr. Barrio (Sp)

495. Special Studies in Biomedical Physics. Discussion, two hours; laboratory, four hours. Teaching assistance in graduate laboratory courses under the 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 the M.S. degree requirements. May be repeated for credit.

597. Preparation for Ph.D. Qualifying Examinations. May not be applied toward the 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 the 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

72-125 Center for the Health Sciences, (213) 825-7017

Chair
W. Eugene Stern, M.D.

Executive Vice Chair
Eric W. Fonkalsrud, M.D.

Vice Chairs
E. Carmack Holmes, M.D. *(Sepulveda VA)*
Edward P. Passaro, Jr., M.D. *(Wadsworth VA)*
S. Eric Wilson, M.D. *(Harbor-UCLA)*
George J. Wittenstein, M.D. *(Olive View)*

Scope and Objectives

The Department of Surgery instructs medical students during all four years of medical school. Students are expected to obtain a broad knowledge of diseases treated by surgical means, 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. UCLA, Wadsworth VA, and Harbor-UCLA Medical Centers provide individual sections, each of which has a special orientation depending on the patient population and the individual staff. During the fourth year, students may elect to take additional clinical clerkships 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*.

School of Nursing

Ada M. Lindsey, Dean

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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 its fine undergraduate and graduate programs. Faculty and administration are proud that a new educational opportunity at UCLA, a Doctor of Nursing Science degree program, is expected to be available for enrollment in Fall Quarter 1987.

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 the 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, employed at all levels in many employment settings in different geographical areas, well represent the School of Nursing.

Outstanding educational opportunities are offered by the school. Faculty and administration are proud of the accomplishments and recognition of the school and its graduates and that the school continues to be in the forefront in preparing the future leaders in nursing.

School of Nursing

2-200 Louis Factor Building,
(213) 825-7181

Professors

Charles E. Lewis, M.D., Sc.D.
Ada M. Lindsey, R.N., Ph.D., *Dean*
Sharon J. Reeder, R.N., Ph.D.
Maria W. Seraydarian, Ph.D.
Donna L. Vredevoe, Ph.D.
Lulu Wolf Hassenplug, R.N., M.P.H., Sc.D., *Emeritus*
Dorothy E. Johnson, R.N., M.P.H., *Emeritus*
Harriet C. Moidel, R.N., M.A., *Emeritus*

Associate Professors

Betty L. Chang, R.N., D.N.Sc.
Kathleen A. Dracup, R.N., D.N.Sc.
Jacquelyn H. Flaskerud, R.N., Ph.D.
Phyllis A. Putnam, R.N., Ph.D.
Gwen M. van Servellen, R.N., Ph.D.
Donna F. Ver Steeg, R.N., Ph.D.
Agnes A. O'Leary, R.N., M.P.H., *Emeritus*

Assistant Professors

Loretta M. Birckhead, R.N., Ed.D.
Olive Y. Burner, R.N., Ph.D.
Anayis K. Derdiarian, R.N., D.N.Sc.
Deborah Koniak, R.N., Ed.D.
Susan M. Ludington, R.N., Ph.D.
Magelende R. McBride, R.N., Ph.D.
JoEllen M. Murata, R.N., Ph.D.
Adeline M. Nyamathi, R.N., Ph.D.
Rose M. Odum, R.N., D.N.Sc.
Anna K. Omery, R.N., Ph.D.
Juliet L. Tien, R.N., D.N.Sc.
Margaret A. Topf, R.N., Ph.D.
Barbara A. Davis, R.N., Ed.D., *Emeritus*

Assistant Clinical Professors

Genevieve A. Bahu, R.N., M.N.
Evelyn L. Gonzales, R.N., M.S.N.
Mirta E. Granville, R.N., M.S.N.
Barbara M. McCarthy, R.N., M.N.
Linda P. Sarna, R.N., M.N.

Adjunct and Visiting Lecturers

Vicky R. Bowden, R.N., M.N.Sc., *Visiting*
John M. Clochesy, R.N., M.S., *Visiting*
Diane F. Cooper, R.N., M.N., *Visiting*
Linda L. Faber, R.N., Ph.D., *Visiting*
Mary E. Grech, R.N., M.S., *Visiting*
Mary J. Hoban, R.N., M.N., *Visiting*
Roxana R. Huebscher, R.N., M.S.N., *Visiting*
Celine Marsden, R.N., M.N., *Visiting*
Debra J. Nash, R.N., M.S.N., *Visiting*
Leslie N. Ray, R.N., M.N., *Visiting*
Judith V. Roach, R.N., M.N., *Visiting*
Esther F. Seeley, R.N., M.N., *Adjunct*
Pamela A. Shuler, R.N., M.N.Sc., *Visiting*
Irene M. Stuart, R.N., M.N., *Visiting*
Rose A. Vasta, R.N., Ph.D., *Visiting*
Inese L. Verzemnieks, R.N., M.S., *Visiting*
Mickie D. Welsh, R.N., M.S.N., *Visiting*

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 Louis Factor Building, UCLA, Los Angeles, CA 90024 (825-7181).

History and Accreditation

The School of Nursing was authorized by The Regents of the University in 1949 as one of the professional schools of the UCLA Medical Center. This action paved the way for the development of an undergraduate basic program in nursing and made possible the establishment of a graduate program leading to the Master of Nursing degree. 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 both programs since 1954.

Degrees Offered
Bachelor of Science in Nursing (B.S.)
Master of Nursing (M.N.)

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 experience 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.

The School of Nursing curriculum affords the opportunity to sit for the California Registered Nurse licensing examination at the conclusion of your junior year. You must maintain a minimum GPA of 3.0 each quarter and must petition the assistant dean to enroll beyond the four quarter courses usually permitted. Since many states do not reciprocally honor California nursing licenses obtained prior to completion of a baccalaureate degree, students who plan to follow this sequence should contact the assistant dean for Student Affairs before the beginning of the freshman year for more complete details.

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 disadvantagement. You must have completed a minimum of 84 quarter units with an overall grade-point average of 2.8 or better and have three letters of recommendation. Diverse life experiences, including previous employment, volunteer work, and community service which reflect leadership, responsibility, multicultural involvement, multilingual abilities, and other unusual skills and knowledge are evaluated. Consideration is also given to social and economic disadvantagement 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 25 students each Fall Quarter. In addition to the regular *UC Undergraduate Application Packet* which must be filed with the Office of Undergraduate Admissions and Relations with Schools, 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 Louis Factor Building, UCLA, Los Angeles, CA 90024.

You can find a discussion of the prenursing curriculum and prehealth advising in "Preparing for a Professional School" in Chapter 5.

Degree Requirements

The Bachelor of Science degree in Nursing is granted on fulfillment of the following requirements.

(1) You must complete 45 required courses (180 quarter units) of college work and satisfy the general University requirements.

(2) Of the required 45 courses, at least 21 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 25 courses (100 quarter units) of upper division coursework toward the degree, including Nursing 101, 104A, 104B, M105, 109, 120A through 120F, 184, 190A, 190B, 192, 193, 195, four electives, Public Health 100A, 180.

(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 a grade of C or better in the following courses: Nursing 101, M105, 109, 120A through 120F, 190A, 190B.

(6) You must have been enrolled in the School of Nursing during your final three quarters in residence; the last nine courses must be completed while so enrolled.

Study Lists: You may not enroll in more than four courses per quarter 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 with the Bachelor's Degree

College 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 for college honors, you must have completed at least 90 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 graduate program with the highest grade-point average in all nursing courses.

Master of Nursing Degree

The School of Nursing offers graduate study leading to the Master of Nursing (M.N.) degree. 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

(1) You must have graduated 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. If you have completed other curricula (e.g., graduated from an international institution), you may be required to enroll in certain undergraduate nursing courses which generally may not be applied toward requirements for advanced degrees.

(2) You must have 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 Public Health 100A must be completed before entering the school.

(4) An upper division nursing research course, taken at an NLN-accredited institution and equivalent to Nursing 193, must be completed before entering the school.

(5) Professional and/or academic competence in nursing attested through three letters of recommendation is required.

(6) A satisfactory scholarship record is required.

(7) Since written and verbal communication skills are basic to the practice of nursing, it is essential that students read, write, and speak English well. International applicants from countries in which English is not the primary language and medium of instruction, whether licensed registered nurses in the United States or not, are required to pass the Test of English as a Foreign Language (TOEFL) with a score of 550 or better. Refer to "Proficiency in English" under "Graduate Admission" in Chapter 3 for further information.

(8) All international applicants who are not licensed registered nurses in the United States, prior to consideration for admission, are required to pass the Committee on Graduates of Foreign Nursing Schools (CGFNS) examination.

In addition to the Graduate Division application, you must also file the Application for Admission to Graduate Study in the School of Nursing, available through the Student Affairs Office, School of Nursing, 2-200 Louis Factor Building, UCLA, Los Angeles, CA 90024. Application deadlines are June 1 for Fall Quarter and December 30 for Spring Quarter. 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: Maternity, pediatrics.

Medical-Surgical Nursing: Cardiopulmonary, general medical-surgical, nursing administration, oncology.

Primary Ambulatory Care / Family Nurse Practitioner: Family, gerontology, occupational health.

Psychiatric-Mental Health Nursing: Child mental health, community mental health, consultation liaison nursing, ethnic mental health, psychiatric nursing.

You may choose to add preparation in education or administration to your clinical requirement.

Course requirements for each specialty area are detailed below.

Degree Requirements

(1) A minimum of 10 courses (40 units) in the 100, 200, 400, and 500 series is required; eight of the courses (32 units) must be taken in the School of Nursing, with five (20 units) in the 200 and 400 series. Additional coursework is required to fulfill the requirements for certain areas of 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. A grade of B is required in graduate clinical nursing courses in order to advance to the next clinical course in a series.

(3) A minimum of three quarters of full-time enrollment (eight units per quarter) is required for academic residence.

(4) Successful completion of a comprehensive examination or a thesis is required.

Course Requirements

You must successfully complete a minimum of one course from each of the following areas:

(1) Research in nursing (Nursing 204).

(2) Nursing theory (Nursing 203, 210, 211, 212, M217, 221, 222, 223, 224, 225).

(3) Cultural diversity (Nursing M158, 196, M217 if not used to meet the nursing theory requirement, 250, 251, Anthropology 131, 134, 135A, 135B, 155, M234Q, M236P, 261, 262, M263Q, Asian American Studies 200A or 200B, Psychiatry 240 — student must petition to the School of Nursing before enrolling to receive credit, Public Health 174E, 270, M271, M276, M283G, Sociology 124, 151, or 155).

(4) Clinical practice (Nursing 401, 402A, 402B, 403, 405, 414, 415, 416, 417, 421A through 429C, 440A, 440B, 441A, 441B). Courses selected from clinical practice must be completed in accordance with the requirements for clinical courses listed under each specialization.

(5) Clinical specialization.

Additional course requirements vary according to specialty area listed below.

Maternal-Child Health

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 neonatal intensive care. This specialty requires a minimum of 10 courses, including Nursing 203, 204, one cultural diversity course, 212, 223, 422A, 422B, 422C.

Pediatric 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 children and families. Guided options include children and families experiencing acute/critical illness, chronic illness, developmental disabilities, neonatal adaptation, or oncology. This specialty requires a minimum of 10 courses, including Nursing 203, 204, one cultural diversity course, 212, 223, 421A, 421B, 421C.

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, general medical-surgical nursing, nursing administration, 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 is highly recommended before entering this option. Graduates are expected to function as cardiopulmonary nurse clinicians, teachers, consultants, or research associates. This option requires a total of 10 courses, including Nursing 204, 210 or 211, one cultural diversity course, 415, 423A, 423B, 423C.

General Medical-Surgical: The goal of this option is to prepare clinicial specialists in general medical-surgical nursing. Students are encouraged to develop their own clinical focus in areas of acute chronic illness (e.g., critical care, trauma nursing, diabetes, neurological nursing, rehabilitation, geriatrics). At least two years of prior experience in medical-surgical nursing is highly recommended. This option requires a total of 10 courses, including Nursing 204, one theory course, one cultural diversity course, 423A, 423B, 423C, one elective course, and one course from 203, 401, or 403.

Nursing Administration: This option focuses on advanced clinical practice, 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 clinical and 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 quarters of full-time study, a summer session, and a three-month 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, Division of Health Services Management, and the Graduate School of Management. Nursing administration students may select medical-surgical nursing as their clinical specialization. This program requires a total of 16 courses, including Nursing 204, one theory course, one cultural diversity course, 423A (eight units), 423B (eight units), 478A-478B, and seven health services/financial management courses (Management 403, 408, Public Health 130, 131, 430, 431 or Management 412, 436).

Oncology: The comprehensive care of the cancer patient requires that nurses be prepared in theory and skills to minister to the patient's total needs — physical, psychological, emotional, social, and spiritual. This option is designed to prepare clinical nurse specialists for the interdisciplinary team responsibility for cancer prevention, treatment, and rehabilitation. In addition to clinical competence in preventive, detection, and rehabilitative phases of cancer care, emphasis is directed to the preparation of the clinician in research, teaching, administration, and consultation. This option requires a total of 11 courses, including Nursing 203, 204, one cultural diversity course, 401, 416, 417, 423A, 423B, 423C.

Primary Ambulatory Care/Family Nurse Practitioner Specialty: This specialty prepares family nurse practitioners to take a leadership role in the care of individuals throughout the lifespan. 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.

Gerontology: 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. Interested students should request the fact sheet for this option.

Occupational Health: 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 is 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. Interested students should request the fact sheet for this option.

Psychiatric-Mental Health Nursing Specialty: The primary intent of this specialization is the preparation of clinicians who can function in leadership, educational, research, practice, and consultative roles in mental health settings. 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 encompasses two subspecialties: community mental health (nurse therapist and consultant to health agencies) and psychiatric nursing (nurse therapist who serves individuals, groups, and families with acute or chronic mental health problems). Options within the subspecialties include child mental health (needs and problems of various age groups of children and their families), consultation liaison nursing (needs and problems of clients and consultees in general medical inpatient and outpatient settings), and ethnic mental health (health needs and problems of selected ethnic groups).

Community mental health subspecialty requires Nursing 204, one theory course, one cultural diversity course, 405, 424A, 424B, 440A-440B, 441A-441B.

Psychiatric nursing subspecialty requires Nursing 204, one theory course, one cultural diversity course, 405, 424A, 424B, 424C, one elective course.

Child mental health option requires courses listed under the psychiatric nursing subspecialty plus Nursing 234, or courses listed under the community mental health subspecialty plus Nursing 234.

Consultation liaison nursing option requires Nursing 204, one theory course, one cultural diversity course, 403, 405, 424A, 424B, 440A-440B, 442.

Ethnic mental health option requires Nursing 204, one theory course, 260, 403, 405, 424A, 424B, 440A-440B, 441A-441B, five cognate courses, a seminar in cultural concepts.

Thesis Plan

If you choose the thesis plan, you normally select a thesis committee by the beginning of your third quarter or following completion of Nursing 204 and 205A or 205B. You are expected to complete the thesis within the normal five- to seven-quarter time period. Completed theses should be filed approximately two weeks before the awarding of the degree.

Comprehensive Examination Plan

The comprehensive examination is given in written form and is scheduled each quarter. You are eligible to take the examination during the quarter 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.

Upper Division Courses

101. Introduction to the Art and Science of Nursing (8 units). Lecture, four hours; discussion, two hours; laboratory, 12 hours; autotutorial laboratory/seminars, variable. An introduction to nursing theory and practice. Content includes the following modules: nursing process, pharmacology, interpersonal and technical skills. Methodology includes laboratory, lectures, discussion, seminars, autotutorial laboratory, and clinical application.
Ms. Roach and the Staff

104A. The Behavior of Man in Health and Illness. An examination of the health-illness continuum from the framework of social and biological sciences. Content includes role theory, developmental theory, transcultural communication theory, and other theories relevant to nursing practice. Ms. Vasta

104B. The Behavior of Man in Health and Illness. Prerequisite: course 104A. An examination of the health-illness continuum from the framework of illness as a stressor and the possible responses to such stress. Content includes anxiety, pain, cognitive disturbances, loss, and other responses relevant to nursing practice. Ms. Vasta

M105. Human Physiology. (Same as Physiology 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 the human body. Ms. Seraydarian

109. Communication in Health Care. Lecture, two hours; laboratory, three hours. Prerequisite for nonnursing majors: 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. Topf

120A. Clinical Nursing. Lecture, four hours; laboratory, 24 hours. Prerequisites: courses 101, M105, 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 concepts of growth and development related to the nursing care of the child and his family. Ms. Bowden (five weeks)

120B. Clinical Nursing. Lecture, four hours; laboratory, 24 hours. Prerequisites: courses 101, M105, 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 concepts of reproduction to the nursing care of the family. (Five weeks)

120C. Clinical Nursing. Lecture, four hours; laboratory, 24 hours. Prerequisites: courses 101, M105, 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 related to the nursing care of the patient undergoing medical interventions.
Ms. Roach (five weeks)

120D. Clinical Nursing. Lecture, four hours; laboratory, 24 hours. Prerequisites: courses 101, M105, 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 related to the patient undergoing surgical interventions.
Ms. Grech (five weeks)

120E. Clinical Nursing. Lecture, four hours; laboratory, 24 hours. Prerequisites: courses 101, M105, 109. 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 the nursing care of individuals, groups, or communities.
Ms. Vasta (five weeks)

120F. Clinical Nursing. Lecture, four hours; laboratory, 24 hours. Prerequisites: courses 101, M105, 109. Clinical application of nursing theory in community situations: acute care, convalescent, and ambulatory. Theoretical content includes pathophysiology, pharmacology, and treatment modalities. Application of community health concepts to nursing care in public health agencies. (Five weeks)

M158. Health in Culture and Society. (Same as Anthropology M168.) Prerequisite: upper division standing. An examination of the 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. A study of the evolution of nursing, focusing on historical, ethical, moral, legal, and institutional ramifications of nursing practice. In addition, the rights, obligations, and societal and institutional expectations of the professional nurse.
Ms. Ver Steeg

188. Seminar in Physiology (2 units). Prerequisite: course M105 or equivalent. Student presentation of selected topics in physiology based on recent monographs, review articles, and original research papers. Topics designed to amplify and extend information presented in course M105 lectures. May be repeated for credit. Ms. Seraydarian

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. An 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. Selected Area of Clinical Concentration (6 units). Lecture, two hours; laboratory, 20 hours. Prerequisites: courses 101, 104A, 104B, 120A through 120F. Beginning concentration in a clinical area of student's choice.

190B. Selected Area of Clinical Concentration (6 units). Lecture, two hours; laboratory, 20 hours. Prerequisites: courses 101, 104A, 104B, 120A through 120F, 190A. Beginning concentration in a clinical area of student's choice.

192. Physical Assessment of the Adult. Discussion, one hour; laboratory, three hours; individual study, three hours minimum. Prerequisites: courses 101, M105, 109. Designed to provide in-depth review and synthesis of the physical assessment skills and knowledge introduced in prerequisite and concurrent nursing courses. Individual study, using audiovisual aids in the laboratory and the required text, is mandatory and is supplemented by one hour of discussion per week. Emphasis on (1) reviewing and application of health history taking, (2) performing a comprehensive physical examination, (3) identifying deviations from the usual or anticipated anatomical and organ conditions, and (4) analyzing and reporting collected data. Ms. Stuart and the Staff

193. Introduction to Research. An 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.

194. Computer Programs in Nursing Education and Health Care. (Formerly numbered 198A.) Lecture, two hours; laboratory or field, four hours. An introductory course in the review and evaluation of computer programs in nursing education and health care settings. Examination of programs in view of existing criteria in education and requirements for meeting people's health care needs. P/N grading.
Ms. Chang

195. Principles of Change and Change Agent Roles. Lecture, two hours; discussion, two hours. Theories and methods of change and their application to nursing. Principles of leadership, teaching-learning, health delivery systems, organization of nursing care, and patient advocacy. Mr. Clochesy

196. Health Care Problems of Minority Group Members. Prerequisite: Sociology 1. Description and discussion of the special health care problems that members of minority groups face which may be related to socioeconomic status as well as ethnic background and subcultural differences. Ms. Tien

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 the degree requirements. P/NP or letter grading.

Graduate Courses

Research in Nursing, Nursing Theory, and Cultural Diversity

203. Theoretical Frameworks for Nursing Practice. Comparative study of selected conceptual models of nursing and the recipient of nursing, with particular emphasis on the regulatory model, the adaptation model, the supplementary model, and the complementary model. Ms. Derdiarian

204. Research in Nursing: An 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 the 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 the 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

210. Respiratory Physiology as It Relates to Nursing. Lecture, three hours; discussion, one hour; seminars. Prerequisite: upper division course in human physiology. An advanced treatment of the 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 course in human physiology. An advanced treatment of the 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 the Reproductive Years. Lecture, two hours; discussion, one hour. An 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 the family's definition of the situation, resources, strategies for coping, and utilization of professional services; their relevance for nursing practice. Ms. Koniak and the Staff

M217. Medical Anthropology. (Same as Anthropology M263.) Lecture, three hours. Prerequisite: course M158 or consent of instructor. Any of the topics covered in course M158 are selected each quarter for intensive literature review and independent projects. May be repeated for credit.

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. Putnam

222. The Concept of Grief and Loss. Lecture, three hours; laboratory, two to four hours. Prerequisite or corequisite: clinical nursing course. The concepts and theories of grief and loss, with particular emphasis on the loss of a significant other. Discussions about death and the dying person, with the intent of assisting the care giver to deal more effectively with a person and/or family involved in a life-threatening experience. Ms. van Servellen and the Staff

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 the critique of pertinent literature. Ms. Nash, Ms. Verzemnieks

224. Problems in Patient Motivation. An exploration of the phenomena which may occur when a person assumes the role of a sick patient. Ms. Topf

225. Problems in Environmental Management. The prevention and treatment of nursing problems related to conditions of the psychophysical and social environment.

234. Issues in Health Care. Prerequisite: consent of instructor. A comprehensive course dealing with present and future views of health care and the roles of health team members as viewed by society and influenced by societal values. Selected health care issues debated by students utilizing an in-depth literature review on the issue. Ms. Ver Steeg

250. Seminar: Nursing in Other Cultures. Prerequisite: consent of instructor. Discussion of anthropological principles which affect nursing care in a particular cultural environment. Individual research projects based on the medical problems found in such an environment and the projected nursing interventions relative to those findings. Ms. Tien

251. Nursing Care to Ethnic People of Color in the United States. Prerequisites: course 196 and graduate standing, or consent of instructor. Selected theories from nursing and other sciences and their application to the delivery of intracultural and transcultural nursing care. Emphasis on value orientations, sociocultural perceptions and cognitions of health and illness, and ethnomedical health practices as predictive factors in analyzing health care delivery to ethnic people of color. Ms. Tien

260. Seminar in the Integration of Cultural Concepts and Mental Health Nursing (2 units). Seminar, two and one-half hours (eight weeks). Prerequisites: course 424B, a minimum of two cultural diversity cognate courses, consent of instructor. Corequisite: course 403. Discussion of the concepts of culture, language, life-style, and health practices which influence the practice of primary care among Asian/Pacific, black, Hispanic/Latino, and Native American people. Ms. Tien

264. Seminar in Primary Ambulatory Care. Corequisites: courses 402A and/or 402B, or consent of instructor. Discussion of the concepts of team practice, interprofessional and intraprofessional relationships, legal issues, and the socioeconomic aspects of primary care. Ms. Ver Steeg

Clinical Practice

401. Nursing Assessment and Intervention. Lecture, two hours; laboratory, four to eight hours. Prerequisite or corequisite: course 203. Instruction and experience in the systematic assessment of patients for the identification of nursing problems. Discussion and evaluation of major modes of interventive practice. Ms. Derdiarian

402A-402B. Primary Diagnosis for Nurse Practitioners. Lecture, four hours; laboratory, four hours; demonstration/practice, two hours. Prerequisites: successful completion of anatomy and physiology pretest, 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. Stuart and the Staff

403. Physical Assessment for Clinical Practice. Prerequisite: consent of instructor. An introductory study of the basic techniques of history taking and physical examination which are used in clinical practice as part of the total nursing assessment process, including theory, demonstration, and practice of physical assessment methodology. Ms. Stuart and the Staff

404. Comprehensive Group Theory. Lecture, two hours; laboratory, two hours. An in-depth study of group dynamics and group therapy, applicable to any health service area, with emphasis on the study and application of group theory and practice relevant to nursing. Students gain in-depth knowledge of group dynamics and group therapy, know how to apply the above theory to any area of nursing, develop a beginning ability to function as both leader and participant in the area of group dynamics and/or group therapy, and develop the ability to evaluate the effectiveness of group therapy. Ms. van Servellen

405. Assessment in Psychiatric Nursing. Lecture, two hours; laboratory, six to eight hours. A preparatory course for advanced clinical practice. A critical examination of the concepts and strategies which affect assessment of psychological behavior. Ms. Odum and the Staff

M410A. Nursing Care of the 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 handicapping conditions of childhood and their effects on the individual and the 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 the implementation of intervention strategies. Series of three courses integrates didactic material and clinical experience. Ms. Betz (F)

M410B. Nursing Care of the 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 the philosophical and conceptual models affecting care delivery for the developmentally disabled. Emphasis on intervention strategies necessary for primary, secondary, and tertiary prevention. Ms. Betz (W)

M410C. Nursing Care of the 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 the assessment, planning, and delivery of health care to the developmentally disabled in a variety of settings. Emphasis on the expanded role of the nurse. Ms. Betz (Sp)

414. Current Perspectives in Respiratory and Cardiovascular Nursing (2 units). Lecture, one hour; discussion, one hour. Exploration of selected problems, trends, and issues in respiratory and cardiovascular pharmacology, with emphasis on their significance for the clinical nurse specialist. Ms. Cooper

415. Assessment in Respiratory and Cardiovascular Nursing. Introduction to the basic methods of assessing respiratory and cardiovascular function in health and illness, with emphasis on their application in clinical nursing practice. Ms. Dracup

416. Oncology and Treatment of Cancer. Lecture, two hours; discussion, one hour; laboratory, eight to 10 hours. Prerequisite: consent of instructor. Basic knowledge from biological, behavioral, and medical sciences for understanding the development, diagnosis, treatment, and prognosis of cancer. Nursing care management related to diagnostic and treatment modalities. Ms. Sarna

417. Systematic Approach to Oncologic Nursing. Lecture, two hours; discussion, two hours; laboratory, eight to 10 hours. Prerequisites: course 416, consent of instructor. Nursing management of persons with various types of malignancies. Emphasis on the assessment of special physical and psychosocial problems of patients with diagnoses of cancer in a specific site. Provides students with theoretical and technical skills necessary for the interventions of these problems. Ms. Sarna

421A. Clinical Nursing Care of Children. Discussion, two hours; laboratory, 16 to 20 hours. Prerequisites: courses 203, 223. The application of a theoretical model and the nursing process to a specific, identifiable patient population in a pediatric setting, with special emphasis on assessment and diagnosis. Content covers each aspect of the nursing process. Ms. Verzemnieks and the Staff

421B. Advanced Clinical Nursing Care of Children (8 units). Discussion, three hours; laboratory, 20 to 30 hours. Prerequisite: course 421A. The role of the clinical specialist in pediatric nursing, with emphasis on the practitioner core of the role. Students identify a selected patient population for whom they plan and implement the nursing process from assessment through evaluation. Content includes theoretical and practical issues related to the clinical specialist role. Ms. Verzemnieks and the Staff

421C. Clinical Specialization in Nursing Care of Children (8 units). Discussion, three hours; laboratory, 20 to 30 hours. Prerequisite: course 421B. Required for the pediatric clinical nursing specialty. The practitioner role is continued in this course to foster consolidation of knowledge and skills. Emphasis on the consultation, staff development, research, and patient advocacy dimensions of the clinical nurse specialist role. Ms. Verzemnieks and the Staff

422A. Clinical Maternity Nursing. Discussion, three hours; laboratory, 16 to 20 hours. Prerequisites: one theory course, consent of instructor. Emphasis on developing skill in the utilization of the assessment, intervention, and evaluation phases of the nursing process with childbearing families. Examination of family-centered orientations and theoretical models as they relate to the development of nursing practice and care giving. Ms. Ludington and the Staff

422B. Advanced Clinical Maternity Nursing (8 units). Discussion, three hours; laboratory, 20 to 30 hours. Prerequisite: course 422A. Knowledge and clinical expertise refined and extended, with emphasis on high-risk conditions in the reproductive process. Emphasis on the prescriptive, intervention, and evaluative phases of the nursing process and on teaching, counseling skills, and collegial relations. Ms. Koniak and the Staff

422C. Clinical Specialization in Maternity Nursing (8 units). Discussion, three hours; laboratory, 20 to 30 hours. Prerequisite: course 422B. Further development of clinical expertise in areas of the high-risk and/or normal conditions encountered during the reproductive cycle as they relate to the phases of the nursing process. Emphasis on coordination of care, patient and family education, counseling, and consultation. Ms. Koniak

423A. Clinical Medical-Surgical Nursing (8 units). Lecture, four hours; laboratory 12 hours. Prerequisites: course 204, one theory course. An advanced course in the theory and practice of the nursing care of medical-surgical adults. Major emphasis on the introduction of assessment and diagnosis of nursing problems within the UCLA conceptual framework for nursing practice. Focus on the assessment of physiological and psychological changes in clients as they move on the health-illness continuum. Ms. Nyamathi and the Staff

423B. Advanced Clinical Medical-Surgical Nursing (2 to 8 units). Lecture, two hours; seminar, 90 minutes; laboratory, 15 to 30 hours. Prerequisite: course 423A; for nonmedical-surgical specialization students: consent of instructor (may enroll for two units). Continued refinement of the nursing process and extension of professional knowledge and skills with a selected patient population. Emphasis on selection, utilization, and evaluation of interventions for nursing problems of medical-surgical patients. Students select a specific patient population for concentration in the course: (1) cardiopulmonary, (2) general medical-surgical, (3) oncology. Ms. Gonzales and the Staff

423C. Clinical Specialization in Medical-Surgical Nursing (2 to 8 units). Lecture, two hours; seminar, 90 minutes; laboratory, 15 to 30 hours. Prerequisite: course 423B; for nonmedical-surgical specialization students: consent of instructor (may enroll for two units). Required for the medical-surgical specialization. Examination and implementation of the clinical nurse specialist role with a specific patient population and/or within a particular practice setting. Emphasis on the functional aspects of the role: practitioner, educator, consultant, researcher. Students select a specific patient population for concentration in the course: (1) cardiopulmonary, (2) general medical-surgical, (3) oncology. Ms. Omery and the Staff

424A. Clinical Psychiatric Nursing. Discussion, three hours; laboratory, eight to 10 hours. Prerequisites: course 405, consent of instructor. Focus on the process of psychotherapy, with specific emphasis on the knowledge and skills of assessment and diagnosis. Content includes theories and techniques of practice. Ms. Birckhead and the Staff

424B. Advanced Clinical Psychiatric Nursing (8 units). Discussion, three hours; laboratory, 20 hours. Prerequisites: course 424A, consent of instructor. Refinement and extension of the process of psychotherapy, with emphasis on prevalent psychiatric health issues. Ms. van Servellen and the Staff

424C. Clinical Specialization in Psychiatric Nursing (8 units). Seminar, two hours; laboratory, 24 hours. Prerequisites: course 424B, consent of instructor. Required for the psychiatric nursing specialization. Supervised internship. Students select the setting and population. Ms. van Servellen and the Staff

425A. Advanced Clinical Gerontological Nursing. (Not the same as course 425A prior to Winter Quarter 1986.) Lecture, three hours; discussion, one hour; laboratory, eight hours. Prerequisite: one graduate course in nursing theory. 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 of rehabilitation of the chronically ill aged. Ms. McBride, Ms. Stuart

425B. Clinical Specialization in Gerontological Nursing (8 units). (Formerly numbered 425C.) 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. Ms. McBride, Ms. Stuart

429A-429B. Preceptorship in Primary Ambulatory Care Nursing (8 units each). Lecture, three hours; discussion, three hours; laboratory, 16 hours minimum. Prerequisites: courses 402A-402B, consent of instructor. Theory and clinical practice in nursing management and evaluation of health problems in a selected ambulatory population. Emphasis on health maintenance. Attention to the developmental and cognitive needs of clients in relation to family, social, and cultural structures.

429C. Advanced Preceptorship in Primary Ambulatory Care Nursing (8 units). Lecture, three hours; discussion, two hours; laboratory, 24 hours minimum. Prerequisites: courses 429A-429B, consent of instructor. Required of students who want to meet the requirements for preparation as a nurse practitioner as established by the California Board of Registered Nursing. Emphasis on the refinement and extension of assessment, management, and evaluation skills, family health care, and community health concepts. Placements provide the opportunity for an in-depth focus on a specific group of health problems.
Ms. Murata and the Staff

440A-440B. Clinical Specialization in Community Mental Health Consultation. Lecture, three hours; clinical, 10 hours. Prerequisites: course 424B, consent of instructor. Corequisites: courses 441A-441B. The study and application of mental health consultation theory and practices relevant to community mental health nursing. Focus on group consultation skills. The development of the nurse-consultant role in the interdisciplinary health team approach to mental health services. In Progress grading. Ms. Tien

441A-441B. Clinical Specialization in Community Organization. Discussion, three hours; clinical, 10 hours. Prerequisites: course 424B, consent of instructor. Corequisites: courses 440A-440B. The process of community mental health assessment and program evaluation and planning for health services. Emphasis on health advocacy, prevention of mental illness, and planned change concepts. In Progress grading. Ms. Flaskerud

442. Liaison Nursing. Lecture, three hours; laboratory, 10 hours. Prerequisites: courses 403, 440A. Behavior of groups of individuals studied from an intersystem framework. Students focus on the interactions of the health care providers and clients in general hospitals, clinics, and community health agencies. Attention to the variables influencing the health care providers' assessments and interventions concerning the clients' behavioral problem(s). This framework utilized to evaluate the stability and direction of the organization as these are causally related to the system's effectiveness in the delivery of quality health care. Examination of the interrelatedness of such variables as human services, sociopolitical and cultural life-style factors of the system.
Ms. Flaskerud

Functional Preparation

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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.

473. Generic Consultation (4 to 8 units). Discussion, three hours; laboratory, 10 to 20 hours. Prerequisites: introductory and intermediate clinical practicums, one course in group dynamics and process, or equivalent. The study and application of consultation theory and practice relevant to nursing. Emphasis on the refinement of knowledge and skills necessary to establish a nursing role as an interdependent clinical nursing consultant. Concepts based on those theories from the following areas: group dynamics, learning, communication, change, and nursing process.
Ms. van Servellen and the Staff

475. Human Relations in Administration. A systematic study of the principles of human relations in administration, with emphasis on their application to the field of nursing.

478A-478B. Seminar in Nursing Administration. Prerequisite: consent of instructor. Analysis of current issues and trends in health care systems, with emphasis on integrating and applying management theories to the practice of nursing administration. Extensive discussion of key financial and professional factors affecting delivery of nursing services.
Ms. Burner

Special Studies

596. Directed Individual Studies for Graduate Students (4 to 8 units). Prerequisite: consent of instructor. Opportunity for graduate students in nursing to pursue special research interests. May be repeated for credit, but only four units may be applied toward the M.N. 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 the M.N. degree requirements. S/U grading.

598. Research for Thesis (4 to 8 units). Prerequisite: consent of instructor. May be repeated for credit, but only four units may be applied toward the M.N. degree requirements. S/U grading.

School of Public Health

Abdelmonem A. Afifi, Acting Dean

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Public health is concerned with understanding, preventing, and controlling disease, and with promoting health in populations. Its goal is to ensure that the protection and improvement of the health of the public is accomplished by the most effective means consistent with equity for all individuals.

The mission of the UCLA School of Public Health is to develop, integrate, and apply pertinent knowledge from the biological, physical, and social sciences to enhance community health. In this context health is defined as a positive condition requiring not only the control of disease but also the presence of sufficient physical and mental vigor to promote well-being and improve the quality of life. To fulfill this mission the school (1) educates future public health professionals, (2) conducts research to protect and improve health and health services, and (3) contributes knowledge, expertise, and service to the community.

Seven areas of study are offered: behavioral sciences and health education, concerned with the study and implementation of behavior which prevents disease and enhances health; biostatistics, which develops statistical and analytic techniques for public health use; environmental and occupational health sciences, which elucidates health hazards in the general environment and in the workplace; epidemiology, concerned with the nature, extent, and distribution of disease and health in populations; health services, concerned with the organization, quality, and distribution of health care; nutritional sciences, concerned with identifying essential components of diet and promoting good nutritional practices; and population and family health, which identifies health problems of and promotes health in high-risk groups such as women, children, and the poor.

Students are prepared for careers in the public and private sectors, in health agencies, hospitals, industry, and voluntary organizations, and for careers in research and teaching.

Photo: Maternal and child health — assessment of primary health care, Belize, Central America.

School of Public Health

16-071 Public Health, (213) 825-5516

Professors

Abdelmonem A. Afifi, Ph.D. *(Biostatistics), Acting Dean*
Roslyn B. Alfin-Slater, Ph.D. *(Nutritional Sciences), Assistant Dean for Academic Affairs*
Lawrence R. Ash, Ph.D. *(Infectious and Tropical Diseases)*
Allan Ralph Barr, Sc.D. *(Infectious and Tropical Diseases)*
Emil Berkanovic, Ph.D. *(Behavioral Sciences and Health Education)*
Judith Blake, Ph.D. *(Fred H. Bixby Professor of Population Policy)*
Robert H. Brook, M.D., Sc.D. *(Health Services)*
Potter C. Chang, Ph.D. *(Biostatistics)*
Virginia A. Clark, Ph.D. *(Biostatistics)*
Roger Detels, M.D., M.S. *(Epidemiology)*
John Edmond, Ph.D. *(Nutritional Sciences)*
Robert M. Elashoff, Ph.D. *(Biostatistics)*
Jonathan E. Fielding, M.D., M.P.H. *(Health Services)*
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William H. Glaze, Ph.D. *(Environmental and Occupational Health Sciences)*
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Robert I. Jennrich, Ph.D. *(Biostatistics)*
Snehendu B. Kar, Dr.P.H. *(Behavioral Sciences and Health Education; Population and Family Health), Chair and Associate Dean*
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Jess Kraus, Ph.D. *(Epidemiology and Occupational Health)*
Peter A. Lachenbruch, Ph.D. *(Biostatistics)*
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Charlotte G. Neumann, M.D., M.P.H. *(Population and Family Health)*
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Stuart O. Schweitzer, Ph.D. *(Health Services)*
William Shonick, Ph.D. *(Health Services)*
Marian E. Swendseid, Ph.D. *(Nutritional Sciences)*
Paul R. Torrens, M.D., M.P.H. *(Health Services)*
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Telford H. Work, M.D., M.P.H., D.T.M.&H. *(Infectious and Tropical Diseases)*

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Lester Breslow, M.D., M.P.H.
John M. Chapman, M.D., M.P.H.
Wilfrid J. Dixon, Ph.D.
Olive Jean Dunn, Ph.D.
Carl E. Hopkins, Ph.D., M.P.H.
Raymond J. Jessen, Ph.D.
Edward B. Johns, Ed.D.
Alfred H. Katz, D.S.W., M.A.
Ralph W. McKee, Ph.D.
James F. Mead, Ph.D.
Edward L. Rada, Ph.D.
Milton I. Roemer, M.D., M.P.H.
John F. Schacher, Ph.D.
Frank F. Tallman, M.D.

Associate Professors

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Linda B. Bourque, Ph.D. *(Population and Family Health)*
E. Richard Brown, Ph.D. *(Behavioral Sciences and Health Education)*
Albert Chang, M.D., M.P.H. *(Population and Family Health)*
Shan Cretin, Ph.D., M.P.H. *(Health Services)*
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Climis A. Davos, Ph.D. *(Environmental and Occupational Health Sciences)*
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John R. Froines, Ph.D., *Acting (Environmental and Occupational Health Sciences)*
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Sander Greenland, Dr.P.H. *(Epidemiology)*
William C. Hinds, Sc.D. *(Environmental and Occupational Health Sciences)*
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Hal Morgenstern, Ph.D. *(Epidemiology)*
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Judith M. Siegel, Ph.D., M.S.Hyg. *(Behavioral Sciences and Health Education)*
Jane L. Valentine, Ph.D. *(Environmental and Occupational Health Sciences)*
Barbara R. Visscher, M.D., Dr.P.H. *(Epidemiology)*

Assistant Professors

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Shoshanna Churgin, Dr.P.H. *(Health Services)*
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Gary A. Richwald, M.D., M.P.H. *(Population and Family Health)*
Michael G. Ross, M.D., M.P.H., *in Residence*
Jeremy M.G. Taylor, Ph.D., *in Residence (Biostatistics)*
Robert O. Valdez, Ph.D., *in Residence*
Michael A. Vojtecky, Ph.D., M.P.H. *(Behavioral Sciences and Health Education)*

Lecturers

Jean L. Mickey, Ph.D. *(Biostatistics)*
Florence C. McGucken, M.S., *Emeritus*

Adjunct Professors

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Linda Beckman, Ph.D., M.S. *(Behavioral Sciences and Health Education)*
Edith M. Carlisle, Ph.D. *(Nutritional Sciences)*
Arthur Chung, M.D.
Brian E. Henderson, M.D. *(Epidemiology)*
Leona M. Libby, Ph.D. *(Environmental and Occupational Health Sciences)*
Thomas Mack, M.D., M.P.H. *(Epidemiology)*
Joseph P. Newhouse, Ph.D. *(Health Services)*
John M. Peters, M.D., M.P.H., Sc.D.
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John E. Ware, Ph.D. *(Health Services)*

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Arlene Fink, Ph.D. *(Health Services)*
Raymond D. Goodman, M.D., M.P.H. *(Health Services)*
Richard L. Hough, Ph.D. *(Behavioral Sciences and Health Education)*
Jacqueline B. Kosecoff, Ph.D. *(Health Services)*
Jeffrey Pomerance, M.D., M.P.H. *(Population and Family Health)*
Susan M. Preston-Martin, Ph.D., M.P.H. *(Epidemiology)*
Gary H. Spivey, M.D., M.P.H. *(Epidemiology)*
Forest Tennant, M.D., Dr.P.H. *(Epidemiology)*

Adjunct Assistant Professors

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Allyson R. Davies, Ph.D. *(Health Services)*
Daniel Ershoff, Dr.P.H. *(Behavioral Sciences and Health Education)*
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Wilbert Jordan, M.D., M.P.H. *(Health Services)*
Laura M. Lake, Ph.D. *(Environmental and Occupational Health Sciences)*
Alfred C. Marcus, Ph.D. *(Behavioral Sciences and Health Education)*
Edward J. O'Neill, M.D., M.P.H. *(Environmental and Occupational Health Sciences)*
Jose Quiroga, M.D.
Lawrence S. Rubenstein, Ph.D. *(Health Services)*
James W. Sayre, Dr.PH. *(Biostatistics)*
Bernard M. Siegel, M.D. *(Health Services)*
Robert M. Sloane, M.S. *(Health Services)*
Bart B. Sokolow, D.Env. *(Environmental and Occupational Health Sciences)*
Howard M. Staniloff, M.D., M.P.H. *(Epidemiology)*
Marc Strassburg, Dr.P.H. *(Epidemiology)*
Jeffrey B. Wales, Ph.D. *(Health Services)*
Fred W. Wasserman, Dr.P.H. *(Health Services)*
Gary S. Whitted, Ph.D. *(Health Services)*

Adjunct and Visiting Lecturers

Emily Abel, Ph.D., *Adjunct*
Omar Alfi, M.D., *Visiting*
Nancy H. Allen, M.P.H., *Adjunct*
Linda M. Blanchard, M.P.H., *Adjunct*
Stewart N. Blumenfeld, Dr.P.H., *Visiting*
Michael L. Bobrow, B.Arch., *Visiting*
Helene G. Brown, B.S., *Adjunct*
Wen-Pin Chang, M.D., M.P.H., D.M.Sc., *Visiting*
Roger A. Clemens, Dr.P.H., *Visiting*
Carl F. Coffelt, M.D., M.P.H., *Visiting*
Anne H. Coulson, *Adjunct*
Patricia L. Engle, Ph.D., *Visiting*
Marsha A. Epstein, M.D., M.P.H., *Visiting*
Charles M. Ewell, Jr., Ph.D., *Visiting*
Paul M. Fleiss, M.D., M.P.H., *Visiting*
Jay W. Friedman, D.D.S., M.P.H., *Adjunct*
Kennard Friedman, M.S., M.H.A., *Visiting*
Emil Gauvreau, M.P.H., *Visiting*
Paul R. Ginsburg, Ph.D., *Visiting*
Robert D. Girard, LL.B., *Visiting*
Frank C. Gomez, Dr.P.H., *Visiting*
Lois Green, M.P.H., *Visiting*
Pensri Guptavanij, M.D., Ph.D., *Adjunct*
Joseph Hafey, M.P.H., B.A., *Visiting*
Eung-Soo Han, M.D., M.P.H., *Visiting*
Patricia Hassakis, M.D., M.P.H., *Visiting*
Arthur C. Hollister, Jr., M.D., M.P.H., *Visiting*
Patrice Jelliffe, R.N., M.P.H., *Adjunct*
Olive G. Johnson, B.A., *Visiting*
Martine Jozan, M.D., Dr.P.H., *Adjunct*
Stephen W. Kahane, D.Env., *Visiting*
Joel W. Kovner, Dr.P.H., *Visiting*
Kenneth E. Lee, M.S.P.H., *Visiting*
Martin L. Lee, Ph.D., *Visiting*
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Robert G. Lindberg, Ph.D., *Adjunct*
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Lawrence S. Linn, Ph.D., *Adjunct*
J. Robert Liset, LL.B., *Visiting*
Irvin Lourie, M.D., *Visiting*
Eric J. McLaughlin, Ph.D., *Visiting (Health Services)*
Paul M. Merifield, Ph.D., *Visiting (Environmental and Occupational Health Sciences)*
Norma J. Murphy, M.S., *Adjunct (Nutritional Sciences), Associate Field Program Supervisor*
Audrey J. Naylor, M.D., *Adjunct*
Mario Panaqua, B.A., *Adjunct (Nutritional Sciences)*
Sondra T. Perdue, Dr.P.H., *Adjunct (Biostatistics)*
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Stanton J. Price, Dr.P.H., *Visiting*
George W. Prichard, J.D., M.D., M.P.H., *Visiting*
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Pamela Viele Byrnes, M.P.H., *Adjunct (Behavioral Sciences and Health Education)*
Stephen L. Volla, M.P.H., *Visiting*
Lawrence G. Wayne, Ph.D., *Visiting (Epidemiology)*
Walter Wegst, Ph.D., *Adjunct*
Paul F. Wehrle, M.D., *Visiting (Epidemiology)*

The School of Public Health no longer offers a bachelor's degree, but does offer graduate programs leading to both academic and professional degrees in public health and biostatistics and is responsible for the administration of the graduate program in Environmental Science and Engineering, whose description immediately follows the public health programs.

Degrees Offered

Biostatistics	M.S., Ph.D.
Environmental Science and Engineering	D.Env.
Preventive Medicine and Public Health	M.S.*
Public Health	M.P.H., M.S., Dr.P.H., Ph.D.

*Not accepting new students at this time.

Requirements for Graduate Degrees

Admission

Application forms and the *Announcement of the UCLA School of Public Health,* as well as descriptive brochures and applications for the Environmental Science and Engineering Program, may be obtained by writing to the Office of Student Affairs, School of Public Health, 16-071 Public Health, UCLA, Los Angeles, CA 90024. Both the School of Public Health Application for Admission to Graduate Status and the Graduate Division application 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 January 14, 1987, for Fall Quarter 1987 admission. Applications received after the deadline have considerably reduced opportunities for admission and financial aid.

Applicants must meet the University minimum requirement of an acceptable bachelor's degree with a B average in upper division coursework and/or prior graduate study. Exceptionally qualified applicants may be considered on an individual basis. Except for the Division of Population and Family Health, 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 division of the Department of Public Health in which you wish to study. If you need help in deciding on a division, you should speak to the staff in the Office of Student Affairs.

Applicants to the School of Public Health must perform satisfactorily on a recent (within the last five years) Graduate Record Examination (GRE), Medical College Admission Test (MCAT), or Dental Admission Test (DAT) Aptitude Test, which may be accepted in lieu of the GRE by some divisions under certain circumstances. (Note: The Nutritional Sciences and Epidemiology Divisions require 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 require a minimum combined (verbal and quantitative) score of 1,100. Applicants at the doctoral level need a minimum combined (verbal and quantitative) score of 1,200. The analytical section is not required. The Biostatistics Division has different criteria for evaluating performance on aptitude tests for its master's and doctoral degrees.

Refer to the UCLA *Application for Graduate Admission, Fellowship and Financial Aid* for the Test of English as a Foreign Language (TOEFL) requirement for international applicants. For more information on the proficiency in English requirements for international graduate students, refer to "Graduate Admissions" in Chapter 3.

No screening examination is required for admission; however, specified courses are required by the Biostatistics, Environmental and Occupational Health Sciences, Health Services, and Nutritional Sciences Divisions (see below). If your undergraduate coursework has been deficient in breadth of fundamental training, you must take specified undergraduate courses after admission.

Master's Applicants

Your prior program of study should include adequate preparation in mathematics, physical sciences, biological sciences, and social sciences, and typically include 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

(1) Students concentrating in environmental and occupational health sciences should have a bachelor's (or master's) degree in chemistry, physics, biology, engineering, or other appropriate field. Coursework should include three quarters of general chemistry (including quantitative analysis) and two quarters of organic chemistry and/or biochemistry, mathematics through calculus, three quarters of biological sciences, and three quarters of physics. Substitutions for these requirements will be considered for applicants with an otherwise superior academic background.

(2) Students whose field of concentration is nutritional sciences should have a bachelor's degree in biological sciences or related areas, with coursework including three quarters of general chemistry (including quantitative analysis), three quarters of organic chemistry and/or biochemistry, mathematics through calcu-

lus, three quarters of biological sciences (including microbiology and physiology), and two quarters of physics. Substitutions for these requirements will be considered for applicants with an otherwise superior academic background.

(3) Applicants interested in the health services management program in the Division of Health Services must be interviewed by a faculty member in the program. Prior to enrollment, you must demonstrate a basic competency in accounting either by taking an introductory accounting course or by passing a waiver examination administered by the program.

(4) Applicants interested in the population and family health program must have some prior experience in the health field (paid or volunteer).

(5) For admission to the Master of Science in Biostatistics program, you must have completed a bachelor's degree. Majors in mathematics, computer science, or a field of application in biostatistics are preferred. Undergraduate preparation for the program should include Mathematics 31A, 31B, 32A, 32B, 33A, 33B (second-year calculus), or the equivalent.

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.

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.

Mandatory core courses include Public Health 100A or 101A, 112 (114 for epidemiology majors), 130 (230A-230B for health services majors), and 150 or 155. Each core course may be waived if you have taken a similar course elsewhere and can pass the waiver examination.

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. 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.

Behavioral Sciences and Health Education

Public Health 182, 482 (eight units), and five courses (20 units) from 282, 287, 295A, 481, and 181 or 484 are required. In addition, two to three elective courses from the list of specialty areas are required. Individual and experimental 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 quarters 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. In addition, it is possible for students to elect an additional area of concentration in another division.

Biostatistics

Required courses include Public Health 100A, 100B, 100C, and 100D, or 101A, 101B, and 101C; 200A; 401E or 401F or 401G; 402A, 402B (satisfies the field training requirement); three courses from 403, 404, 405, 406. Courses 211A and 211B 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.

Environmental and Occupational Health Sciences

Required courses include Public Health 150, 153 (required for students who have not taken a course in microbiology), 154, 156A or 156B, 253A, 255 (may be repeated for credit), 400, 450, 459, Environmental Science and Engineering 411 (may be repeated for credit). Elective courses should be selected in your area of specialization and in public health, engineering and applied science, chemistry, biology, management, architecture and urban planning, and medicine.

After, or simultaneous with, fulfillment of the core (divisional and schoolwide) requirements, you take courses with emphasis on water quality; environmental management; air pollution; environmental epidemiology; environmental sciences and engineering; industrial hygiene; or environmental toxicology.

Epidemiology

Infectious and Tropical Diseases: Required courses include Public Health 100B, 210, 211A, 211B, 212H, 216A, 216B, 218A, 218B, 220A, 220B, 222 (must be taken each quarter), 400 (for predoctoral students), 596 (for postdoctoral students). Students holding a doctorate in an appropriate biomedical science may petition for waiver of course 400. You must submit a report on a project related to infectious and tropical diseases.

Methodology/Chronic Diseases: Required courses include Public Health 100B, 210, 211A, 211B, 400 (for predoctoral students), 596 (for postdoctoral students), two or four units in behavioral sciences, and two additional courses from 211C, 211D, 212E, 212G, 212I, 212J, 212K, 213, 215A, 215B, 217, 221, 223, 225, 226, 227, 410A, 410B, 411, 414. (Physicians and other postdoctoral students in an appropriate biomedical science may petition for waiver of course 400.) You must submit a report demonstrating competence in epidemiologic methodology.

Health Services

Note: The Division of Health Services is examining the curriculum with a view to its revision. Information regarding requirements for graduation may be subject to change.

Required core courses include Public Health 132, 230A-230B (instead of 130), 238; students in the one-year program may select course 148 instead of 238.

Health Services Management: Management of organizations that deliver personal health care services, including hospitals, mental health and long-term care facilities, clinics, HMOs, and other health service providers. Admission to the program requires one course in accounting and one in microeconomics; prior coursework in management theory, economics, and statistics is highly recommended. Required courses include Public Health 131, 400, 430, 431, 432, 433, 436, 437, 596, Management 403, 408. Elective courses are selected in consultation with your faculty adviser.

Students are admitted only in Fall Quarter. After your first year, and depending on the completion of coursework, you are placed in an administrative residency for seven to nine and one-half months. Residencies are offered by various types of local health care facilities; students receive a stipend of $1,200 to $1,600 per month.

A special two-year concentration in health information systems is offered for students interested in the design, implementation, management, and evaluation of data systems in a wide range of health and health-related organizations. A summer internship is required.

Health Services Organization: An M.P.H. is available as a one-year program for students with prior doctoral degrees. Division core courses are required. Additional courses are determined on an individual basis. No summer internship is required.

Nutritional Sciences

Emphasis is on community nutrition. Required courses include Chemistry 152 or Biological Chemistry 101A and 101B, Public Health 165

or 261A, 260E, 260F, 260G, 260H, 262 or 263 (may be repeated for credit), 400, 460, 461, 463A, 463B. Public Health 162, 167, 264E, 264F, 462 are recommended. Electives should be selected from Public Health 100B, 100C, 166A, 166B, 181, 270, Biology 177, Psychiatry M184.

Of the courses listed above, at least six graduate courses (at least two must be in the 400 series) and at least one seminar course (262, 263) are required.

A minimum of 56 units is required. You must take two seminars during your course of study. If residence is extended beyond four quarters, more than two seminars are required.

Population and Family Health

Emphasis is on population, family health, family planning, reproductive and women's health, maternal and child health, and international health (including nutrition). Two tracks are available — domestic (U.S.A.) and international (primary health care). You are required to complete at least 16 units (for health professionals) or 20 units (for generalists) of divisional courses offered in selected tracks, plus Public Health 125, 171A, 400, 596. Elective courses are selected in consultation with your faculty adviser.

Students without a professional health degree are required to complete at least 60 units for the M.P.H. degree; students with a professional degree may graduate with a minimum of 48 units.

Comprehensive Examination Plan

You must pass two comprehensive examinations, one in the area of specialization, and a centrally administered written examination in the general field of public health. If you fail either examination, you may be reexamined once.

The schoolwide core course comprehensive examination is administered twice each academic year, usually the first Saturday in May and November. The examination in the major field is administered by your division.

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.

Interdivisional International Health

The school offers several options for international or domestic students interested in international health. Faculty in all divisions of the school are actively involved in health-related programs in foreign settings, and many departments on campus have international, health-related interests and courses relevant to health occupations in cross-cultural settings.

If you are interested, specify the division most relevant to your skills area on your application, clearly indicating your international interests. You will be given an appropriate adviser and directed to the international health committee, which is interdivisional and promotes internationally oriented training and research. Its members consult with interested students and attempt to optimize the learning experience.

Applicants with particular interest in primary health care, including maternal and child health, family planning, applied nutrition, family health program planning, administration and evaluation, and refugee health, are advised to apply to the Division of Population and Family 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, UCLA African Studies Center, and/or the Office of Student Affairs, 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, Division of Health Services, and the 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 and who wish in-depth professional preparation for such a career. The program reflects the combined interest of employers, faculty, and students who have recognized the increasing challenges facing managers in the health care industry and the need for individuals who are skilled in dealing with these challenges. Students should request all application materials from the M.B.A. Admissions Office, Graduate School of Management.

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 public health practice and preventive medicine teaching and research. Completion of the program can lead to board eligibility in public health and general preventive medicine — a specialty recognized by the American Board of Preventive Medicine.

The residency currently consists of at least two years of academic training and supervised field training in preventive medicine. The first year is comprised of formal studies for the Master of Public Health (generally in either epidemiology or health services). Other areas may be considered on an individual basis. Application must be made simultaneously for both the residency and admission to the School of Public Health for the M.P.H.

The field training year is individually organized for each resident's particular interests and needs. A variety of opportunities is available at UCLA and in the Los Angeles area, including close working relationships with the Los Angeles County Department of Health Services and the Jonsson Comprehensive Cancer Center. 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 year. For further information, contact the Office of Student Affairs, UCLA School of Public Health.

Master of Science in Public Health

The Master of Science program provides research orientation within the general field of public health. It includes the preparation of a thesis or major written report.

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. Public Health 597 may not be applied toward the degree requirements. No more than 18 full courses may be required for the degree.

Mandatory core courses include Public Health 100A, 100B, and 112 (114 for epidemiology 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.

Areas of Specialization

Areas of specialization and typical course plans, in addition to mandatory courses, are listed below.

Behavioral Sciences and Health Education

Public Health 181, 182, 281, and four to six divisional core courses (selected from an approved list) are usually required. Electives, selected in consultation with an adviser, must include the Public Health 283 series and research methods courses. Normal program length is six quarters.

Environmental and Occupational Health Sciences

Required courses usually include Public Health 150, 153 (required for students who have not taken a course in microbiology), 154, 156A or 156B, 253A, 255 (may be repeated for credit), 258, 459, 598 (a maximum of one course may be applied toward the minimum total course requirement), Environmental Science and Engineering 411 (may be repeated for credit), one course in biological chemistry (a specific course may be listed in the specialty track area). Elective courses should be selected in your area of specialization and in public health, biological chemistry, physical sciences, engineering and applied science, chemistry, biology, microbiology, law, and pharmacology.

At least five of the approximately 13 courses must be at the graduate level (200 and 500 series). In addition, you must complete a laboratory project and thesis.

After, or simultaneous with, fulfillment of the core (divisional and schoolwide) requirements, you take courses with emphasis on water quality; environmental management; air pollution; environmental epidemiology; environmental sciences and engineering; industrial hygiene; or environmental toxicology.

Students specializing in environmental epidemiology should discuss specific course requirements with the Division of Environmental and Occupational Health Sciences and the Division of Epidemiology.

Epidemiology

Infectious and Tropical Diseases: Required courses usually include Public Health 210, 211A, 211B, 212H, 216A, 216B, 218A, 218B, 220A, 220B, 222 (must be taken each quarter). Course 130 (for students planning to enter the Dr.P.H. program or to practice epidemiology in a health department) is recommended. Electives should be selected from courses 116, 214, 219, and other relevant courses in public health and biomedical sciences.

Methodology/Chronic Diseases: Required courses usually include Public Health 210, 211A, 211B, 221, plus one full course in each of demography, biostatistics, data management, and topic specific epidemiology (courses 116, 212D, 212E, 212G, 212H, 212I, 212J, 212K, 213, 214, 215A, 215B, 225, 226, or others). Courses 130 (for students planning to enter the Dr.P.H. program or to practice epidemiology in a health department), 410A, 410B are recommended. Relevant elective courses should be selected in public health and biomedical sciences.

Health Services

Note: The Division of Health Services is examining the curriculum with a view to its revision. Information regarding requirements for graduation may be subject to change.

Required core courses include Public Health 132, 230A-230B, 238. Emphasis is on health planning, health policy analysis, and health services research for clinicians.

Planning: Public Health 134, 138, 243, 248, 403, 444B, one course from the field of health financing, law, or public sector approved by your adviser, one evaluation course, three management courses, and a summer internship are usually required. Courses 100C, 100D, 131, 232, 233, 235, 239, 240, 247, 281, 287, 430, 438, 440A, 446, 447D, 447E, 447F are recommended.

Policy Analysis: Public Health 134, 138, 233, 243, 403, one course from the field of health financing, law, or public sector approved by your adviser, one evaluation course, two management courses, and a summer internship are usually required. Courses 100C, 131, 181, 232, 235, 239, 240, 247, 281, 430, 437, 438, 440A, 447D, 447E, 447F are recommended.

Research: Public Health 136A, 136B-136C, 231, 232, 233, 234A-234B, 235 are usually required. Courses 131, 134, 138, 236, 240, 446, 447D, 447E, 447F are recommended.

Electives, selected in consultation with your adviser, should be chosen from recommended courses and others. A summer field placement (minimum 10 weeks) is required following the first three quarters of study. The equivalent of 18 full courses and six quarters in residence are required for completion of the M.S. degree.

Nutritional Sciences

Emphasis is on nutritional biochemistry. Required courses usually include Biological Chemistry 101A or 201A, 101B or 201B, Public Health 260E, 260F, 260G, 260H, 261A, 261B, and 262 and 596 or 598 (may be repeated for credit). Public Health 165, 264E, 264F are recommended. Elective courses should be selected from Physiology 100, Public Health 100C, 166A, 166B, 167, 181, 461, 462, Biology 177, Biological Chemistry M261.

You must complete a thesis. A minimum of 52 units is required; five of the courses listed above must be at the graduate level (200 or 500 series). It is expected that after the first quarter you will take a seminar each quarter.

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 three 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 Biostatistics

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: Public Health 101A, 101B, 101C, M101D, 200A-200B-200C, 204E, 402A, 402B; any two courses from M201E, 201F, 201G, 201H, 201J, M201K, 201M; Mathematics 150A-150B-150C (in exceptional circumstances, Mathematics 152A-152B and additional directed reading may be substituted).

Other courses in biostatistics or mathematical statistics, or in related areas such as biology, physiology, public health, management, or mathematics, may be selected with your adviser's consent.

A written report and written comprehensive examination covering the above course material are required.

Biostatistical Health Data Management

Unless previously taken, the following courses must be included in the degree program: Program in Computing 1, Public Health 101A, 101B, 101C, M101D, 200A-200B-200C, 203A, 203B, 403, 404 or 405, Mathematics 150A-150B-150C (in exceptional circumstances, Mathematics 152A-152B and additional directed reading may be substituted). One public health course in a division 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 are required.

Comprehensive Examination Plan

The thesis plan is not used. The written comprehensive examination is on your major field only. It is taken during the Spring Quarter of the academic year of your Public Health 200A-200B-200C sequence. Normally no more than one reexamination after failure is allowed.

Master of Science in Preventive Medicine and Public Health

The program is not admitting new students at this time.

Doctor of Environmental Science and Engineering

The program leading to the D.Env. degree is administered and housed in the School of Public Health. Information on the program follows the public health course listings later in this chapter.

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, the 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 the 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 division of the Department of Public Health; (5) approval by the policy admissions committee and the department chair. Screening or evaluation examinations may be required by each division.

Course Requirements

The course requirements in the major field depend on the division 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 divisions other than your major division.

The major division requires an additional area of concentration which may be either inside or outside the school. In divisions 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.

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 division are required. In addition, six full courses (four must be at the 200 or 400 level) in at least two divisions other than your major division are required for breadth; four of these must be in only one other division. Two quarters of research experience prior to beginning the dissertation are required, as is participation in the divisional doctoral seminar. Elective courses should be selected in consultation with your adviser.

Biostatistics

The Dr.P.H. in Biostatistics requires a research orientation for which the coursework for the M.S. in Biostatistics is more appropriate than the coursework for the M.P.H.

A written screening examination of all students entering the doctoral program is required and must be successfully completed before the end of your first year in the program (if not taken prior to entering). Courses covered by this and other examinations are determined in consultation with your adviser and the division faculty. All registered doctoral students enroll in the biostatistics consulting laboratory for one quarter each year.

Beyond the introductory program, the following courses, if not already taken, should be included: Public Health 200B-200C, any four courses from the 201 and 207 series, 203A, M205A-M205B-M205C, 401E through 401G (any two courses), 403, one course from 404, 405; Mathematics 150A-150B-150C. Public Health 402B is required and 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 divisions other than your major division are required for breadth. The major division 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.

Environmental and Occupational Health Sciences

Recommended courses are determined in consultation with your adviser. In addition, six full courses (four must be at the 200 or 400 level) in at least two divisions other than your major division are required for breadth. The major division requires an additional area of concentration which may be either inside or outside the school.

Epidemiology

The recommended program includes additional courses in biostatistics, demography, and epidemiology beyond those required for the M.P.H.; courses or directed group study in specialized areas of infectious and chronic disease epidemiology or application of epidemiology to health planning, management, and/or policy; laboratory or clinical studies in medical, health, or biological sciences.

In addition, six full courses (four must be at the 200 or 400 level) in at least two divisions other than your major division are required for

breadth (you may petition to include up to two 100-level courses). The major division requires an additional area of concentration which may be either inside or outside the school (e.g., biostatistics, biology, microbiology and immunology, neuroscience).

Health Services

Note: The Division of Health Services is examining the curriculum with a view to its revision. Information regarding requirements for graduation may be subject to change.

From 48 to 72 quarter units beyond the master's degree are required. About one-third is to be in the substantive area of structure and functioning of health services, one-third in skills and tools required for health services management and policy analysis, and one-third in elective courses to meet individual needs and interests. In addition, if the master's degree did not include it, you must spend three to nine months in a supervised residency or practicum experience in one or more health-related organizations.

In addition, six full courses (four must be at the 200 or 400 level) in at least two divisions other than your major division are required for breadth. The major division requires an additional area of concentration which may be either inside or outside the school (e.g., economics, political science, sociology, management).

Nutritional Sciences

Recommended courses include Biological Chemistry 101A or 201A, 101B or 201B, Public Health 260E, 260F, 260G, 260H, 261A, 262 or 263 (may be repeated for credit), 265 (may be repeated for credit), 400, 460, 461, 463A, 463B, and 495, 596, and 599 (may be repeated for credit). Conversational Spanish is also recommended.

In addition, six full courses (four must be at the 200 or 400 level) in at least two divisions other than your major division are required for breadth. The major division requires an additional area of concentration which may be either inside or outside the school (e.g., biology, biostatistics).

Population and Family Health

Course content for the major field includes courses needed for the divisional M.P.H., the divisional doctoral seminar, and two advanced courses in research methodology. Beyond the master's degree requirements, a minimum of 48 units (four quarters with an average of 12 units each) is required. Of these, at least 20 units must be in this division, in addition to the divisional doctoral seminar.

In addition, six full courses (four must be at the 200 or 400 level) in at least two divisions other than your major division are required for breadth (you may petition to include up to two 100-level courses). The major division requires an additional area of concentration which may be either inside or outside the school.

Qualifying Examinations

Before advancement to candidacy, you must pass written examinations in the major field, prepared and administered by the guidance committee or by the faculty of the division. 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.

Ph.D. in Public Health

The Ph.D. is the highest research degree in public health for the student who desires in-depth knowledge in the area. Depth of knowledge and research skills are stressed. 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.

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 Public Health or an appropriately related field (students with an M.P.H. need to satisfy the requirements of the M.S. in 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 a division of the Department of Public Health; (5) approval by the policy admissions committee and the department chair. Screening examinations may be required by each division.

In the Division of Behavioral Sciences and Health Education, you must satisfy the divisional core requirements for the M.P.H. or M.S. in 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 Fields or Subdisciplines

Behavioral sciences and health education, environmental and occupational health sciences, epidemiology, health services, and nutritional sciences.

Course Requirements

The courses needed to pass the written examination in your major field depend on the division 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 division 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.

Ph.D. in Biostatistics

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.

Course Requirements

There are no specific course requirements. However, your program of study must be approved by the Division of Biostatistics 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 quarter each year. Recommendation for the degree is based on your attainments rather than on the completion of specified courses.

Screening/Qualifying Examinations

Biostatistics requires a written screening examination of all students entering the doctoral program. The examination must be successfully completed before the end of the first year in the program (if not taken before entering the program).

Written qualifying examinations in biostatistics and mathematical statistics and an examination in your selected third field are taken before advancement to candidacy.

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 is usually a defense of the dissertation proposal. A failed examination may be repeated once. The timing of reexaminations is specified by the division in the case of written examinations or by your committee in the case of oral examination. If you do not take the examinations at the designated time, you forfeit your right to reexamination.

Final Oral Examination

A final oral examination is required.

Lower Division Courses

18. Principles of Healthful Living. Analysis of health care issues as related to the health care consumer and the health care delivery system. Identification of health needs and clarification of personal responsibilities for health.

19. Peer Health Counselor Training. Limited to students in the Peer Health Counselor Program. Analysis of student health care issues as related to the campus health care delivery system and to the 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. Viele Byrnes

Upper Division Courses

100A. Introduction to Biostatistics. Lecture, three hours; laboratory/quiz, two hours. Prerequisites: upper division standing, one course in biological or physical science. Students who have completed courses in statistics may enroll only with consent of instructor. Not open for credit to students with credit for course 101A. Introduction to methods and concepts of statistical analysis. Sampling situations, with special attention to those occurring in the biological sciences. Topics include distributions, tests of hypotheses, estimation, types of error, significance and confidence levels, sample size.

100B. Introduction to Biostatistics. Lecture, three hours; laboratory/quiz, two hours. Prerequisites: course 100A or equivalent, consent of instructor. Not open for credit to students with credit for course 101B. Introduction to analysis of variance, linear regression, and correlation analysis.

100C. Introduction to Biostatistics. Lecture, three hours; laboratory/quiz, two hours. Prerequisites: course 100B or equivalent, consent of instructor. Design of experiments, analysis of variance, multiple and polynomial regression analysis with biomedical applications.

100D. Introduction to Biostatistics. Lecture, three hours; laboratory, two hours. Prerequisites: course 100B or equivalent, consent of instructor. 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.

101A. Basic Biostatistics. Lecture, three hours; quiz, 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 estimator, statistical inference.

101B. Basic Biostatistics. Lecture, three hours; quiz, one hour. Prerequisite: course 101A. Not open for credit to students with credit for course 100B. Topics include elementary analysis of variance, simple linear regression and correlation, nonparametric methods, elements of sequential analysis.

101C. Basic Biostatistics. Lecture, three hours; laboratory, two hours. Prerequisite: course 101B or equivalent. Not open for credit to students with credit for course 100C or 100D. Introduction to multiple regression; topics relating to analysis of variance and experimental designs.

M101D. Introduction to Computational Statistics. (Same as Biomathematics M153.) Lecture, three hours; discussion, one hour. Prerequisite: Mathematics 150C or 152B or equivalent. Statistical analysis of data by means of package programs. Regression, analysis of variance, discriminant analysis, and analysis of categorical data. Emphasis on understanding the connections between statistical theory, numerical results, and analysis of real data.

103. Statistics for Public Health. Lecture, three hours; laboratory, two hours. Prerequisites: upper division standing, one course in biological or physical science. Open to students in the M.P.H. and nursing programs. Introduction to sources of demographic and health information, methods of calculating and interpreting vital and health statistics, and elementary methods for statistical inference.

110. Introduction to Medical Science. Prerequisite: one course in chemistry or other natural sciences. Recommended: one-year sequence in biology, physiology, or other biological science. An introduction to normal human physiology and disease processes.

112. Principles of Epidemiology. Lecture, two hours; laboratory, four hours. Prerequisite: course 110. Not open for credit to students with credit for course 114. Introduction to epidemiology, including factors governing health and disease in populations.

114. Epidemiology I. Lecture, two hours; laboratory, four hours. Prerequisites: courses 100A (may be taken concurrently), 110, consent of instructor. Not open for credit to students with credit for course 112. Introduction to epidemiology, including factors governing health and disease in populations.

M115. Disease Problems of Socioeconomic and Political Impact in Latin America. (Same as Latin American Studies M155.) Lecture, six hours; discussion, six hours. Prerequisite: one upper division course in Latin American studies. Social, economic, and political impact of important disease problems in Latin American countries. Mr. Work

116. Epidemiology of Nosocomial Infections (2 units). Prerequisites: course 112 or Microbiology 110, consent of instructor. Introduction to the epidemiology of hospital-acquired infections, their detection and control.

125. Applied Social Science Methodology. Lecture, two hours; discussion, two hours; laboratory, one hour. Prerequisites: course 100A or equivalent, consent of instructor. Applied procedures for conducting research in family health. A research design comprises one of the course requirements.
Ms. Bourque

130. Health Services Organization. Prerequisite: four units of social science. Structure and function of American health care system; issues and forces shaping its future. Mr. Fielding, Mr. Torrens

131. Structure and Function of Health Care Facilities. Lecture, two hours; discussion, two hours. Prerequisites or corequisites: course 130, consent of instructor. Introduction to structure, organization, and function of health care facilities.

132. Management Science for Health Planning and Administration. Lecture, three hours; laboratory, two hours. Prerequisites: courses 100A, either 403 or Management 404, or equivalent, consent of instructor. Introduction to the 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.
Mr. Valdez

133. Interpersonal Dynamics in Health Services Management (2 units). Prerequisites: one undergraduate course in sociology or psychology, consent of instructor. An introduction to the application of behavioral science theory to understanding the interpersonal dynamics of health care facilities and their management.

134. Introduction to Comprehensive Health Planning. Lecture, four hours; fieldwork, four hours. Prerequisite: one upper division course in microeconomics, statistics, calculus, or political science. Concepts underlying health planning, state of the art, and some relevant literature. Mr. Melnick

M135. Organization of Medical Practice (2 units). (Same as Medicine M158.) Prerequisites: course 130, graduate standing in public health, medicine, or nursing. Education and certification of medical practitioners. Organization of medical practice: solo, group, HMO. Doctor-patient relationships, medical ethics, economics, professional liability, health care evaluations. Mr. Goodman

136A. Introduction to Health Services Research. Prerequisites or corequisites: courses 100A, 110, or equivalent, consent of instructor. Review of the field of health services research. Uses of quantitative methods and the applications of conceptual-theoretical constructs (as well as methodologies) from social and behavioral sciences and epidemiology to studies of the workings of health services. Mr. Lewis

136B-136C. Practices of Evaluation in Health Services: Theory and Methodology (2 units each). (Formerly numbered 136B.) Lecture, four hours; discussion, one hour. Prerequisites: course 136A or equivalent, consent of instructor. Introduction to health services evaluation. Examination and performance of specific evaluation procedures. Conducting of health services investigations, reporting results and methodologies. In Progress grading.
Ms. Fink, Ms. Kosecoff

137. Managing Human Resources in Health Facilities and Programs. Prerequisites: one course in social sciences, consent of instructor. Didactic and experimental study of management of human resources in health-related organizations and programs.

138. Politics of Health Care. Prerequisites: one course in social sciences, consent of instructor. Concepts and procedures for political analysis; national, state, and local politics in health care; examination of selected case studies.

139. Quantitative Methods for Decision Making in Health Services. Prerequisites: courses 100A, 110, 130, consent of instructor. Decision theory and use of statistics in decision making. Decision theory includes frameworks for decision making and control, decision under uncertainty, utility theory, Bayes' theorem, and value of information. Statistical topics include communicating with statistics, measures of association, regression, analysis of variance, and forecasting.

140A-140B. Health Record Science. Lecture, two hours; laboratory, two hours. Prerequisites: Biology 5 or equivalent, consent of instructor. Course 140A is prerequisite to 140B. Principles and theories of systems and techniques used for organization, analysis, and maintenance of records and reports studied and evaluated according to their use in varied situations.

141. Financial and Managerial Accounting for Health Services Organizations. Prerequisites: course 130 or equivalent, consent of instructor. An introduction to financial and managerial accounting and its application to the health services industry.
Mr. McLaughlin

143. Integrating Medical and Fiscal Records in Health Institutions. Prerequisites: course 140A, Management 403, or equivalent, consent of instructor. The patient charge system from admission through collection. The interfacing of patient medical records and patient fiscal records, presented via a student field project.

144. Decisions in Automating Data Systems in Ambulatory Patient Care Facilities. Lecture, two hours; discussion, two hours. Prerequisites: courses 130, 140A. Definition of the techniques used to propose, design, and evaluate the automation of data systems for patient care and operations of ambulatory care facilities. Practical experience through analysis of a case problem.

145. Society's Response to Aging. Prerequisites: courses 130, 180, 183, or equivalent, consent of instructor. Relationship of changing age structure in America to family, economy, politics, health care, retirement, age stratification, death and dying.
Mr. Wales

148. Introduction to Health Economics. Prerequisites or corequisites: courses 230A-230B or equivalent, consent of instructor. Presentation of the tools of economic analysis. Topics include introductory concepts of microeconomics, the theory of demand for health insurance and health care, substitution of health personnel, hospital cost functions, and costs and benefits of health programs. Mr. Schweitzer

150. Environmental Health. Lecture, three hours; discussion, one hour. Prerequisites: Biology 5, Chemistry 11A, Mathematics 3A, Physics 3A or 6A. 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. Mustafa

152. Biological Effects of Air Pollution. Lecture, three hours; discussion, one hour. Prerequisites: Biology 5, Chemistry 11A, or equivalent, consent of instructor. Survey of biological effects and assessment methods of air contaminants present in urban, industrial, and occupational environments.
Mr. Mustafa

153. Public Health and Environmental Microbiology. Lecture, three hours; laboratory, six hours. Prerequisites: Biology 7, Chemistry 25, or equivalent, consent of instructor. Basic principles and laboratory procedures employed in the provision of sanitary elements to the community, including food and milk, water supply and waste disposal, soil and environmental effluents. Mr. Mah

154. Environmental Management. Lecture, four hours; discussion, one hour. Prerequisites: Economics 100, Political Science 142 or 143, or equivalent, consent of instructor. Introduction to foundations and principles of environmental management, decision making, and evaluation of environmental policies and programs. Mr. Davos

155. Introduction to Environmental Health (2 units). Prerequisites: one college course in chemistry or biology or equivalent courses, consent of instructor. Not open to students specializing in environmental health. Introduction to environmental health, including coverage of sanitary principles and chronic and acute health effects of environmental contaminants.

156A. Introduction to Occupational Safety and Health I. (Formerly numbered 156.) Prerequisites: Biology 5, Chemistry 21, or equivalent, 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, and health education). Two field trips.
Mr. Froines, Mr. Wegman

156B. Introduction to Occupational Health II. Prerequisites: course 156A or equivalent, consent of instructor. Introduction to the health effects of occupational exposures, including the recognition, evaluation, and prevention of occupational diseases. Emphasis on concept of disease mechanisms, manifestations, and classification relevant to professionals in the disciplines related to occupational health (e.g., industrial hygiene, toxicology, epidemiology, health education, and nursing). One field trip.
Mr. Froines, Mr. Harber, Mr. Wegman

157E. Properties and Measurement of Airborne Particles. Lecture, three hours; laboratory, two hours. Prerequisites: one year of chemistry, physics, and mathematics through calculus, consent of instructor. Basic theory and application of aerosol science to environmental health, including properties, behavior, sampling, and measurement of aerosols and quantitative problems. Laboratory for industrial hygiene majors only; paper for others. Mr. Hinds

157F. Identification and Measurement of Gases and Vapors (2 units). Lecture, two hours; laboratory, two hours (every other week). Prerequisite: course 156A. Required of all industrial hygiene students in the Division of Environmental and Occupational Health Sciences. The theoretical and practical aspects of the industrial hygiene sampling of gases and vapors. Mr. Froines

160. Principles of Food and Nutrition (2 units). Prerequisites: one course in biology, chemistry, or physiology, consent of instructor. Not open for credit to students specializing in nutrition. Principles of nutrition and nutritional requirements for normal growth and development. Ms. Alfin-Slater

161. Nutrition and Health (2 units). Prerequisites: course 110 or 160 or equivalent, consent of instructor. Not open for credit to students specializing in nutrition. Basic and clinical nutrition theory and practice for students in health science curricula.
Ms. Alfin-Slater, Mr. Jelliffe

162. Nutrition. Lecture, three hours. Prerequisites: organic chemistry, Biology 7, or equivalent. Metabolic aspects of carbohydrates, fats, proteins, vitamins, and minerals. Digestion and absorption of nutrients, energy and protein requirements, mineral and vitamin metabolism. Ms. Hunt

163. Biologic Processes. Lecture, three hours. Prerequisites: one year of organic chemistry, Biology 7. Metabolism of carbohydrates, proteins, and other nitrogen compounds and lipids; role of hormones and enzymes in metabolism; physiological processes.
Ms. Alfin-Slater

165. Clinical Nutrition Laboratory (2 units). Discussion, one hour; laboratory, four hours. Prerequisites: one course in quantitative analysis or equivalent, one year of organic chemistry, Biology 7, consent of instructor. Analytical procedures for determining the various constituents of blood and urine.
Mr. Eckhert

166A. Therapeutic Nutrition (2 units). Prerequisites: courses 162, 163, or equivalent, consent of instructor. Recent findings in the field of diet and disease and modifications made in normal diet for pathological conditions. Ms. Carlisle

166B. Therapeutic Nutrition (2 units). Prerequisites: course 166A, consent of instructor. Recent findings in the field of diet and disease and modifications made in normal diet for pathological conditions.
Ms. Carlisle

167. Biologic Processes: Physiology and Nutrition. Lecture, three hours. Prerequisites: course 163, consent of instructor. Metabolism of lipids, carbohydrates, and proteins; role of hormones and enzymes in metabolism; physiological processes occurring in various organs. Ms. Alfin-Slater

170. Family Health and Biosocial Development. Lecture, two hours; discussion, two hours. Prerequisites: Psychology 130 or Physiology 100 or equivalent, consent of instructor. Biosocial factors related to normal human physical, intellectual, and emotional growth and development from a family and public health perspective. Mr. Katz

170E. Genetics and Public Health. (Formerly numbered 170A.) Lecture, three hours; discussion, one hour. Prerequisites: one course in biology, consent of instructor. The public health significance of genetic disease, biological basis of genetic disease and birth defects, services available in the areas of diagnosis, treatment, and prevention, and the legal, social, and ethical implications of genetic disease. Mr. Alfi

171A. Family Health and Population: Principles and Issues. Prerequisites: course 110 or equivalent, consent of instructor. Biosocial aspects of family formation, reproductive physiology and behavior, "at risk" aspects of pregnancy and childbirth, and primary women's health care services. Physical aspects of growth, physical, intellectual, and social development from infancy to older childhood and adolescence.

171B. Family Health and Population: Principles and Issues. Prerequisites: course 171A, consent of instructor. Considerations of population growth, trends in domestic and international mortality, international migration, women's health issues, family planning. Child health issues in the United States and MCH/family problems, programs, and policy in developing Third World countries.

172. Introduction to Reproductive Health. Lecture, two hours; discussion, two hours. Prerequisites: course 110 or equivalent, consent of instructor. Review of reproductive physiology, normal and abnormal pregnancy, family planning, male-specific and female-specific health problems, including health care and psychosocial considerations.

174E. Health, Disease, and Health Services in Latin America. Prerequisite: one upper division course in Latin American studies or course 110. Introduction to health, disease, and health services in Latin America, with emphasis on epidemiology, health administration, medical anthropology, and nutrition.
Ms. Scrimshaw

174H. Public Health in the People's Republic of China (2 units). Lecture, four hours. Prerequisites: course 130 or equivalent or two upper division or graduate courses in social or behavioral sciences or medical sciences, consent of instructor. Historical overview of policies and implementation of public health in the People's Republic of China from 1949 to the present. Emphasis on relevance for public health in other developing countries. Mr. Neumann

176. Human Sexuality and Sexual Health. Lecture, three hours; discussion, one hour. Prerequisites: two courses in behavioral and/or life sciences, consent of instructor. Interdisciplinary review of sexual physiology and sexual behaviors followed by consideration of pregnancy and its prevention, sexual dysfunction, and sex-transmitted disease. Psychosocial, cultural, political, and health care aspects.

176E. Family and Sexual Violence. Lecture, three hours; field trip. Prerequisites: course 130, consent of instructor. Examination of rape, incest, spouse and elder abuse. The definitions, causes, outcomes of, and research on family and sexual violence, as well as the responses of the social service, medical, and criminal justice systems. Mr. Richwald

177A. Principles of Genetic Counseling (2 units). (Formerly numbered 177.) Prerequisites: course 170 or 171A, Biology 8. Theoretical basis, current research, and practical considerations and techniques of counseling, especially as practiced in genetics settings. Mr. Katz

177B. Principles of Genetic Counseling (2 units). Prerequisite: course 177A. Counseling principles and techniques arising from such reproductive areas as prenatal care/diagnosis, abortion, adoption, sterilization. Counseling in relation to grief and mourning; theories underlying alternative counseling models pertinent to these areas. Mr. Katz

177C. Principles of Genetic Counseling (2 units). Prerequisites: courses 171A, 177A, consent of instructor. Evaluation of counseling process and outcome; clinical research; the counselor as a team worker; ethical and administrative issues.
Mr. Katz

178. Legal Aspects of Family Health (2 units). Prerequisites: course 170, consent of instructor. Analysis and clarification of legal issues involving family health services, including family planning, sterilization, abortion, dental care for children, battered child laws, mental hospitalization, personnel and standards for care and implementation of sound health programs.
Ms. Roemer

179A. Health Problems and Programs in Africa (2 units). Lecture, one hour; discussion, one hour. Prerequisites: one course from Public Health 110, History 175A-175Z, 176A, 176B, 177, 178A, 179A, 275, 278A, Anthropology M168, 171, 271, Political Science 166A, C250E, Geography 122, 188, 189, 288, 289, or equivalent, consent of instructor. Consideration of traditional beliefs about illness and treatment, factors affecting health status in Africa, major health problems, and some programs proposed as remedies.

179B. African Health Sector Analysis Seminar (2 units). Prerequisite or corequisite: course 179A. Approach is that of a multidisciplinary team analyzing the health sector of a representative African country to determine needs and priorities for external aid.

180. Introduction to Public Health. Prerequisite: four units of life science. Principles of public health. Analysis of demographic, professional, organizational, fiscal, social, and research features. Health, mental health, environmental health, and consumer protection fields. Mr. Wilner

181. Introduction to Social Research Methods in Health. Lecture, four hours; assignments, eight hours. Prerequisites: course 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.

182. Behavioral Sciences and Health. Lecture, three hours. Prerequisite: one course in social sciences. 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

183. Community Health Education. Lecture, two hours; discussion, two hours. Prerequisites: one course in social sciences, consent of instructor. Problems of social, economic, and cultural origin as they apply to sound community organization in the public health field. Examination of health education activities of professional, voluntary, and official health agencies and analysis of their interrelationships.

184. Health and Consumer Economics. Lecture, three hours. Prerequisites: Economics 1 and 2, or 100, upper division or graduate standing. Impact of health problems and costs on individual and family incomes and expenditures, including productivity and dependency.

185. Economics of Health and Medical Care. Lecture, three hours. Prerequisites: Economics 1 and 2, or 100, upper division or graduate standing. Demand, supply, and price determinants in private and public sectors of health and medical care fields.

186. The World's Population and Food. Lecture, three hours. Prerequisites: Economics 1 and 2, or 100, upper division or graduate standing. World food sources; major food groups, human food requirements, and consumption; food in developing economies; international movement of foods; interrelations of foods, population, and economic progress.

187. Health Education for Teacher Credentials (2 units). Limited to students in the teacher education credential program. Required for the California State Teaching Credential. The 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

188. Community Mental Health. Prerequisites: one upper division course in psychology, sociology, or anthropology, consent of instructor. Concepts of mental health, mental illness, prevention of mental disorders, mental health in public health programs. Public health aspects of control of mental disorders. Epidemiology, program planning, and legal aspects of mental disorders.

189. Community Cancer Education. Lecture, two hours; discussion, one hour; fieldwork, one hour; reading assignments, one hour. Prerequisites: Biology 30 or equivalent, consent of instructor. Exploration of the process of cancer education through community resources, culminating in student-generated community field study proposal and presentation. Ms. Brown

199. Special Studies (2 to 4 units). Prerequisites: senior standing, consent of instructor and department chair (based on a written proposal outlining the 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 quarter.

Graduate Courses

200A-200B-200C. Biostatistics. Lecture, three hours; discussion, one hour. Prerequisites: course 100C, Mathematics 32B, 152B, or equivalent (certain prerequisites may be taken concurrently or waived with consent of instructor). Quantitative methods in public health, medicine, and biological sciences; statistical theory and application to problems in design and analysis of medical experiments and surveys.

M201E. Special Topics: Statistical Methods for Categorical Data. (Same as Biomathematics M231.) Lecture, three hours; discussion, one hour. Prerequisites: course 100B or 101B, Mathematics 150C or 152B, or equivalent, consent of instructor. Statistical techniques for the analysis of categorical data; discussion and illustration of their applications and limitations.

201F. Special Topics: Distribution Free Methods. Lecture, three hours; discussion, one hour. Prerequisites: course 100D or 101B, Mathematics 150C or 152B, or consent of instructor. Theory and application of distribution free methods in biostatistics.

201G. Special Topics: Statistical Simulation Techniques. Lecture, three hours; discussion, one hour. Prerequisites: course 100C, Mathematics 150C or 152B, a course in computer programming, consent of instructor. Techniques for simulating important statistical distributions, with applications in biostatistics.

201H. Special Topics: Finite Population Sampling. Lecture, three hours; discussion, one hour. Prerequisite: course 100D or Mathematics 150C or 152B. Theory and methods for sampling finite populations and estimating population characteristics.

201J. Special Topics: Supplemental Topics. Lecture, three hours; discussion, one hour. Prerequisites: course 100C, consent of instructor. Topics in biostatistics not covered in other courses.

M201K. Survival Analysis. (Same as Biomathematics M281.) Lecture, three hours; discussion, one hour. Prerequisites: course 100C and Mathematics 150C or 152B, or equivalent, consent of instructor. Statistical methods for the analysis of survival data.

201M. Introduction to Statistical Methods for Biological Assays. Prerequisites: course 100C and Mathematics 150C or 152B. Topics include standard statistical procedures for the estimation of relative potency, density of microorganisms, and density of radioactivity, models used for these procedures, and statistical considerations for designing such assays.

M202E. Problems of Statistical Consultation. (Same as Biomathematics M282.) Lecture, two hours; discussion, one hour; laboratory, two hours. Prerequisite: graduate course in applied statistics. Textbook and original problems requiring special expertise in design and analysis. Use of computer packages to diagnose failure of assumptions, suitability of models, and alternate analyses.

M202F. Statistical Analysis of Incomplete Data. (Same as Biomathematics M232.) Lecture, three hours; laboratory, one hour. Prerequisites: course 100B or 101B, Mathematics 150C or 152B, or equivalent, consent of instructor. Discussion of the statistical analysis of incomplete data sets, with material from the 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 the methods to applied problems, as well as on the underlying theory. S/U or letter grading.

M202G. Simultaneous Statistical Inference. (Same as Biomathematics M233.) Lecture, three hours; discussion, one hour. Prerequisites: courses 200C, M205A, Mathematics 150C. Methods and theory of simultaneous statistical inference.

M202H. Applied Bayesian Inference. (Same as Biomathematics M234.) Lecture, three hours; discussion, one hour. Prerequisites: courses 200C, M205A, and Mathematics 150C, or consent of instructor. The 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.

203A. Data Base Management Systems. Lecture, three hours; laboratory, two hours. Prerequisites: course 403 or equivalent, consent of instructor. 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.

203B. Systems Analysis for Health Data. Lecture, three hours; laboratory, two hours. Prerequisites: course 203A, consent of instructor. 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.

204E. Seminar in Biostatistics (2 units). Prerequisites: course 200B, two courses from the M201E-201J series, consent of instructor. Current developments of methodology and problems in applications of biostatistics.

204F. Advanced Seminar in Biostatistics (2 units). Prerequisites: course 200C, consent of instructor. Current research in biostatistics. May be repeated for credit. S/U grading.

M205A-M205B-M205C. Linear Statistical Models. (Same as Mathematics M279A-M279B-M279C.) Lecture, three hours. Prerequisites: course 100C, Mathematics 150C or 152B, or equivalent. Topics include linear algebra applied to linear statistical models, distribution of quadratic forms, the Gauss-Markov theorem, fixed and random component models, balanced and unbalanced designs.

206A-206B. Multivariate Biostatistics. Lecture, three hours. Prerequisite: course M205A or equivalent. Multivariate analysis as used in biological and medical situations. Topics from component analysis, factor analysis, discriminant analysis, analysis of dispersion, canonical analysis.

207E. Advanced Topics: Stochastic Processes. Lecture, three hours. Prerequisites: upper division mathematics, including statistics and probability. Stochastic processes applicable to medical and biological research.

207F. Advanced Topics: Mathematical Epidemiology. Lecture, three hours. Prerequisites: course 207E 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.

207G. Advanced Topics: Statistical Genetics. Lecture, three hours. Prerequisites: upper division mathematics, including statistics and probability. Introduction to statistical genetics.

207H. Statistical Methods for Research Biological Assays. Prerequisite: course 201M. Topics include statistical methods developed for research assays for which the standard procedures do not apply.

M207J. Computational Statistics. (Same as Biomathematics M280 and Mathematics M280.) Lecture, three hours. Prerequisites: Mathematics 115A, 150C, or equivalent. Introduction to theory and design of statistical programs: pivoting and other technologies used in stepwise regression, nonlinear regression algorithms, algorithms for balanced and unbalanced analysis of variance, including the mixed model, iterative rescaling, and other methods for log-linear models.

207L. Advanced Topics: Recent Developments. Lecture, three hours; discussion, one hour. Prerequisite: course 200C. Advanced topics and developments in biostatistics not covered in the Public Health 201 or 207 series, or in other courses. Possible topics include time-series analysis, classification procedures, correspondence analysis, etc.

210. Principles of Infectious Disease Epidemiology. Lecture, three hours. Prerequisites: courses 100A or equivalent, 112, one-year sequence of biology and chemistry, 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. Barr

211A. Epidemiology II. Lecture, two hours; laboratory, four hours. Prerequisites: courses 100B (may be taken concurrently), 114, consent of instructor. Discussion of study designs, research methodology, problems of measurement, and analytic techniques used in epidemiologic research.

211B. Advanced Epidemiology. Lecture, two hours; laboratory, four hours. Prerequisites: course 211A, graduate standing, consent of instructor. A continuation of course 211A, with concentration on selection of appropriate research design, problems of measurement, and analytic techniques commonly used in epidemiologic studies.

211C. Advanced Epidemiologic Analysis. (Formerly numbered 298.) Lecture, two hours; laboratory, four hours. Prerequisites: courses 100C or 100D and 211B, or equivalent, 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.
Mr. Greenland

212D. AIDS, A Major Public Health Challenge (2 units). Lecture, 90 minutes; discussion, 90 minutes. Prerequisites: courses 100A, 110, 112 or 114, 130. Presentation and discussion of the Acquired Immunodeficiency Syndrome (AIDS), with emphasis on epidemiology, biology, immunology, clinical characteristics, psychosocial factors, and strategies for control. S/U grading. Mr. Detels

212E. Epidemiology of Cardiovascular Disease (2 units). Lecture, one hour; discussion, one hour. Prerequisites: course 211A, consent of instructor. Theoretical, practical, and controversial aspects of cardiovascular epidemiology in developed and underdeveloped countries. Mr. Quiroga, Mr. Staniloff

212G. Epidemiology of Neurologic Disease (2 units). Prerequisites: course 211B or equivalent, consent of instructor. Epidemiologic characteristics of selected chronic neurologic diseases, with particular emphasis on etiology and possible control.
Ms. Visscher

212H. Epidemiology of Arthropod-Borne Disease. Prerequisites: course 211B, graduate standing. Epidemiologic aspects of disease carried by arthropods, emphasizing life cycle and ecology of vectors as related to epidemiology of viral, rickettsial, bacterial, protozoal, and helminthic diseases. Mr. Barr

212I. Epidemiology of Nonintentional Injuries. Lecture, three hours; discussion, two hours. Prerequisites: courses 100A, 110 (or equivalent), 112 (or equivalent), 155, 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. Substance findings on related subproblem areas presented for critical review. Mr. Kraus

212J. Occupational Epidemiology. Lecture, two hours; discussion, two hours. Prerequisites: course 211A or equivalent, consent of instructor. Methodological considerations, approaches, and limitations in epidemiological studies of occupational groups and environments. Mr. Kraus

212K. Epidemiology of Assault, Homicide, and Suicide (2 units). Lecture, two hours; discussion, one hour. Prerequisites: courses 100A, 110, 112 or equivalent, 155, consent of instructor. Presentation and evaluation of epidemiologic research approaches to the study of violent injury, including a description of incidence, study design, risk factor analysis, and control evaluation. Mr. Kraus

213. Environmental Epidemiology. Lecture, two hours; discussion, one hour; independent study, three hours. Prerequisites: courses 100B, 112 or 114, Chemistry 21, Physics 3C or equivalent, graduate standing, consent of instructor. Methodologic problems and approaches of epidemiology for assessing the health impact of major types of environmental exposure. Mr. Spivey

214. Infectious and Tropical Disease Epidemiology. Lecture, three hours; discussion, three hours. Prerequisites: courses 100A, 112, or equivalent, consent of instructor. Epidemiology of major infectious and tropical diseases in developing countries, including those with direct or contact mode of spread and those vector borne.

215A. Epidemiology of Cancer. Prerequisites: courses 100A, 112, 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

215B. Epidemiology of Cancer (2 units). Lecture, one hour; discussion, one hour. Prerequisites: course 215A, consent of instructor. Current issues in cancer epidemiology, including etiologic research, screening programs, prevention. Mr. Haile

216A. Ecology of Exotic Diseases. Lecture, two hours; discussion, six hours. Prerequisites: course 112, Microbiology C103A, C103B, or equivalent, consent of instructor. Geographic pathology and behavioral causes of exotic diseases. Climatological, ecological, and biological determinants of the distribution, exposure to, and occurrence of exotic diseases.
Mr. Work

216B. Viral Diseases of Man. Lecture, two hours; laboratory, six hours. Prerequisites: course 216A or equivalent, consent of instructor. Viral and rickettsial diseases of man. Natural history, epidemiology, diagnosis, control, and prevention of these diseases, especially in tropical situations. Mr. Work

217. Prevalence Studies in Epidemiology. Lecture, two hours; discussion, one hour; laboratory, two hours; outside assignments, 10 to 12 hours. Prerequisites: courses 100B, and 211A or 181, or equivalent, consent of instructor. Design, testing, field use, analysis, and interpretation of data collection instruments to obtain prevalence estimates in epidemiologic studies of populations and samples. Design and administration of questionnaires, interviewing procedures, and the application of noninvasive objective measurements. Ms. Bourque

218A. Protozoal Diseases of Man. Prerequisites: Microbiology 101 or Biology 105 or equivalent, consent of instructor. May be taken concurrently with course 218B. Comprehensive overview of systematics, morphology, biology, host-parasite relationships, public health problems, and control of protozoa parasitic in man and animals. Mr. Ash

218B. Protozoal Diseases of Man (2 units). Prerequisite or corequisite: course 218A. Laboratory methods of diagnosis and microscopic recognition of protozoa parasitic in man and animals. Intestinal protozoa and organisms occurring in the blood and tissues of their hosts and pathology associated with these infections. Mr. Ash

219. Arthropods of Medical Importance. Lecture, two hours; laboratory, six hours. Prerequisites: Biology 105 or 107 and 181, Microbiology 101, or equivalent. Biology and identification of mites and insects of public health importance involved in transmission and causation of human diseases. Mr. Barr

220A. Helminthic Diseases of Man. Prerequisites: Microbiology 101 or Biology 105 or equivalent, consent of instructor. May be taken concurrently with course 220B. Comprehensive overview of systematics, morphology, biology, host-parasite relationships, public health problems, and control of the nematodes, trematodes, and cestodes parasitic in man and animals. Mr. Ash

220B. Helminthic Diseases of Man (2 units). Prerequisite or corequisite: course 220A. Laboratory diagnosis and practical microscopic recognition of the nematodes, trematodes, and cestodes parasitic in man and animals. Pathology produced by these infections. Mr. Ash

221. Seminar in Epidemiology: Methodology (2 units). Prerequisites: course 211A or equivalent, consent of instructor. Review of current epidemiologic research contained in recent medical literature. May be repeated for credit. S/U grading.

222. Seminar in Epidemiology: Infectious and Tropical Disease (2 units). Prerequisites: course 211A or equivalent, consent of instructor. Review of research on specific diseases of public health importance. May be repeated for credit. S/U grading.

223. Topics in Theoretical Epidemiology (2 units). Prerequisites: courses 100A and 100B and 100D (or Mathematics 152A), 211A, 211B, 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

224. Principles of Epidemiology II. Lecture, four hours; discussion, two hours. Prerequisites: courses 100A, 112, upper division biology course, or equivalent, consent of instructor. Material presented in course 112 examined in greater detail. Topics include measures of disease occurrence and criteria of causality; reliability and validity concerns; proper design, analysis, interpretation of experiments, and cohort and case control studies. Mr. Haile

225. Research Methods in Cancer Epidemiology (2 units). Prerequisites: courses 100A, 112, 211A. 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

226. Genetic Epidemiology (2 units). Prerequisites: courses 100A, 112, upper division biology course, or equivalent, 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

227. Public Health Research Using Available Data (2 units). Lecture, one hour; discussion, one hour. Prerequisites: courses 100A, 110, 112, and 410A or 403 or 217 or 405, or equivalent, consent of instructor. Presentations and discussions of the 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

229. Advanced Seminar in Epidemiology (2 units). Prerequisites: course 211B, consent of instructor. Current research in epidemiology. May be repeated for credit. S/U grading.

230A-230B. Health Systems Organization and Financing. Lecture, four hours; discussion, two hours. Prerequisites: health services major; four upper division courses in two of the following: social science, political science, history, economics, anthropology, medicine or health science, law, management or organizational behavior, operations research, philosophy; consent of instructor. In-depth analysis of health services systems in the United States, using relevant theories, concepts, and models.
Ms. Myers and the Staff

231. Health Policy Seminar: Health Care Financing, Competition, and Regulation. Prerequisites: courses 100A, 100B, 230A-230B, 238, 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. Mr. Newhouse and the Staff

232. Governmental Health Services and Trends. Prerequisites: course 130, two additional upper division social or behavioral sciences courses, consent of instructor. Systematic analysis of the 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. Lecture, two hours; discussion, two hours. Prerequisites: course 130 or equivalent, three courses in social sciences, consent of instructor. Conceptual and procedural tools for the analysis of health policy, emphasizing the role of analysis during the various phases of the life cycle of public policy.

234A-234B. Clinical Epidemiology (2 units each). Prerequisites or corequisites: courses 100A, 112, 136A, consent of instructor. Introduction to special issues in clinical health services research. Focus on research design and analysis of data. In Progress grading. Mr. Greenfield

235. Law, Social Change, and Health Service Policy. Prerequisites: course 130, two upper division courses in political science or sociology or equivalent, consent of instructor. Legal issues affecting policy formulation for environmental, preventive, and curative health service programs. Ms. Roemer

236. Quality Assessment and Assurance. Lecture, 90 minutes; discussion, 90 minutes; conference, one hour. Prerequisites: courses 100A, 112, 130, one additional course in health services or epidemiology, or equivalent, consent of instructor. Fundamental issues in quality assessment, quality assurance, and the measurement of health status.
Mr. Brook, Mr. Greenfield

237A-237B. Special Topics in Health Services Research Methodology. Lecture, one hour; discussion, three hours. Prerequisites: courses 100A, 100B, 100C, 130, or equivalent, consent of instructor. In-depth consideration of problems in the 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. Ms. Cretin, Mr. Shonick

238. Microeconomic Theory of the Health Sector. Prerequisites: courses 100A or equivalent, 232, Economics 1, 2, consent of instructor. Microeconomic aspects of the health care system, including health manpower substitution, choice of efficient modes of treatment, market efficiency, and competition.
Mr. Schweitzer

239. Aging and Long-Term Care. Prerequisites: courses 130, 138, 182, or equivalent, consent of instructor. Long-term care of the chronically ill elderly examined from a 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.

240. Health Care Issues in International Perspective. Prerequisites: two courses in health administration, two upper division courses in social sciences, 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 the settings of European welfare states, developing nations, and socialist countries. Mr. Roemer

M241. Women, Health, and Aging: Policy Issues (2 or 4 units). (Same as Social Welfare M290D.) Lecture, three hours; discussion, one hour. Prerequisites: two upper division social science courses, two upper division biological science courses, or equivalent, consent of instructor. The social and economic context of older women's aging, the major physical and psychological changes older women experience, the delivery of health services to this population, and the policies that respond to their health needs.
Ms. Abel, Mr. Lubben

243. Issues in Health Planning. Discussion, three hours; other, three hours. Prerequisites: courses 181 or equivalent research course, 444B. In-depth presentation and analysis of current issues of importance to advanced students in health planning.
Ms. Myers

247. Research Topics in Health Economics. Prerequisites: courses 130, 238, 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, the diffusion of technology, and cost-benefit analysis of health programs.
Mr. Schweitzer

248. Small Area Planning for Resources for Personal Health Service. Lecture, three hours; laboratory, two hours. Prerequisites: courses 130, 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.
Mr. Shonick

250. Advanced Environmental Health. Lecture, three hours. Prerequisites: course 150 or equivalent, consent of instructor. Theoretical considerations and supporting data involved in scientific establishment and justification of environmental health standards and requirements, with particular reference to related health factors. Ms. Valentine

251. Chemical Behavior of Aquatic Systems. Lecture, three hours. Prerequisites: course 150, Chemistry 11A, Mathematics 3A, consent of instructor. Chemistry of ocean waters, rivers, ground waters, 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

252. Environmental Microbiology. Lecture, three hours. Prerequisites: courses 150, 153, or equivalent, consent of instructor. Basic concepts of eutrophication, indicator organisms, aquatic microbes; assessment of biological treatment practices in water reuse and/or purification. Mr. Mah

253A. Environmental Toxicology. Lecture, three hours; discussion, one hour. Prerequisites: Chemistry 152, Biological Chemistry 101A-101B, consent of instructor. Essentials of toxicology, dose response, physical, chemical, or biological agents that adversely affect man and environmental quality.
Mr. Froines, Mr. Mustafa

253B. Environmental Toxicology: Trace Contaminants. Lecture, three hours; discussion, one hour. Prerequisite: course 253A. Essentials of toxicology in relation to trace contaminants. Mr. Froines

254. Environmental Decision Systems Analysis. Lecture, four hours; discussion, one hour. Prerequisites: courses 154, 250, Mathematics 3C, or equivalent, consent of instructor. 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

255. Seminar in Environmental Health Sciences (2 units). Prerequisites: courses 150, 156A, consent of instructor. A presentation in seminar format of theoretical and practical aspects of environmental and occupational sciences currently being conducted in local, state, federal, and academic settings. May be repeated for credit. S/U grading.

256. Seminar in Health Effects of Environmental Contaminants (2 units). Prerequisites: Biological Chemistry 101A-101B or equivalent, consent of instructor. Emphasis on health effects of air, water, environmental pollutants on man and review of research literature. May be repeated for credit.

257. Control of Airborne Contaminants in Industry. Lecture, two hours; laboratory, two hours. Prerequisites: courses 156A, 157E, consent of instructor. Intended for industrial hygiene majors. Principles and applications of control technology to industrial environments, including general and local exhaust ventilation, air cleaning equipment, and respiratory protection. Mr. Hinds

258. Instrumental Methods in Environmental Sciences. Lecture, two hours; laboratory, six hours. Prerequisites: courses 150, 153, 156, Chemistry 25, consent of instructor. Laboratory techniques and instrumentation used in the preparation and analysis of biological, environmental, and occupational samples.
Mr. Panaqua

259. Biological Monitoring in Occupational Health (2 units). Prerequisites: courses 156B, 253A, consent of instructor. Principles and applications of biological monitoring for assessment of occupational exposure to organic and inorganic chemicals.
Mr. Droz

260E. Advanced Nutrition: Vitamins. Lecture, three hours; discussion, one hour. Prerequisites: Biological Chemistry 101A-101B-101C or equivalent, consent of instructor. Comprehensive treatment of vitamin nutrition and metabolic-nutrient interactions.
Ms. Swendseid

260F. Advanced Nutrition: Proteins. Lecture, three hours; discussion, one hour. Prerequisites: Biological Chemistry 101A-101B-101C or equivalent, consent of instructor. Comprehensive treatment of protein nutrition and metabolic-nutrient interactions.
Mr. Jones

260G. Advanced Nutrition: Lipids. Lecture, three hours; discussion, one hour. Prerequisites: Biological Chemistry 101A-101B-101C or equivalent, consent of instructor. Comprehensive treatment of lipid nutrition and metabolic-nutrient interactions.
Ms. Alfin-Slater

260H. Advanced Nutrition: Minerals (2 units). Prerequisites: Biological Chemistry 101A-101B-101C or equivalent, consent of instructor. Comprehensive treatment of mineral nutrition and metabolic-nutrient interactions. Ms. Carlisle

261A. Laboratory Instrumentation and Methods. Lecture, two hours; laboratory, six hours. Prerequisites: course 165 and Chemistry 25 or Biological Chemistry 101A (may be taken concurrently), consent of instructor. Biochemical techniques and instrumentation used in environmental and nutritional sciences, including absorption, atomic absorption and fluorescence spectroscopy, gas chromatography, HPLC, electrophoresis, radioisotopes, and centrifugation. Mr. Panaqua

261B. Advanced Laboratory Techniques in Nutritional Science. Lecture, one hour; laboratory, six hours. Prerequisites: course 261A, consent of instructor. Current biochemical methods emphasizing design of nutritional experiments. Mr. Eckhert

262. Seminar in Nutrition (2 units). Prerequisites: courses 162, 167, one course in the 260 series. Review of current literature in nutritional science. Emphasis on methodology and data evaluation. May be repeated for credit.

263. Seminar in Public Health Nutrition (2 units). Prerequisites: courses 162, 167, one nutrition course in the 200 or 400 series. Review of literature in selected areas of public health nutrition. May be repeated for credit.

264E. Clinical Nutrition Problems (2 units). Prerequisites: one or more nutrition courses in the 200 series, and Biological Chemistry 101A-101B-101C or 201A-201B. Nutrition and nutrient-metabolic interactions in various disease states such as gastrointestinal disorders, renal disease, and liver disease.
Ms. Alfin-Slater, Mr. Kopple, Ms. Swendseid

264F. Clinical Nutrition Problems (2 units). Prerequisites: one or more nutrition courses in the 200 series, and Biological Chemistry 101A-101B-101C or 201A-201B. Nutrition and nutrient-metabolic interactions in various disease states such as cardiovascular disease, diabetes, and obesity.
Ms. Alfin-Slater, Mr. Kopple, Ms. Swendseid

265. Doctoral Research Seminar in Nutritional Sciences (2 units). Prerequisites: at least one course in the 260 series, doctoral standing, consent of instructor. Limited to doctoral students. Presentation of research projects. Emphasis on data evaluation. May be repeated for credit. S/U grading.

270. Maternal and Child Nutrition. Prerequisites: courses 110, 161, 170, or equivalent, 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.
Mr. Jelliffe, Ms. Neumann

M271. Medical Anthropology. (Formerly numbered 271.) (Same as Anthropology M266.) Prerequisites: courses 110, 112, one upper division course in psychology, sociology, or anthropology, or equivalent, consent of instructor. Cross-cultural aspects of human behavior as they relate to perception, treatment, incidence, and prevalence of disease and illness.
Ms. Scrimshaw

272. Seminar on Current Issues in Maternal and Child Health (2 units). Prerequisites: courses 110 or equivalent, 171A, 171B, 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. Mr. A. Chang

M273. Qualitative Research Methodology. (Formerly numbered 273.) (Same as Anthropology M284.) Discussion, three hours; laboratory, one hour. Prerequisites: courses 100A and 125 or 181, an undergraduate or graduate course in social psychology, anthropology, or sociology, 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

M274A-M274B. Population Policy and Fertility. (Same as Sociology M287A-M287B.) Lecture, three hours; discussion, one hour. Prerequisites: courses 100A, 112, 171A, 171B, or equivalent, graduate standing, consent of instructor. Course M274A is prerequisite to M274B. Analysis of research concerning major issues in population policy, with special emphasis on human fertility. Ms. Blake

M274C. Seminar in Population Policy and Fertility. (Same as Sociology M287C.) Seminar, three hours; discussion, one hour. Prerequisites: courses M274A-M274B or equivalent, graduate standing, consent of instructor. Review of current literature in population policy and fertility in conjunction with student research reports. May not be repeated for credit.
Ms. Blake

275. Human Lactation: Biological and Public Health Significance (2 units). Prerequisites: courses 112, 270, or equivalent, consent of instructor. Biological and economic aspects of human lactation in industrialized and developing countries.
Mr. Jelliffe

M276. Culture and Human Reproduction. (Formerly numbered 476.) (Same as Anthropology M262P.) Lecture, two hours; discussion, two hours. Prerequisites: courses 110, 112, 172, 474, or equivalent, 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

278. Clinical Genetics (2 units). Lecture, 90 minutes; discussion, 30 minutes. Prerequisites: courses 100A, 112, 170E, 256, consent of instructor. An in-depth view of genetic disorders, their clinical manifestations, and characteristic approaches to management of the patient and family. Mr. Alfi

279. Advanced Seminar in Population and Family Health (2 units). Prerequisites: doctoral standing, consent of instructor. Current research in population and family health. May be repeated for credit. S/U grading.

280. Change Determinants in Health-Related Behavior. Prerequisites: course 182, three courses from Psychology 135, 170A, Sociology 152, 154, or equivalent, 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

281. Advanced Social Research Methods in Health. Lecture, two hours; laboratory, two hours. Prerequisites: courses 100B, 181, or equivalent, 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.

282. Communications in Health Promotion and Education. Lecture, two hours; discussion, two hours. Prerequisites: courses 182, 183, or equivalent, 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.
Ms. Beckman, Mr. Kar

283E. Social Epidemiology I. (Formerly numbered M283E.) Lecture, two hours; discussion, one hour. Prerequisites: courses 112, 183, three courses in psychology, sociology, or anthropology, or equivalent, 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

M283F. Sociocultural Aspects of Health and Illness: Health Professions. (Same as Sociology M249A.) Lecture, three hours. Prerequisites: course 182, three courses in psychology, sociology, or anthropology, or equivalent, consent of instructor. Sociological examination of the concepts "health" and "illness" and role of various health professionals, especially physicians. Attention to the meaning of professionalization and professional-client relationships within a range of organizational settings.
Mr. Goldstein

M283G. Sociocultural Aspects of Health and Illness: Health Behavior. (Same as Sociology M249B.) Seminar, three hours. Prerequisites: course 182, three courses in psychology, sociology, or anthropology, or equivalent, consent of instructor. Sociocultural factors affecting differential patterns of health behavior, illness behavior, and sick role behavior.
Mr. Berkanovic

283H. Social Epidemiology II. Lecture, two hours; discussion, one hour. Prerequisites: courses 112, 183, three courses in psychology, sociology, or anthropology, or equivalent, 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

284. Ecology of Mental Health. Lecture, three hours. Prerequisites: courses 100A, 112 and 182 or equivalent, consent of instructor. Analysis of occurrence and distribution of mental disorders in the community and the relationships to social structure. Problems of classification, definition, measurement in sociopsychiatric epidemiology, sociocultural and social-psychological factors in mental disorders.
Mr. Goldstein

285. Community Problems in Mental Disorders. Lecture, three hours. Prerequisites: course 182, three upper division or graduate courses in psychology or sociology or equivalent, consent of instructor. Intensive examination of the meaning of mental health, mental illness, and psychotherapy, both curative and preventive, within a public health context. Implications for social policy and planning. Mr. Goldstein

286. Seminar in Behavioral Sciences and Health (2 to 4 units). Lecture, two hours. Prerequisites: courses 283E, M283F, M283G, or equivalent, consent of instructor. Recent significant contributions of behavioral sciences to understanding health and illness, with selected and varying topics each quarter. May be repeated for credit. S/U grading.
Mr. Berkanovic, Mr. Morisky

287. Community Organization in the Health Field. Lecture, two hours; discussion, one hour; fieldwork, eight hours. Prerequisites: courses 182, 183, at least two courses in sociology or anthropology, or equivalent, consent of instructor. Theory and practice of community organization applied to health problems, including analysis of relevant factors in physical and social environment and development of community-based intervention strategies to improve health and health services. Mr. Brown

288. Current Problems in Health Education. Lecture, one hour; discussion, three hours. Prerequisites: courses 183, 280, consent of instructor. Current problems and findings in health education content areas, such as nutrition, mental health, family health, consumer health, safety, communicable and chronic diseases.

289. Issues in Program Evaluation. Discussion, three hours. Prerequisites: course 281, one course in social sciences, or equivalent, consent of instructor. Advanced seminar which explores the problems of planning and implementing evaluation research in the context of local demonstration projects.
Mr. Berkanovic

290. Seminar in Community Health Education (2 units). Prerequisites: courses 288, 481. In-depth analysis of health education concepts as they relate to the professional practitioner.

291. Advanced Topics in Health Survey Research Methods. Lecture, two hours; discussion, two hours. Prerequisites: course 281 or equivalent, 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

292. Alcohol and Drug Abuse: Social Policy Perspectives (3 units). (Formerly numbered M292.) 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. Ms. Beckman

293. Alcoholism and Drug Abuse among Women. (Formerly numbered M293.) Prerequisite: consent of instructor. Discussion of the psychosocial aspects of abuse of alcohol and other drugs among women. Topics include etiology, prevention, treatment, hormonal influences, and the role of the family. Emphasis on current theoretical perspectives and research findings. Ms. Beckman

294. Introduction to Occupational Health Education. Lecture, one hour; discussion; two hours; outside assignment, one hour. Prerequisites: course 156A, two courses in sociology, psychology, or education, 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. Mr. Vojtecky

295A. Advanced Community Health Education. (Formerly numbered 296.) Lecture, two hours; discussion, two hours. Prerequisites: course 182, three upper division courses in social science or public health, consent of instructor. Before planning the educational components of a health program, one must assess the behaviors and factors influencing the health problem. Conceptual, theoretical, and evaluative skills developed and applied in constructing a community-based educational program. Mr. Morisky

295B. Research in Community and Patient Health Education. (Formerly numbered 295.) Lecture, two hours; discussion, two hours. Prerequisites: courses 182, 295A, two other courses in public health, consent of instructor. Designed to provide students with an opportunity to review and discuss the conceptual framework, research methodology, design, implementation, and evaluation of previous and ongoing community and patient health education programs of their choice from selected articles, monographs, or reports.

297. Social and Behavioral Perspectives on Work and Health. Prerequisites: courses 156A, 294, two courses in psychology or sociology, consent of instructor. Discussion of current social and behavioral research, issues, and perspectives on work and health. Mr. Vojtecky

375. Teaching Apprentice Practicum (1 to 4 units). Prerequisite: apprentice personnel employment as a teaching assistant, associate, or fellow. A teaching apprenticeship under the 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.

400. Field Studies in Public Health (2 or 4 units). 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 the M.S. minimum course requirement; four units may be applied toward the 44-unit minimum total required for the M.P.H. degree.

401E. Statistical Methods in Medical Studies (2 units). Prerequisites: course 100C or 100D or Mathematics 152B or equivalent, graduate standing in public health or related field. Design and analysis of biomedical studies. S/U grading (nondivision majors only).

401F. Statistical Methods for Longitudinal Data. Lecture, three hours. Prerequisites: courses 100C or 100D or Mathematics 150C or 152B or equivalent, 112, consent of instructor. Design and analysis of longitudinal or panel studies. S/U grading (nondivision majors only).

401G. Statistical Methods for Case-Control Studies. Lecture, three hours. Prerequisites: courses 100C and 100D, or 101C. 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.

402A. Principles of Biostatistical Consulting (2 units). Lecture, one hour; discussion, one hour. Prerequisites: course 100B or 101B and Mathematics 150B or 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. Discussion, two hours; laboratory, two hours. Prerequisites: courses 100C and 402A, or consent of instructor. Principles and practices of biostatistical consulting. May be repeated for credit. S/U grading.

403. Computer Management of Health Data. Lecture, three hours; laboratory, two hours. Prerequisites: at least one statistics course, two courses in research methodology, 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. Lecture, three hours; discussion, one hour. Prerequisites: courses 100B, 112, or equivalent, consent of instructor. Statistical aspects of the design and implementation of a sample survey. Techniques for the analysis of the data, including estimates and standard errors. Avoiding improper use of survey data.

405. Demographic Materials and Methods. Lecture, three hours; laboratory, two hours. Prerequisites: courses 100A or 101A, 112 or 114, 180, or equivalent, consent of instructor. 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. Lecture, three hours; laboratory, one hour. Prerequisites: course 100B, at least two other upper division research courses, consent of instructor. The 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.

410A. Management of Epidemiologic Data (2 units). Prerequisites: courses 100A, 112 (one course may be taken concurrently with consent of instructor). Concepts, collection, and management of data, with particular emphasis on large-scale data bases. Introduction to computers and appropriate selection and use of packaged programs. Ms. Coulson

410B. Management of Epidemiologic Data (2 units). Prerequisites: course 410A or equivalent, consent of instructor. Development of special purpose programming and compiler languages for epidemiologic problems. Data management in large-scale studies in infectious and chronic diseases. Ms. Coulson

411. Research Resources in Epidemiology (2 units). Lecture, one hour; discussion, one hour. Prerequisites: courses 100B, 211B, consent of instructor. Instruction and practical experience in the use of varied bibliographic aids and sources of information, building of reference files, and presentation of research findings for publication. Ms. Coulson, Mr. Spivey

412. Administration of Preventive and Medical Clinics (2 units). Lecture, one hour; discussion, one hour; field trips. Prerequisites: courses 112, 130, or equivalent, consent of instructor. Delivery of preventive and ambulatory health services in the clinic. Epidemiologic, administrative, and financial aspects of communicable disease, substance abuse, mental health, prenatal care, family planning, cardiovascular disease, presymptomatic screening, venereal disease, and degenerative diseases. Mr. Tennant

413. Preventive Medicine in Public Health Practice. Lecture, two hours; discussion, two hours. Prerequisites: courses 100A, 110, 112, 130, or equivalent, graduate standing, consent of instructor. Development, current status, and potential of preventive medicine in public health practice, focusing on the risk indicator approach (exercise, alcohol, stress, etc.), with consideration of program settings, delivery problems, and issues. Mr. Fielding

414. Practical Epidemiologic Investigations. Lecture, one hour; laboratory, three hours. Prerequisites: courses 100A, 112 or 114, 211A, 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

415. Epidemiology for Developing Countries. (Not the same as course 415 prior to Fall Quarter 1986.) Prerequisites: courses 100A, 112 or equivalent, two courses in biological sciences or equivalent, 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. Kraus

430. Health Service Organization and Management Theory. Prerequisites: course 131, two upper division courses in social sciences, 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 service organizations.

431. Managerial Processes in Health Service Organizations. Lecture, one hour; laboratory, three hours. Prerequisites: course 430, 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.

432. Integrative Seminar in Health Services Management. 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. Lecture, three hours; discussion, one hour. Prerequisites: courses 131, 400 (at least six units), 430, 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.

434. Quantitative Methods in Health Services Management. Prerequisite: course 139. Quantitative methods for managerial decision making. Deterministic and stochastic analyses of problems in resource allocation, inventory control, task sequencing, patient and facilities scheduling, demand forecasting, and cost-benefit analysis.

435. Manpower Management in Health Services Organizations (2 units). Prerequisites: course 131 or equivalent, consent of instructor. Introduction to personnel administration and labor relations as they apply to health care facilities.

436. Financial Management of Health Service Organizations. Prerequisites: courses 131, 141, 430, 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. Coyne

437. The Legal Environment of Health Services Management (2 units). 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. Mr. Liset

438. Issues and Problems of Local Health Administration (2 units). Prerequisites: courses 110, 130, one additional health services course, consent of instructor. Analysis of organizational issues currently faced by local health departments in increasing scope and quality of services; exploration of administrative problems and interagency relationships. Ms. Alkon

439. Dental Care Administration (2 units). Prerequisites or corequisites: courses 100A, 112, or equivalent, consent of instructor. In-depth examination of several specific dental care policy issues: manpower, relationship of treatment to disease, national health program strategies, and evaluation mechanisms. Mr. Schoen

440A. Health Information Systems: Organization and Management. Lecture, two hours; laboratory, three hours. Prerequisites: courses 140A-140B or equivalent, consent of instructor. Principles of and systems relating to organization and management of a health facility's health information system. Ms. Lugg

440B. Health Information Systems: Organization and Management. 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. Ms. Lugg

442. Principles and Practices of Medical Care Audit (2 units). Prerequisites: courses 100A, 112, 130, or equivalent, consent of instructor. Analysis of systems used in evaluating health care professional providers' performances in hospital and ambulatory settings. Health information systems and data available used for medical audits. Mr. Goodman

443D. Advanced Hospital Financial Management Simulation. Lecture, one hour; discussion, one hour; laboratory, two hours. Prerequisites: courses 130, 141, 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. Mr. Coyne

443E. Advanced Hospital Financial Management Seminar. Prerequisites: courses 130, 131, 141, 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. Mr. Coyne

444A. Information Processing for Health Planners. Prerequisites: courses 100A or 101A, 134, consent of instructor. Information theory presented as framework for understanding data analysis. Computer used to implement data analysis results with previously presented information systems concepts.

444B. Applied Methodology in Health Planning. Lecture, three hours; fieldwork, four hours. Prerequisites: courses 130 or equivalent, 444A, 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

445A-445B. Practicum in Health Planning and Policy. Field placement. Prerequisites: courses 100A, 100B, 130 (may be taken concurrently), 233, 248, or equivalent, consent of instructor. Required of all M.S. health planning and policy students. Preparation for and subsequent analysis of 10-week work experience undertaken during summer between first and second year. In Progress and S/U grading.

446. Financing Health Care. Prerequisites: course 130, 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

447D. Management of Health Maintenance Organizations. Lecture, three hours. Prerequisites: courses 130, 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 the national health policy. Mr. Wasserman

447E. Health Insurance Principles and Programs. Prerequisites: courses 130, 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

447F. Health of Americans: Trends and Issues. Prerequisites: courses 100A, 110, 112, 130, or equivalent, graduate standing, consent of instructor. Analysis of major trends in mortality, morbidity, and other aspects of health status, what determines these trends, services designed to influence these trends, and nature and extent of public responsibility for such services.

448. Special Populations: Health Service Policy Issues. (Not the same as course 448 prior to Spring Quarter 1986.) Prerequisites: courses 138, 230A-230B, 232, or equivalent, consent of instructor. Limited to doctoral students or M.S. and M.P.H. students with advanced degrees. A doctoral-level seminar which focuses on health services for selected priority population groups, integrating the scientific, organizational, economic, ethical, and political evidence as a basis for public policy. Different populations may be selected for attention each year. Ms. Myers

M449. Health Policy Issues for Dental Professionals (2 units). (Same as Dentistry M422.) Prerequisites: courses 103, 112, 130, or equivalent, consent of instructor. Current public health policy issues in dental health, including cost, financing, role of government, and quality assurance. Mr. Schoen

M449D. Case Studies in Dental Practice (2 units). (Same as Dentistry M433A.) Provides students with a practice methodology for evaluation of dental care settings. Didactic and field experience, providing a foundation for evaluation of programs. Mr. Marcus

M449E. Introduction to Health Care (2 units). (Same as Dentistry M441C.) Description and analysis of the American dental care system from historical, ethical, and legal perspectives. Assessment of how dentistry fits within the general provision of health care services in America, with comparisons to dental care provisions in other countries. Mr. Freed

450. Environmental Measurements. Lecture, two hours; laboratory, four hours. Prerequisites: courses 153 or 261A, 250. 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. Mr. Mah, Ms. Valentine

451. Water Quality and Health. Lecture, three hours; discussion, one hour. Prerequisites: courses 150, 250, 450, or equivalent, consent of instructor. An 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

452. Environmental Hygiene and Appropriate Technologies (2 units). Prerequisites: courses 112, 150, 153, 254, consent of instructor. Environmental sanitation of water supplies in rural and developing areas. Review of water quality problems and solutions for the nonurban, developing community. Technical, socioeconomic, and cultural problems associated with maintenance and delivery of high water quality. Mr. Day

454. Environmental Policy Decision Making. Lecture, four hours; discussion, one hour. Prerequisite: course 254. 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

457. Environmental Hygiene Practices (2 units). Prerequisites: courses 112, 150, 154, 450. 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

459. Critical Review of the Scientific Basis of Occupational Standards. Prerequisites: courses 100A, 112, 156A, 156B. Designed to provide students with the opportunity to review the scientific basis for the association of selected occupational exposures with disease. Special emphasis on critical evaluations of the literature. Attention specifically to the interface of science and regulatory standards. Mr. Wegman

460. Principles of Public Health Nutrition. Prerequisites: courses 100A, 130 (may be taken concurrently), 262 or 263, consent of instructor. Survey of methods of evaluating and improving nutritional status of population groups. Ms. Hunt

461. Computer Use in Dietary Assessment. Lecture, two hours; laboratory, six hours. Prerequisites: courses 100A, 112 (may be taken concurrently), 162, 163, 460, consent of instructor. Collection and computer analysis of nutrient intake data for the purpose of nutritional assessment of population groups. Ms. Murphy

462. Nutritional Assessment: Laboratory Assays (2 units). Lecture, one hour; laboratory, three hours. Prerequisites: courses 162, 165, 167, or equivalent, one course in the 260 series. Biochemical methods for evaluating nutritional status of individuals or population groups. Techniques for measuring vitamins, minerals, lipids, and proteins. Ms. Swendseid

463A. Preparation for Practicum in Public Health Nutrition (2 units). Discussion, one hour; laboratory or fieldwork, five hours. Prerequisites: courses 112, 165, 460 (may be taken concurrently), Chemistry 152, consent of instructor. Students analyze a public health nutrition problem and prepare to conduct and evaluate the public health nutrition practicum. Ms. Hunt, Mr. Jones

463B. Practicum in Public Health Nutrition. (Formerly numbered 463). Discussion, two hours; laboratory or fieldwork, 10 hours. Prerequisites: courses 400 (may be taken concurrently), 460, 461, 463A, consent of instructor. Students analyze a public health nutrition problem and conduct and evaluate the public health nutrition practicum. Ms. Hunt, Mr. Jones

470A. International Health Agencies and Programs. Prerequisites: three upper division or graduate courses in social, health, or behavioral sciences, 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

470B. Advanced Issues in International Health. Lecture, two hours; discussion, two hours. Prerequisites: courses 240, 270, 470A or 472A or 475 or equivalent, 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

471A. Women's Health: Principles, Programs, and Policies. (Not the same as course 471A prior to Fall Quarter 1985.) Prerequisites: courses 100A, 110, 130 or equivalent, 171A, consent of instructor. In-depth consideration of health services, programs, and issues relevant to nonreproductive women's health care. Subjects include health status of women, endocrinological issues, chronic diseases, cancer, surgery in women, psychosocial and life-style issues, and women's health services. Mr. Richwald

471B. Perinatal Health Care: Principles, Programs, and Policies. (Not the same as course 471B prior to Winter Quarter 1986.) Prerequisites: courses 100A, 110, 130 or equivalent, 171A, 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 the federal, state, and county levels, and medical-legal issues. Mr. Richwald

471C. Family Planning: Public Health Principles, Programs, and Policies. Prerequisites: courses 100A, 110, 130, 171A, or equivalent, consent of instructor. A critical review of public health issues in the area of family planning, abortion, and sterilization. Health care problems, delivery of services, and public programs. Mr. Richwald

472A. Maternal and Child Health in Developing Areas. Prerequisites: courses 270, 470A, or equivalent, 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 milieux. Ms. Neumann

472B. Recent Developments in Maternal and Child Health in Disadvantaged Countries (2 units). Prerequisites: courses 171A, 171B, 270, 472A, or equivalent, 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. Mr. Jelliffe

472D. Overseas Refugee Health Programs (2 units). Lecture, one hour; discussion, one hour. Prerequisites: courses 110, 112, 270 or 472A, or equivalent, consent of instructor. Comprehensive overview of the health problems of overseas refugee situations and of programs designed to deal with these special circumstances. Mr. Jelliffe

473A. Handicapped Children: The Public Health Concern (2 units). Prerequisites: courses 110, 130, 170, or equivalent, consent of instructor. Etiology, prevalence, social consequences, and remedial programs for the major handicapping conditions in children. Emphasis on biological and social factors, current research, and program developments. Mr. Katz

473D. Child Health in the United States of America. Lecture, three hours; discussion, one hour; one field trip, three hours. Prerequisites: courses 110, 112, 130, 170, or equivalent, consent of instructor. Examination of the health problems affecting infants, children, and adolescents in the United States and exploration of alternatives of priorities, approaches, services, and policies aimed at ameliorating these problems. Mr. Chang

473E. Adolescent Health: Major Issues and Problems (2 units). Lecture, two hours; field trips, 21 hours. Prerequisites: courses 110, 171A, 171B, 172, or equivalent, consent of instructor. Overview of adolescent growth and development, significant physical and psychological problems, issues in health services delivery, and laws affecting youth and the juvenile offender. Mr. Jelliffe and the Staff

473F. Research Seminar in Community Child Health Services (2 units). Discussion, one hour; laboratory, one hour; field trips, two hours. Prerequisites: courses 100A, 125, 130, 171A, 171B, or equivalent, 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. Mr. Chang

473G. Health Services in Child Day Care. Lecture, two hours; discussion, two hours; one field trip, three hours. Prerequisites: courses 110, 112, 130, 170, or equivalent, 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. Mr. Chang

473H. Child Health Policy. Lecture, three hours; discussion, one hour. Prerequisites: courses 130 or equivalent, 171A, 172, 473D, consent of instructor. Analysis of the 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 the politics of developing a child health policy. Ms. Roemer

474. Self-Care and Self-Help in Community Health. Lecture, two hours; discussion, two hours. Prerequisites: courses 112, 130, fieldwork internship, or equivalent, consent of instructor. Review of background, principles, concepts, programs, and research concerning the emerging field of self-care in health. Mr. Katz

475. Planning and Development of Family Health Programs. Lecture, two hours; discussion, two hours. Prerequisites: courses 100A, 125 or 470A, 170, 270, or equivalent, consent of instructor. Theory, guidelines, and team exercise for planning community health/family planning projects in the United States 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

476D. Analysis of Family Health and Fertility Data. Lecture, three hours; laboratory, two hours; assignments, 12 hours. Prerequisites: courses 100B, 125 or 181, 217, or equivalent, consent of instructor. Analysis and interpretation of large-scale data sets, case studies, and experimental data in the area of applied family health and fertility. Computer used as a tool in the management and analysis of the data necessary for interpreting and preparing research articles. Ms. Bourque

477. Assessment of Family Nutrition. Prerequisite: course 270. 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. Mr. Jelliffe, Ms. Neumann

478. Anthropometric Nutritional Assessment (2 units). Prerequisites: course 270 or 477 or equivalent, consent of instructor. Practicum in anthropometry illustrating how it is used in nutritional assessment. Data presentation and interpretation. Didactic sessions, readings, demonstrations, and practical experience in clinical anthropometric techniques. Ms. Neumann

478E. Cytogenetics Practicum (1 unit). Prerequisites: courses 100A, 112, 170E, 256, consent of instructor. Explanation and applied experiences in cytogenetic laboratory procedures, including culturing, harvesting, microscopy, photography, karyotyping, and interpretation of results. Mr. Alfi

479. Nutrition Programs and Policies for Families in the Third World. Lecture, two hours; discussion, two hours. Prerequisites: course 472A or equivalent, consent of instructor. Programs and policies to improve the nutrition of families in Third World countries, with special reference to mothers and young children. Ms. Jelliffe

479D. Nutrition Education and Training: Third World Considerations (2 units). Lecture, one hour; student participation, one hour. Prerequisite: course 472A or equivalent, 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

480. Health Education in Clinical Settings. Lecture, two hours; discussion, two hours. Prerequisites: courses 130, 183, 280, 282, consent of instructor. Analysis of the 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.

481. Administrative Relationships in Health Education. Lecture, two hours; discussion, two hours. Prerequisites: courses 130, 183, 280, 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

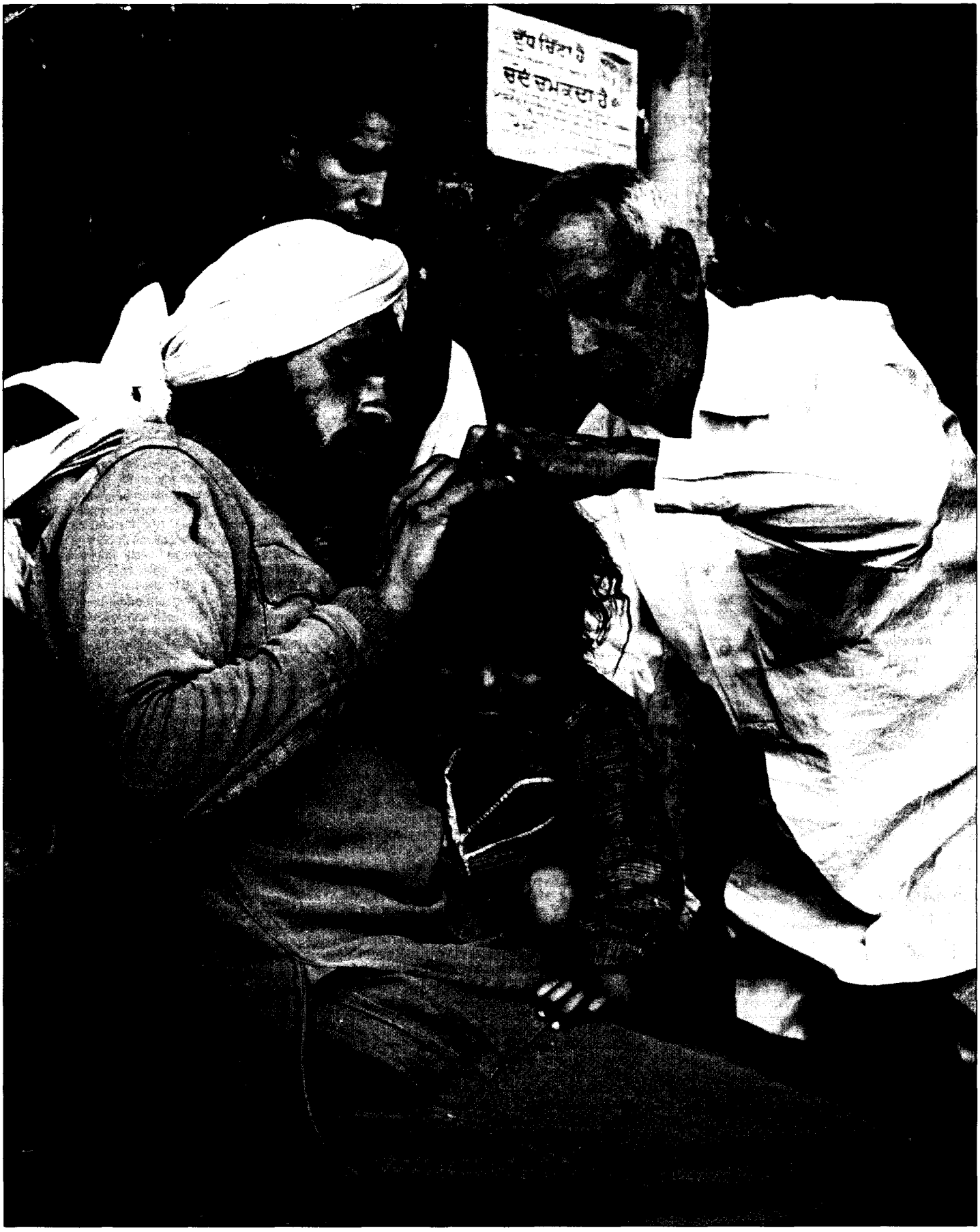
482. Practicum in Health Education (4 or 8 units). Discussion, two hours; fieldwork, six or 18 hours. Prerequisites: courses 182, 280, consent of instructor. Study of community and group-felt needs as reflected in behavior. Analysis of data for understanding, planning, implementing, and evaluating need-directed health education and medical care programs. Ms. Richards

483. Social Interventions for Health Promotion and Evaluation. Lecture, two hours; discussion, one hour; seminar, one hour. Prerequisites: courses 182, 183, 280, or equivalent, 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 the contexts of planned change in health-related behaviors. Mr. Kar

484. Introduction to Program Evaluation. Lecture, two hours; discussion, two hours. Prerequisites: course 100A, three courses in social sciences, or equivalent, consent of instructor. An introduction to the principles of program evaluation as they are applied to public health programs in the community. Mr. Berkanovic, Mr. Vojtecky

485. Benefit-Cost Evaluation of Health Programs. Lecture, two hours; discussion, two hours. Prerequisites: courses 100A, 112, Economics 102, or equivalent, consent of instructor. Cost-benefit and cost-effectiveness principles and techniques employed to evaluate public health programs and projects.

486. Death, Suicide, and Homicide: A Public Health Perspective. Lecture, three hours; field trips, outside readings, and reports, one hour. Prerequisites: courses 100A or 103, 112, 182, 183, or equivalent, consent of instructor. Identification and discussion of the role of public health in suicide and homicide prevention, and death and dying. Lectures range from vital statistics to the role of the behavioral scientist in prevention, intervention, and postvention of suicide and homicide. Ms. Allen



Field studies in India.

487. Health Applications of Community Organization. Seminar, three hours; fieldwork, four hours. Prerequisites: courses 182, 183, 287, at least one other public health course, or equivalent, consent of instructor. Application of community organization methods to health problems and health education programs, including community-based needs assessment, planning and developing community-based projects, and evaluation. Emphasis on organizational and process skills; class fieldwork project.

Mr. Brown

488. Consumer Health Behavior. Lecture, three hours. Prerequisites: course 182, at least three courses in anthropology, psychology, or sociology, consent of instructor. Discussion and demonstration of the role of economics and economic incentives and disincentives in altering consumer health behavior.

490. Professional Writing for Public Health (2 units). 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. May not be applied toward any degree requirements. S/U grading.

Mr. Bjork

495. Teacher Preparation in Public Health (2 units). Prerequisites: 18 units of cognate courses in area of specialization, consent of department chair. May not be applied toward the master's degree minimum total course requirement. 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. Course is used to record enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. No more than eight units may be applied toward the master's degree minimum total course requirement; may not be applied toward the minimum graduate course requirement. S/U grading.

502. UCLA/Hawaii Western Consortium Exchange (4 to 16 units). Prerequisite: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Course is used to record enrollment of UCLA students in courses taken at the University of Hawaii, Manoa, as part of the UCLA/UH Western Consortium Exchange Program. Only the equivalent of eight quarter units taken at UH may be applied toward the degree. Extra units may be applied toward division requirements by petition to the Public Health Student Affairs Office. UH letter-graded courses appear on the UCLA transcript with the letter grades, while UH Cr/NCr-graded courses appear as S/U grades. Grade points from these courses are not counted in the UCLA grade-point average.

596. Directed Individual Study or Research (2 to 8 units). Prerequisites: graduate standing, consent of instructor. Individual guided studies under direct faculty supervision. Only four units may be applied toward the 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). Prerequisites: graduate standing, consent of instructor. May not be applied toward any degree requirements. May be repeated for credit. S/U grading.

598. Master's Thesis Research (2 to 8 units). Prerequisite: consent of instructor. Only four units may be applied toward the M.P.H. and M.S. minimum total course requirement; may not be applied toward the minimum graduate course requirement. May be repeated for credit. S/U grading.

599. Doctoral Dissertation Research (2 to 8 units). Prerequisite: consent of instructor. May not be applied toward any degree requirements. May be repeated for credit. S/U grading.

Environmental Science and Engineering (Interdepartmental)

46-081 Public Health, (213) 206-1278

Professors

Orson L. Anderson, Ph.D. *(Earth and Space Sciences)*
Donald Carlisle, Ph.D. *(Earth and Space Sciences)*
David J. Chapman, Ph.D. *(Biology)*
Christopher S. Foote, Ph.D. *(Chemistry)*
William H. Glaze, Ph.D. *(Public Health), Director*
Malcolm S. Gordon, Ph.D. *(Biology)*
William E. Kastenberg, Ph.D. *(Mechanical, Aerospace, and Nuclear Engineering)*
Robert A. Mah, Ph.D. *(Public Health)*
Richard L. Perrine, Ph.D. *(Civil Engineering)*
David H. Wegman, M.D. *(Public Health)*
Morton G. Wurtele, Ph.D. *(Atmospheric Sciences)*
Jeffrey I. Zink, Ph.D. *(Chemistry)*

Associate Professors

Talbot R. Page, Ph.D. *(Public Health)*
Michael K. Stenstrom, Ph.D. *(Civil Engineering)*

Assistant Professors

Douglas M. Mackay, Ph.D. *(Public Health)*
Derek C. Montague, Ph.D. *(Atmospheric Sciences)*

Lecturer

Paul M. Merifield, Ph.D. *(Earth and Space Sciences)*

Adjunct Professor

Leona M. Libby, Ph.D.

Adjunct Assistant Professors

Laura M. Lake, Ph.D.
Bart B. Sokolow, D.Env.

Adjunct Lecturer

Robert G. Lindberg, Ph.D. *(Public Health)*

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 program in environmental science and engineering, 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/ecosystems, 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 Graduate Record Examination (GRE) scores, 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 quarter 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 statistics; (6) one year of introductory physics with laboratory. Any of the courses may be taken after you arrive at UCLA. Conditional admission is given to students who are otherwise qualified.

Subject to available funds, the program offers fellowships 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.

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, health risks of toxic substances, and environmental problems common to the United States and Mexico. Also, you may slant your work toward greater emphasis either on the science engineering side or on the science policy side of your specialty.

Course Requirements

A minimum of 15 courses after admission to the program is required, including three core courses offered by the program faculty. At least three breadth courses, in addition to the core courses, must be at the graduate level. Breadth courses from the following categories are selected in consultation with your faculty adviser. Exact requirements depend on your previous training.

Environmental Science: Five courses, including environmental chemistry; environmental biology, microbiology, and ecology (two courses); environmental geology; and atmospheric sciences.

Environmental Engineering and Technology: Seven courses, including hydrology; advanced statistics, computer science, or applied mathematics; engineering (three courses); and toxicology or epidemiology.

Social Sciences/Law: Three courses, including one in environmental law.

Electives: Three courses, of which individual instruction and research may be used to satisfy all or part of the requirement.

Core Courses: You must complete three four-unit core courses, offered by the program faculty, with grades of B or better. The courses cover critical issues and methods in environmental science, engineering, and policy. Successful completion of each core course is prerequisite for advancement to the problems course sequence.

Seminar: You are required to enroll in Environmental Science and Engineering 411 each quarter you are in residence.

Problems Course: Before proceeding to the problems course sequence, you must have completed a minimum of 12 breadth courses and the three core 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 and may be met by completing three consecutive quarters (eight units per quarter) on a single theme, or as a minimum, at least two consecutive quarters devoted to a single theme plus one quarter of participation or activity approved by the faculty. Enrollment in more than one problems course per quarter 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 and selected topics in classical and contemporary subjects in the program's areas of interest. A reading list is provided.

When you have completed all other course requirements and are in the final quarter of the problems course, 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 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. During the internship, you must register for eight units of a 599 course in each academic-year quarter.

Dissertation and 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 throught 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. The final oral examination includes the problems course, internship experience, and a defense of your dissertation.

If the seminar and all other elements of your performance 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 the 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 an internship approved by the 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 the environmental science and engineering doctoral program. Development of analytical or experimental skills essential to the solution of environmental problems studied within courses 400A, 400B, 400C, and 400D.

411. Environmental Science and Engineering Seminar (2 units). Prerequisite: consent of instructor. Required of graduate students in environmental science and engineering each quarter in residence. Current topics in 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, program chair, and graduate dean, and host campus instructor, department chair, and graduate dean. Course is used to record the enrollment of UCLA students in courses taken under cooperative arrangements with neighboring institutions. 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.

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, 2241 Murphy Hall, UCLA, Los Angeles, CA 90024.

Students may complain of any action which they believe discriminates against them on the ground of race, color, national origin, religion, sex, sexual orientation, or handicap and may contact the Dean of Students Office, 2224 Murphy Hall, for further information and procedures.

Residence for Tuition Purposes

Students who have not been residents of California for more than one year immediately prior to the residence determination date for each term in which they propose to attend the University are charged, along with other fees, a nonresident tuition fee. 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 the establishment of legal residence for tuition purposes at the University of California are governed by the California Education Code and by Standing Orders of The Regents of the University of California. Under these rules residence for tuition purposes can be established by adult citizens or by certain classes of aliens. There are also particular rules applicable to the residence classification of minors (under 18) in that such residence is generally regarded as being derived from the parent or parents with whom the minor last resided.

Who Is a Resident?

In order to be classified a resident for tuition purposes, an adult, other than an adult alien present in the U.S. under the terms of a nonimmigrant status which precludes the adult alien from remaining permanently in the U.S., must have established his or her residence in California for more than one year immediately preceding the residence determination date for the term during which he or she proposes to attend the University and relinquished any prior residence. An individual must couple physical presence within this state for one year with objective evidence that such presence is consistent with intent to make California his or her permanent home and, if these steps are delayed, the one-year durational period will be extended until both presence and intent have been demonstrated for one full year. Indeed, physical presence within the state solely for educational purposes does not constitute the establishment of California residence under state law, regardless of the length of stay. A woman's residence shall not be derivative from that of her husband or vice versa.

Establishing the Requisite Intent to Become a California Resident

Relevant evidence which can be relied on to demonstrate one's intent to make California the permanent residence includes registering to vote and voting in California elections; designating California as the permanent address on all school, employment, and military records; obtaining a California driver's license or if a nondriver, a California identification card; obtaining California vehicle registration; paying California income taxes as a resident, including income earned outside California from the date residence is established; establishing an abode where one's permanent belongings are kept within California; licensing for professional practice in California; and the absence of this evidence in other states during any period for which residence in California is asserted. Documentary evidence may be required. All relevant evidence will be considered in the classification determination.

Salary and Employment Information, University of California

FIELD OF STUDY	DEGREE LEVEL OF GRADUATES			DEFINITE JOB COMMITMENT[2]
	BACHELOR'S	MASTER'S	DOCTORATE	
	AVERAGE MONTHLY SALARY[1]			
Engineering	$2,281	$2,640	$3,632	68.6%
Humanities	1,512	—	—	51.5
Life Science	1,912	—	—	48.6
Management	1,623	2,318	—	—
Physical Science	2,068	2,580	—	58.7
Social Science	1,603	1,363	—	63.8

[1]Source: A national survey of a representative group of colleges conducted by the College Placement Council, representing the 60 percent range of offers for December 1985 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.

[2]Source: *The Job Market for UCLA's 1985 Graduates.* Percentages are based only on those students with bachelor's degrees who began working full time immediately after graduation.

General Rules Applying to Minors

The residence of the parent with whom an unmarried minor (under age 18) child lives is the residence of the unmarried minor child. The residence of an unmarried minor who has a parent living cannot be changed by his or her own act, by the appointment of a legal guardian, or by relinquishing a parent's right of control. When the minor lives with neither parent, residence is that of the parent with whom the student lived last. The minor may establish residence when both parents are deceased and a legal guardian has not been appointed. Where the residence of the minor is derived, the California residence of the parent from whom it is derived must satisfy the one-year durational requirement.

Specific Rules Applying to Minors

(1) **Divorced or Separated Parent Situations** — The student must move to California to live with the California resident parent while still a minor (before the 18th birthday) in order to receive derivative California resident status. Otherwise, he or she will be treated like any other adult coming to California to establish legal residence.

(2) **Parent of Minor Moves from California** — A student who remains in the state after his or her parent, who was domiciled in California for at least one year immediately prior to leaving and has, during the student's minority and within one year immediately prior to the residence determination date, established residence elsewhere, shall be entitled to resident classification. This exception continues until the student has attained the age of majority and has resided in the state the minimum time necessary to become a resident so long as, once enrolled, he or she maintains continuous attendance at an institution.

(3) **Self-Support** — Nonresident students who are U.S. citizens or eligible aliens, who are minors or 18 years of age, and who have demonstrated the intent to make California their permanent home, and can evidence that they have been self-supporting and actually present within California for the entire year immediately prior to the residence determination date, may be eligible for resident status.

(4) **Two-Year Care and Control** — Students who are U.S. citizens or eligible aliens shall be entitled to resident classification if immediately prior to the residence determination date, they have lived with and been under the continuous direct care and control of any adult or adults other than a parent for not less than two years, provided that the adult or adults having such control have been California residents during the year immediately prior to the residence determination date. This exception continues until the student has attained the age of majority and has resided in the state the minimum time necessary to become a resident student, so long as continuous attendance is maintained at an institution.

Exemptions from Nonresident Tuition

(1) **Member of the Military** — A student who is a member of the United States military stationed in California on active duty, except a member of the military assigned for educational purposes to a state-supported institution of higher education, may be exempt from the nonresident tuition fees until he or she has resided in the state the minimum time necessary to become a resident. He or she must provide the Residence Deputy with a statement from the commanding officer or personnel officer stating the assignment to active duty in California is not for eductional purposes and must include the dates of assignment to the state.

(2) **Spouse or Other Dependents of Military Personnel** — Exemption from payment of the nonresident tuition fee is available to a spouse or to a natural or adopted child or stepchild who is a dependent of a member of the United States military stationed in California on active duty. Such exemption shall be maintained until the student has resided in California the minimum time necessary to become a resident. The student must petition for this exemption each term he or she is eligible. If a student is enrolled in an institution and the member of the military (a) is transferred on military orders to a place outside this state and continues to serve in the Armed Forces or (b) retires from active duty immediately after having served in California on active duty, the student shall retain this exemption under conditions set forth above.

(3) **Child or Spouse of Faculty Member or Member of UC Management Program** — To the extent that funds are available, the unmarried, dependent child under age 21 or the spouse of either a member of the University faculty who is a member of the Academic Senate or a member of the UC Management Program may be eligible for a waiver. Confirmation of the faculty member's membership on the Academic Senate or the manager's membership in the UC Management Program shall be secured each term before this waiver is granted.

(4) **Child of University Employee** — To the extent that funds are available, the unmarried, dependent child under 21 of a full-time University employee whose assignment is outside California (e.g., Los Alamos Scientific Laboratory) and who has been employed by the University for more than one year may be entitled to a waiver of the nonresident fee. The parent's employment status with the University shall be ascertained each term that the student requests the waiver.

(5) **Children of Deceased Public Law Enforcement or Fire Suppression Employees** — Children of deceased public law enforcement or fire suppression employees who were California residents and who were killed in the course of fire suppression duties or law enforcement duties may be entitled to an exemption of the nonresident fees.

Maintaining Residence During a Temporary Absence

A student's temporary absence from the state for business or educational purposes will not necessarily constitute loss of California residence unless the student has acted inconsistently with the claim of continued California residence during his or her absence. The burden is on the student to show retention of California residence during an absence from the state. Steps a student (or parent of a minor student) should take to retain California resident status for tuition purposes include:

(1) Continue to use a California permanent address in all records — educational, employment, etc.

(2) Satisfy California resident income tax obligations. Individuals claiming permanent California residence are liable for payment of income taxes on their total income from the date they establish California residence. This includes income earned in another state or country.

(3) Retain California voter's registration, voting by absentee ballot.

(4) Maintain California driver's license and vehicle registration. If it is necessary to change driver's license and/or vehicle registration while temporarily residing in another state, these must be changed back to California within 10 days for the driver's license and within one year or when registration expires (whichever comes first) for vehicle registration.

Reclassification Petitions

Students MUST PETITION IN PERSON at the Registrar's Office for a change of classification from nonresident to resident status. All changes of status must be initiated prior to the late registration period for the term of attendance for which the student seeks reclassification.

California law requires that financial independence be included among the factors considered for students classified as nonresidents and seeking reclassification as residents. Financial independence will not be considered for graduate students who are teaching assistants, research assistants, or teaching associates employed on a 0.49 or more time basis for the term for which reclassification is sought. For detailed information regarding reclassification, contact the Campus Residence Deputy in 1134 Murphy Hall (825-3447).

Time Limitation on Providing Documentation

If additional documentation is required for either an initial residence classification or reclassification but is not readily accessible, the student will be allowed a period of time no later than the end of the applicable term to provide such documentation.

Incorrect Classification

All students classified incorrectly as residents are subject to reclassification and to payment of all nonresident fees not paid. If incorrect classification results from false or concealed facts by the student, the student is 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 CAMPUS RESIDENCE DEPUTY, Office of the Registrar, 1134 Murphy Hall, 405 Hilgard Avenue, Los Angeles, CA 90024 (825-3447) or to the Legal Analyst-Residence Matters, 590 University Hall, Berkeley, CA 94720. NO OTHER UNIVERSITY PERSONNEL ARE AUTHORIZED TO SUPPLY INFORMATION RELATIVE TO RESIDENCE REQUIREMENTS FOR TUITION PURPOSES. The student is cautioned that this summation is NOT a complete explanation of the law regarding residence. A copy of the regulations adopted by The Regents of the University of California is available for inspection in the Registrar's Office, 1134 Murphy Hall. Please note that changes may be made in the residence requirements between the publication date of this statement and the relevant residence determination date. Any student, following a final decision on residence classification by the Residence Deputy, may make a written appeal to the Legal Analyst within 90 days of the notification of the final decision by the Residence Deputy.

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 a student is a legal resident for tuition purposes. Registration cannot be processed without this information. The Registrar's Office on campus maintains the requested information. The student has the right to inspect University records containing the residence information requested on the form.

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 proceedings 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.

Student Grievance Procedures

Grounds for student grievance are the application of nonacademic criteria such as considerations of race, politics, religion, sex, or evaluation of student work by criteria not directly reflective of performance related to course requirements. Students having such a grievance should talk to the instructor of the course, the department chair, the dean or divisional dean of the college or school, and the vice chancellor — faculty relations, in that sequence.

If the dispute is not resolved through these discussions, a grievance may be filed with the Charges Committee of the Academic Senate (3125 Murphy Hall). If it is determined that probable cause exists for violation of the faculty code of conduct, the grievance is then brought to the Committee on Privilege and Tenure.

If an instructor in charge of a course has been determined by the Committee on Privilege and Tenure to have assigned a grade on any basis other than academic grounds, that committee shall inform the divisional Academic Senate chair. Within a period of two weeks after notification, guided by the Committee on Committees, the divisional Senate chair shall establish an ad hoc committee to determine whether the grade shall be changed. The ad hoc committee shall consist of at least three members, with at least one member a representative of the department involved. The ad hoc committee will obtain whatever records are available and use these records to make a final decision concerning the grade. If the records are not adequate, then the committee may assign a grade of Pass, or allow the student to repeat the course without penalty. The ad hoc committee will report to the divisional chair, who shall report the change of grade to the Registrar. In order to protect the student, the grade shall be changed, if warranted, within four weeks following the formation of the ad hoc committee.

Correction of Grades

All grades, except DR, I, and IP, are final when filed by an instructor in the end-of-term course report. However, the Registrar 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 division 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.

Undergraduate Final Examinations

No student shall be excused from assigned final examinations except as provided below.

The instructor in charge of an undergraduate course shall be 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 methods 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 shall not exceed three hours' duration and shall be given only at the times and places established by the department chair and the Registrar.

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 quarter of instruction, during which period students shall have access to their examinations.

Student Conduct: Violation of University Policies

Students are subject to disciplinary action for several types of misconduct, including dishonesty such as cheating, plagiarism, or knowingly furnishing false information to the University; forgery or other misuse of University documents, keys, or identifications; theft or damage to property; unauthorized entry to University properties; disruption of teaching, research, administration, disciplinary procedures, or other University activities; physical abuse or threats of violence; disorderly conduct; disturbing the peace; the use, possession, or sale of narcotic or illegal drugs on campus 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), *UCLA Student Conduct Code of Procedures*, and *UCLA Activity Guidelines.* Copies of these booklets are available in the Dean of Students Office, 2224 Murphy Hall, or the Center for Student Programming, 161 Kerckhoff Hall.

In addition, the Dean of Students 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.

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 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 and subsequently through a hearing; and (5) to file complaints with the Department of Education regarding alleged violations of the rights accorded them by the Federal Act.

The University may publish, without the student's prior consent, items in the category of "public information," which are name, address, telephone number, date and place of birth, major field of study, dates of attendance, degrees and honors received, 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. Students who do not wish all or part of the items of "public information" disclosed may, with respect to address and telephone number, so indicate on the UCLA Address/Data portion of the Registration Form, and with respect to the other items of information, by filling out a *Decline to Release Public Information* form available in the Registrar's Office, 1105 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, telephone number, and unit head. 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.

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 Records Management Coordinator, Business Enterprises Administration Building, 270 De Neve Drive. Information concerning these matters and students' hearing rights is also available there.

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 64 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 the publication of the 1985-86 *UCLA General Catalog.*)

College of Letters and Science

*Arthur Andersen and Company Alumni Chair in Business Economics
Ralph Bunche Chair in International Studies
Flint Professorship of Philosophy
Gloria and Paul Griffin Chair in Philosophy
Marvin Hoffenberg Chair in Political Science
Endowed Chair in Modern European History
Franklin D. Murphy Chair in Italian Renaissance Studies
Narekatsi Chair in Armenian Studies
Presidential Chair
*Charles Speroni Chair in Italian Literature and Culture
The 1939 Club Chair in Holocaust Studies
UCLA Alumni and Friends of Japanese Ancestry Chair in Japanese American Studies
UCLA Foundation Chair
Saul Winstein Chair in Organic Chemistry

College of Fine Arts

Edward W. Carter Chair in Netherlandish Art
Armand Hammer Chair in Leonardo Studies
UCLA Art Council Chair in Art

School of Engineering and Applied Science

L.M.K. Boelter Chair in Engineering
Hughes Aircraft Company Chair in Manufacturing Engineering
Ralph M. Parsons Chair in Chemical Engineering

Graduate School of Architecture and Urban Planning

*S. Charles Lee Chair in Architecture and Urban Design
Harvey S. Perloff Chair

Graduate School of Education

Allan M. Cartter Chair in Higher Education
George F. Kneller Chair in Education and Philosophy

School of Law

Connell Chair in Law
Chair in Entertainment Law
Gleeson L. Payne Chair in Insurance Law
Security Pacific Bank Chair

Graduate School of Management

Allstate Chair in Insurance and Finance
California Chair in Real Estate and Land Economics
Edward W. Carter Chair in Business Administration
James A. Collins Chair in Management
Warren C. Cordner Chair in Money and Financial Markets
*Henry Ford II Chair in International Management
Irwin L. 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 Medberry III Chair in Management
Times Mirror Chair in Management Strategy and Policy
Arthur Young Chair in Accounting

School of Medicine

Louis D. Beaumont Chair in Surgery
Bowyer Professorship of Medical Oncology
Judson Braun Chair in Biological Psychiatry
Joseph Campbell Chair in Child Psychiatry
Edward W. Carter Chair in Internal Medicine
Castera Chair in Cardiology
Crump Chair in Medical Engineering
Max Factor Family Foundation Chair in Nephrology
Charles Kenneth Feldman Chair in Ophthalmology
Dolly Green Chair in Ophthalmology
Eleanor I. Leslie Chair in Neuroscience
Della Martin Chair in Psychiatry
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
Augustus S. Rose Chair in Neurology
Jennifer Jones Simon Chair in Biophysics
Sprague Chair in Molecular Oncology
Jules Stein Chair in Ophthalmology
Streisand Chair in Cardiology Sponsored by the American Heart Association
Leon J. Tiber, M.D. and David S. Alpert, M.D. Chair in Medicine
Wasserman Chair in Ophthalmology

School of Public Health

Fred H. Bixby Chair in Population Policy

University Administrative Officers

Regents Ex Officio

Governor of California
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Lieutenant Governor of California
Leo T. McCarthy

Speaker of the Assembly
Willie L. Brown, Jr.

State Superintendent of Public Instruction
Bill Honig

President of the Alumni Association of the University of California +
Claude B. Hutchison

Vice President of the Alumni Association of the University of California +
James Toledano

President of the University
David Pierpont Gardner

Appointed Regents+

Sheldon W. Andelson (1994)
Yvonne Brathwaite Burke (1993)
Glenn Campbell (1996)
Edward W. Carter (1988)
Frank W. Clark, Jr. (1988)
Tirso del Junco (1997)
David Geffen (1990)
Jeremiah F. Hallisey (1993)
Willis W. Harman (1990)
John F. Henning (1989)
Frank L. Hope, Jr. (1988)
Leo S. Kolligian (1997)
Vilma S. Martinez (1990)
Joseph A. Moore (1990)
Robert N. Noyce (1992)
Stanley K. Sheinbaum (1989)
William French Smith (1998)
Yori Wada (1992)
Dean A. Watkins (1996)
Harold M. Williams (1994)
William A. Wilson (1988)
David Bryan Hoffman (1987) +

Faculty Representatives to the Board of Regents
Neil J. Smelser
Murray L. Schwartz

+ Terms of Regents appointed by the Governor expire February 28 of the year named in parentheses. The Student Regent (David Bryan Hoffman) and Alumni Regents serve a one-year term beginning July 1 and ending June 30 of the year listed.

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Vilma S. Martinez

Vice Chair of The Regents
Robert N. Noyce

Acting General Counsel
James E. Holst

Secretary
Bonnie M. Smotony

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Herbert M. Gordon

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President of the University
David Pierpont Gardner

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William R. Frazer

Senior Vice President — Administration
Ronald W. Brady

Vice President — Agriculture and Natural Resources
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Vice President — Budget and University Relations
William B. Baker

Vice President — Health Affairs
Cornelius L. Hopper, M.D.

Executive Assistant to the President
Gloria L. Copeland

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Charles J. Hitch

President of the University, Emeritus, and Professor of Business Administration, Emeritus
Clark Kerr

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Vice President of the University, Emeritus, and Professor of Physics, Emeritus
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Vice President — Financial and Business Management, Emeritus, and Professor of Pathology, Emeritus
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Ira Michael Heyman

Chancellor at Davis
James H. Meyer

Chancellor at Irvine
Jack W. Peltason

Chancellor at Los Angeles
Charles E. Young

Chancellor at Riverside
Theodore L. Hullar

Chancellor at San Diego
Richard C. Atkinson

Chancellor at San Francisco
Julius R. Krevans

Chancellor at Santa Barbara
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Chancellor at Santa Cruz
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University Professors

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Melvin Calvin, *Emeritus University Professor,* Berkeley, Department of Chemistry

Gerard Debreu, *University Professor,* Berkeley, Departments of Economics and Mathematics

Murray Krieger, *University Professor,* Irvine, Department of English and Comparative Literature

Julian S. Schwinger, *University Professor,* Los Angeles, Department of Physics

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Edward Teller, *Emeritus University Professor,* Livermore, Lawrence Livermore Laboratory

Charles H. Townes, *University Professor,* Berkeley, Department of Physics

Sherwood L. Washburn, *Emeritus University Professor,* Berkeley, Department of Anthropology

John R. Whinnery, *University Professor,* Berkeley, Department of Electrical Engineering and Computer Sciences

Lynn White, Jr., *Emeritus University Professor,* Los Angeles, Department of History

UCLA Administrative Officers

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Vice Chancellor—Research Programs
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Vice Chancellor—Student Affairs
Winston C. Doby, Ed.D.

Administrative Vice Chancellor
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Vice Chancellor—Institutional Relations
Elwin V. Svenson, Ed.D.

Vice Chancellor—Public Affairs
Alan F. Charles, J.D.

Vice Chancellor—Planning
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Leonard Freedman, Ph.D.

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School of Dentistry
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Graduate School of Education
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School of Engineering and Applied Science
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School of Law
Susan W. Prager, J.D.

College of Letters and Science

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Division of Life Sciences
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Division of Physical Sciences
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Division of Social Sciences
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Division of Honors
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Graduate School of Management
J. Clayburn La Force, Ph.D.

School of Medicine
Kenneth I. Shine, M.D.

School of Nursing
Ada M. Lindsey, R.N., Ph.D.

School of Public Health
Abdelmonem A. Afifi, Ph.D., *Acting*

School of Social Welfare
Leonard Schneiderman, Ph.D.

Counselors and Advisers

Department/Major	Counselor/Adviser	Address	Extension
Aerospace Studies	Sally A. Cohen, Staff	208 Men's Gym	51743
	Richard L. Folks, Faculty	212 Men's Gym	51743
African Area Studies (Graduate)	John A. Distefano, Staff	10250 Bunche Hall	52944
	Teshome H. Gabriel, Faculty	10375 Bunche Hall	53686
African Languages (Undergraduate)	Russell Schuh, Faculty	2113 Campbell Hall	51574
African Studies (Undergraduate)	Christopher Ehret, Faculty	6265 Bunche Hall	54093
Afro-American Studies	Claudia Mitchell-Kernan, Faculty (G/UG)	3111 Campbell Hall	57403
	Anne Murphy, Staff (UG)	3105 Campbell Hall	53776
	Melvin Oliver, Faculty (UG)	3111 Campbell Hall	57403
American Indian Studies (Graduate)	Kenneth Lincoln, Faculty	3220 Campbell Hall	57315
	Earl Sisto, Staff	3215 Campbell Hall	50893
Anatomy (Graduate)	Earl Eldred, Faculty	73-245 CHS	59556
Anesthesiology/Nurse Anesthesia (Graduate)	Victoria Coon/Linda Finander/Sandra Frye/ Charles Griffis/Lois Remely/Shannon Steck, Faculty	56-125 CHS	54123
Anthropology	Liza Cerroni-Long, Staff (UG)	302 Haines Hall	56668
	Ann Walters, Staff (G/UG)	341 Haines Hall	52511
Applied Linguistics (Graduate)	Shaheen Carrigan, Staff	3300A Rolfe Hall	61985
Archaeology (Graduate)	Ilene Alexander Swartz, Staff	288 Kinsey Hall	68934
Architecture and Urban Planning (Graduate)	Architecture/Urban Design: Larry Nadeau, Staff	B302 Architecture	50525
	Urban Planning: Barbara Vineyard, Staff	1125J Architecture	57331
Art, Design, and Art History	Merrillyn Pace, Staff (G)	1300 Dickson	53480
	Art/Art History: Zena Pearlstone, Staff (UG)	1300 Dickson	53077
	Design: Maggie O'Fallon, Staff (UG)	5238 Dickson	53645
Asian American Studies	Oaksook Kim, Staff (G)	3232 Campbell Hall	52974
	Harry Kitano, Faculty (G/UG)	200 Dodd Hall	53067
	Stanley Sue, Faculty (G/UG)	1243B Franz Hall	53140
Astronomy	Mark Morris, Faculty (G)	8979 Math Sciences	53320
	Mirek Plavec, Faculty (UG)	8979 Math Sciences	51672
	Marietta Stevens, Staff (G/UG)	8979 Math Sciences	53323
Atmospheric Sciences	Dorothy Deutsch, Staff (G/UG)	7127 Math Sciences	51954
	Roger Wakimoto, Faculty (UG)	7127 Math Sciences	51751
Biological Chemistry (Graduate)	Bruce Howard, Faculty	33-257 CHS	56477
Biology	Roxane Alkaslassy, Staff (UG)	2312 Life Sciences	51680
	Henry Hespenheide, Faculty (G)	2203 Life Sciences	53170
	Harumi Kasamatsu, Faculty (G)	2203 Life Sciences	53048
Biomathematics (Graduate)	Susan Hodge, Faculty (UG)	AV-617 CHS	51851
	Carol Newton, Faculty (G)	AV-617 CHS	55800
Biomedical Physics/Radiological Sciences (Graduate)	Loretta Moore-Brookes, Staff	AR-259 CHS	57811
Chemistry and Biochemistry	Phyllis Jergenson, Staff (G)	4006 Young Hall	53150
	Dorothy Seymour, Staff (UG)	4016 Young Hall	51859
Chemistry/Materials Science (Undergraduate)	Barbara Brooks, Staff	6532K Boelter Hall	58918
	Bruce Dunn, Faculty	6531 Boelter Hall	51591

Department/Major	Counselor/Adviser	Address	Extension
Chicano Studies (Undergraduate)	Carlos Vasquez, Staff	3121 Campbell Hall	52365
Classics	Michael Haslam, Faculty (G)	7339 Bunche Hall	53680
	C. Tina Nikos, Staff (UG)	7349 Bunche Hall	54679, 54171
Communication Studies (Undergraduate)	Marde Gregory, Faculty	232 Royce Hall	68429, 53303
Comparative Literature (Graduate)	Arnold Band, Faculty	334B Royce Hall	53756
	Katherine King, Faculty	334 Royce Hall	57650
	Kathleen Komar, Faculty	330 Royce Hall	57650
Cybernetics (Undergraduate)	Beth Rubin, Staff	4731 Boelter Hall	57482
Dance	Allegra Snyder, Faculty (G)	144J Dance Building	61336
	Wendy Urfrig, Staff (UG)	124 Dance Building	58537, 53951
Dentistry/Oral Biology (Graduate)	George Bernard, Faculty	73-084 Dentistry	51955
	Soon-Ok Dixon, Staff	63-050 Dentistry	51955
Earth and Space Sciences	Clemens A. Nelson, Faculty (UG)	4686 Geology	51363
	Gerhard Oertel, Faculty (G)	4642 Geology	51780
	Spring Verity, Staff (G/UG)	3683 Geology	53917
East Asian Languages and Cultures	Chinese:		
	Kuo-Yi Pao, Faculty (UG)	290 Royce Hall	52621
	Richard Strassberg, Faculty (G)	290 Royce Hall	57868
	Japanese:		
	Ben Befu, Faculty (G)	290 Royce Hall	57571
	Robert Epp, Faculty (UG)	290 Royce Hall	68235
East Asian Studies (Undergraduate)	Herbert Plutschow, Faculty	264 Royce Hall	59297
Economics	Lora Clarke, Staff (UG)	2253 Bunche Hall	55118
	Dorothy Yamamoto, Staff (G)	2263 Bunche Hall	61413
Education (Graduate)	Joan Rodman, Staff	201 Moore Hall	58328
Engineering and Applied Science	Office of Student Affairs (UG)	6426 Boelter Hall	52826
	Chemical:		
	Ken Nobe, Faculty (G)	5405 Boelter Hall	52491
	Civil:		
	Stanley Dong, Faculty (G)	4514 Boelter Hall	55353
	Computer Science:		
	Milos Ercegovac, Faculty (G)	3732 Boelter Hall	56830
	Electrical:		
	H.J. Orchard, Faculty (G)	6730 Boelter Hall	53155
	Materials Science:		
	Aly Shabaik, Faculty (G)	6532 Boelter Hall	55143, 55473
	Mechanical, Aerospace and Nuclear:		
	Gerald Pomraning, Faculty (G)	6291 Boelter Hall	51744
English	Adele Butterfield, Staff (G)	4306 Rolfe Hall	51223
	Karen Krizman/Edith Lufkin, Staff (UG)	4305 Rolfe Hall	51389
English as a Second Language (Graduate)	Shaheen Carrigan, Staff	3300A Rolfe Hall	61985
Environmental Science and Engineering (Graduate)	William Glaze, Faculty	46-081 Public Health	61278
Fine Arts, College of	Students A-G:		
	Beth Gray, Staff	A239 Murphy Hall	59705
	Students H-O:		
	Brian Reverman, Staff	A239 Murphy Hall	59705
	Students P-Z:		
	Lynn Ennis, Staff	A239 Murphy Hall	59705
Folklore and Mythology (Graduate)	Robert Georges, Faculty	1041 GSM	53962
French	Patrick Coleman, Faculty (G)	170 Haines Hall	54183
	Madeleine Korol-Ward, Faculty (UG)	192 Haines Hall	51210
Geography/Ecosystems	Alice Gold, Staff (G)	1251 Bunche Hall	54655
	Sandra Risdon, Staff (UG)	1113 Bunche Hall	51166

Department/Major	Counselor/Adviser	Address	Extension
Germanic Languages	Students A-L:		
	Craig Christy, Faculty (UG)	300 Royce Hall	53955
	Wolfgang Nehring, Faculty (G)	326 Royce Hall	53955
	Students M-Z:		
	Steven Martinson, Faculty (UG)	302C Royce Hall	53955
	Franz Bauml, Faculty (G)	328 Royce Hall	53955
History	Sylvia Dillon, Staff (UG)	6248 Bunche Hall	53720
	Ruth Ann Raftery, Staff (G)	6273 Bunche Hall	53124
History/Art History (Undergraduate)	Zena Pearlstone, Staff	1300 Dickson	53077
Indo-European Studies (Graduate)	Raimo Anttila, Faculty	2113 Campbell Hall	59651
	Mitsuko Taketa-Epr Staff	1037 GSM	54242
Intercollegiate Athletics	Pat Ralls/Fred S ock, Staff	Morgan Center	66786, 59514
Islamic Studies (Graduate)	Ismail Poonawala, Faculty	376 Kinsey Hall	61391
Italian	Giovanni Cecchetti, Faculty (G)	360 Royce Hall	61346
	Althea Reynolds, Faculty (UG)	340 Royce Hall	53055
Kinesiology	Linda Robertson, Staff (UG)	2834 Slichter Hall	53891
	Joan Walker, Staff (G/UG)	2834 Slichter Hall	53891
Latin American Studies	Carolyn Ramirez-La Faso, Staff (G/UG)	10347 Bunche Hall	66571
	Linda Rodriguez, Faculty (G/UG)	10347 Bunche Hall	66571
Law, School of (Graduate)	Admissions Information	50 Dodd Hall	52080
Letters and Science, College of	College Counseling Service	A316 Murphy Hall	51965
Library and Information Science (Graduate)	Constance Nyhan/Teresa Jacobsen, Faculty	120 Powell Library	54351
Linguistics	John DuBois/Timothy Stowell, Faculty (UG)	2113 Campbell Hall	50634, 55060
	Paul Schachter, Faculty (G)	2113 Campbell Hall	50634
	Russell Schuh, Faculty (G/UG)	2113 Campbell Hall	51574
Management (Graduate)	MBA: Ilene Haniotis, Staff	3371 GSM	58874
	Ph.D.: Patricia Reilly, Staff	3379 GSM	52824
Mathematics	Tom Coda, Staff (UG)	6375 Math Sciences	61286
	Edward Effros, Faculty (G)	6356 Math Sciences	54971
Medicine, School of (Graduate)	Admissions Information	13-144 CHS	56081
Microbiology	Fred Eiserling, Faculty (G)	241A MBI	51974
	Stephanie Stern, Staff (UG)	5205 Life Sciences	58482
Microbiology and Immunology (Graduate)	Dexter Howard, Faculty	43-268 CHS	56661
Military Science	William Coffey/Anthony Dennard/Carla Smith/ Johnnie Steuber/James Woodward/Richard Zeiler, Faculty	142 Men's Gym	57381
Molecular Biology (Graduate)	Emil Reisler, Faculty	168 MBI	51018
Music	Alfred Bradley, Staff (UG)	2539 Schoenberg Annex	54768
	Mary Crawford, Staff (G)	2539 Schoenberg Annex	54769
Naval Science	John Misiewicz/Peter Shaner, Faculty	123 Men's Gym	59075
Near Eastern Languages and Cultures	Herbert Davidson, Faculty (UG)	376 Kinsey Hall	54165
	Thomas Penchoen, Faculty (G)	376 Kinsey Hall	61388
Near Eastern Studies (Undergraduate)	Stanford Shaw, Faculty	5353 Bunche Hall	51374, 54601
Neuroscience (Graduate)	Jody Spillane, Staff	73-346 CHS	58153
Nursing	Andrea Miller/Kathy Scrivner, Staff (UG)	2-200 Factor Building	55654
	Kathy Scrivner/Karen Taka, Staff (G)	2-137 Factor Building	57181
Oral Biology/Dentistry (Graduate)	George Bernard, Faculty	73-084 Dentistry	51955
	Soon-Ok Dixon, Staff	63-050 Dentistry	51955
Pathology (Graduate)	Judith Berliner, Faculty	13-327 CHS	55719, 52436
Pharmacology (Graduate)	Arthur Cho, Faculty	23-278 CHS	56567

Department/Major	Counselor/Adviser	Address	Extension
Philosophy	Kristin Marr, Staff (G)	329 Dodd Hall	61356
	Betty Wilson, Staff (UG)	321 Dodd Hall	54641
Physics	Penny Lucky, Staff (G)	3-145G Knudsen Hall	52307
	Julie Sturm, Staff (UG)	3-145A Knudsen Hall	52453
Physiology (Graduate)	Sheri Klein, Staff	53-170 CHS	56717
	Michael Letinsky, Faculty	A222B JLNRC	56215
Political Science	Barbara Jess, Staff/Rick Baum, Faculty (G)	4266 Bunche Hall	53372
	Vicki Waldman, Staff/Douglas Hobbs, Faculty (UG)	4256 Bunche Hall	53862
Psychiatry and Biobehavioral Sciences (Graduate)	Mary Mossman, Staff	B7-349 NPI	50770, 53855
Psychology	Dena Chertoff, Staff (G)	3457 Franz Hall	54117
	Steve Herbert, Staff (UG)	1513 Franz Hall	59885
	Penelope Hein Unruh, Staff (UG)	1513 Franz Hall	51603
Public Health (Graduate)	Roslyn B. Alfin-Slater, Faculty	16-071 Public Health	55516
	Glenda Baker, Staff	16-071 Public Health	55516
Radiological Sciences/Biomedical Physics (Graduate)	Loretta Moore-Brookes, Staff	AR-259 CHS	57811
Religion, Study of (Undergraduate)	Robert Adams, Faculty	355 Dodd Hall	56045
Romance Linguistics and Literature (Graduate)	Michelle Markel-Cohen, Staff	359 Royce Hall	50237
	A. Carlos Quicoli, Faculty	5310 Royce Hall	51036
Scandinavian Section	Torill Dunkell, Staff (G/UG)	332 Royce Hall	52432
	James Massengale, Faculty (G/UG)	332 Royce Hall	54039, 52432
Slavic Languages and Literatures	Edward Denzler, Faculty (UG)	115 Kinsey Hall	52947, 52676
	Thomas Eekman, Faculty (G)	115 Kinsey Hall	58151, 52676
Social Welfare (Graduate)	Terrence Roberts, Faculty	200 Dodd Hall	57738
Sociology	Angela Detlev, Staff (G)	254C Haines Hall	51026
	Mary Jo Johnson, Staff (UG)	254A Haines Hall	51215
Spanish and Portuguese	Hilda Peinado, Staff (G/UG)	5312 Rolfe Hall	51430
Theater, Film, and Television	Roslyn Garth, Staff (UG)	1319 Macgowan Hall	51766
	Steven Moore, Staff (UG)	1321 Macgowan Hall	53663
	Carol Sherman, Staff (G)	1327 Macgowan Hall	51749
	Cecilia Wilmott, Staff (G)	1327 Macgowan Hall	53596
Women's Studies (Undergraduate)	Mary M. Smith, Staff	240 Kinsey Hall	68101
World Arts and Cultures (Undergraduate)	Wendy Urfrig, Staff	124 Dance Building	58537, 53951

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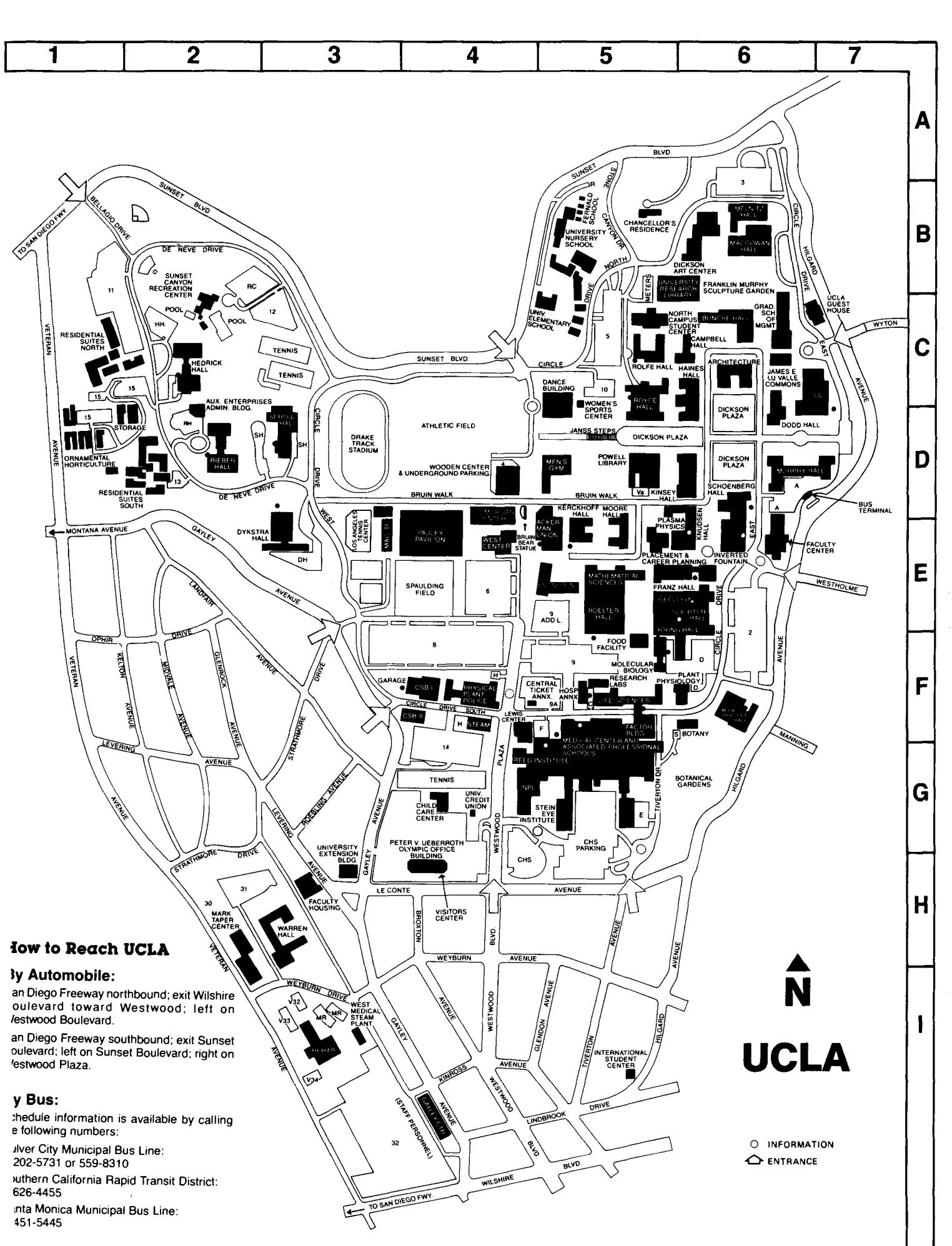


How to Reach UCLA

By Automobile:

an Diego Freeway northbound; exit Wilshire oulevard toward Westwood; left on Vestwood Boulevard.

an Diego Freeway southbound; exit Sunset oulevard; left on Sunset Boulevard; right on Vestwood Plaza.

By Bus:

chedule information is available by calling e following numbers:

ulver City Municipal Bus Line:
202-5731 or 559-8310

uthern California Rapid Transit District:
626-4455

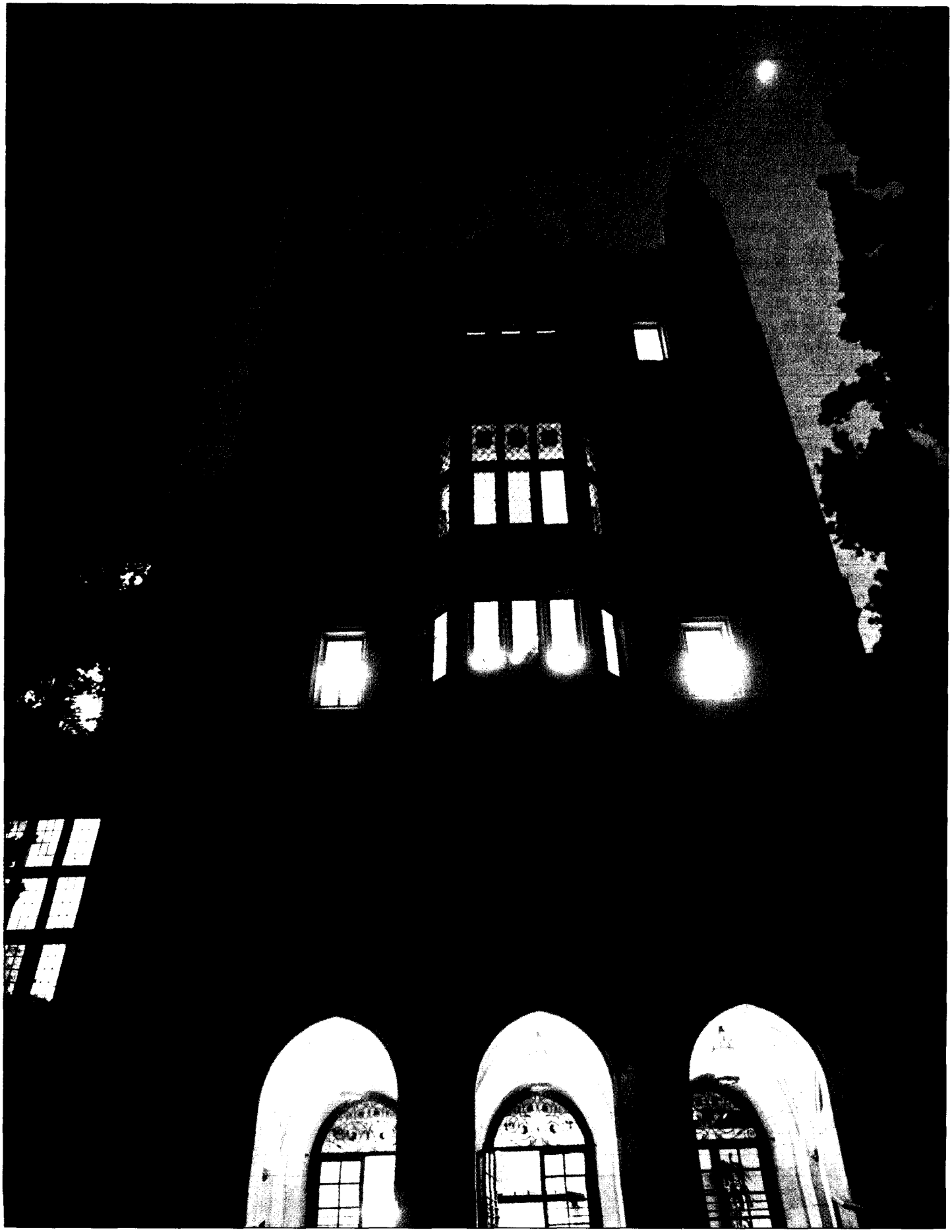
nta Monica Municipal Bus Line:
451-5445

CAMPUS LEGEND

Building	Grid No.
Ackerman Student Union	E5
Architecture	C6
Auxiliary Enterprises Administration Building	D2
Belt Library, Dickson Art Center	B6
Boelter Hall	F5
Botanical Gardens	G6
Botany	F6
Bunche Hall	C6
Campbell Hall	C6
Campus Services Buildings I and II	F4
Center for the Health Sciences	G5
Biomedical Cyclotron	G5
Brain Research Institute	G5
Marion Davies Children's Center	G5
Dentistry, School of	G5
Factor Building	F5
Jerry Lewis Neuromuscular Research Center	F5
Medical Center	G5
Medicine, School of	G5
Neuropsychiatric Institute and Hospital	G5
Public Health, School of	G5
Reed Neurological Research Center	G5
Jules Stein Eye Institute	G5
Chancellor's Residence	B5
Child Care Center	G4
Court of Sciences Food Facility	F5
Dance Building	C5
Dickson Art Center	B6
Dodd Hall	C6
Drake Track Stadium	D3
Dykstra Hall	E3
Engineering I	E5
Faculty Center	E6
Franz Hall	E6
Garage	F4
Gayley Center	I4
Geology	E6
Graduate School of Management	C6
Haines Hall	C6
Hedrick Hall	C2
Mira Hershey Hall	F6
International Student Center	I5
Kerckhoff Hall	E5
Kinsey Hall	D6
Knudsen Hall	E6
Law	C7
Life Sciences	F5
Los Angeles Tennis Center	E3
James E. Lu Valle Commons	C6
Macgowan Hall	B6
Mathematical Sciences	E5
Melnitz Hall	B6
Men's Gymnasium	D5

Building	Grid No.
Molecular Biology Institute	F5
Moore Hall	E5
J.D. Morgan Intercollegiate Athletics Center	D4
Murphy Hall (Administration)	D6
Franklin Murphy Sculpture Garden	B6
North Campus Student Center	C5
Ornamental Horticulture	D1
Pauley Pavilion	E4
Physical Plant Office	F4
Placement and Career Planning Center	E5
Plant Physiology	F6
Plasma Physics	E5
Police, Campus	F4
Powell Library	D5
Rehabilitation Center	I3
Residential Suites North	C1
Residential Suites South	D1
Rieber Hall	D2
Rolfe Hall	C5
Royce Hall	C5
Schoenberg Hall	D6
Slichter Hall	E6
Sproul Hall	D3
Sunset Canyon Recreation Center	B2
UCLA Guest House	C7
Peter V. Ueberroth Building	H4
University Credit Union	G4
University Elementary School	B5
University Extension Building	H3
University Nursery School	B5
University Research Library	B6
Visitors Center (Ueberroth Building)	H4
Warren Hall	H2
James E. West Center	E4
Wooden Recreation and Sports Center	D4
Young Hall	F6

Parking Structures and Lots	Grid No.
Hilgard-Sunset (3)	A6
Hilgard-Westholme (2)	E6
Sunset-Westwood (5)	C5
Westwood-Circle Drive (9)	F5
Gayley-Landfair (14)	G4
Gayley-Strathmore (8)	F4
Medical Visitors (CHS)	G5
James West Center (6)	E4
Wooden Center (4)	D4
Parking Lot 1	G4
Parking Lot 32	I3



Correspondence Directory

University of California, Los Angeles, CA 90024
Main campus telephone: (213) 825-4321

Office	Location	Telephone (area code 213)
Academic Advancement Program	1209 Campbell Hall	825-1481
Accounting Services — Student Services	2333 Murphy Hall	825-5067
Admissions		
Undergraduate	1147 Murphy Hall	825-3101
Graduate	1247 Murphy Hall	825-1711
Alumni Association	James West Center	825-3901
Cashier's Office, Main	1125 Murphy Hall	825-2201
Dean of Students Office	2224 Murphy Hall	825-3871
Financial Aid Office	A107 Murphy Hall	206-0432
Graduate Division		
Affirmative Affairs Office	1242 Murphy Hall	825-2780
Fellowship and Assistantship Section	1228 Murphy Hall	825-3521
Student and Academic Affairs Section	1225 Murphy Hall	825-4226
Housing Office	100 Sproul Hall	825-4491
International Student Center	1023 Hilgard Avenue	825-3384, 208-4587
International Students and Scholars, Office of	105 Men's Gym	825-1681
Libraries		
College Library	Powell Library Building	825-1938
University Research Library	URL Building, North Campus	825-1201
Ombudsman	274 Kinsey Hall	825-7627
Parking Service	280 GS Structure 8	825-9871
Placement and Career Planning Center	PCPC Building	825-2981
Registrar's Office	1134 Murphy Hall	825-1091
Student Health Service	A2-130 Center for the Health Sciences	825-4073
Students' Store	B Level, Ackerman Union	825-7711
Summer Sessions	1254 Murphy Hall (100 Dodd Hall after October 1, 1986)	825-8355
University Extension	10995 Le Conte Avenue	825-9971
Visitors Center	1417 Peter V. Ueberroth Building	825-4338